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PROYECTO MANEJO DE RECURSOS NATURALES

REVIEW AND ANALYSIS

OF

ACTIVITIES AND PRELIMINARY RESULTS

VERTICAL INTEGRATION OF VEGETABLE (AND FRUITS) ~~MARKETING~~ PROJECT

WORK DRAFT

(~~FINAL~~ REPORT IN SPANISH)

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Introduction

This paper reviews the activities completed by the vegetable production and marketing project "Vertical Integration of Vegetable (and Fruits)Marketing" during the period 16 April to 31 December 1984, and analyses the effect these activities have had on the implementation of the objectives of the report.

The paper is divided into four parts:

The first part, "Principal Objectives of the Project" restates the objectives established for the project.

The second part, "Review of Implementation of Phase I, Experimental Phase, of Project till end of 1984" summarizes and evaluates what has been accomplished towards the implementation of each one of the principal objectives of the project.

The third part, "Conclusions" lists our conclusions about the objectives of the project which have been completed, and the ones which are either pending or need modification.

The fourth part, "Recommendations" presents our recommendations for future development of our project based on its performance during this reporting period.

Review and Analyses of Activities and Preliminary Result of "Vertical Integration of Vegetable (and Fruits) Marketing" Project.

A. Principal Objectives of Project (Phase I = Experimental Phase).

1. Selection of farmers

To select a restricted group of highly qualified vegetable farmers (7-10) to participate in the experimental phase of the project. Each selected farmer must be an active member of the local UOC and be highly recommended by the local UOC officers. He must have full control (own or rent) of enough irrigable land (about one manzana or 7.000 m²) to participate effectively in the Project, and be able to grow simultaneously different vegetables for most of the year. He must be willing to agree to a schedule of planting and harvesting of several vegetables through-out the year, and to accept the discipline of production, quality control and appropriate packing and to retain for local disposal his lower quality production. The selected farmer will be made fully aware of the experimental character of the Phase I of the Project and of the risk of the Project; furthermore he will be instructed to keep his traditional marketing outlets, and reserve for them some 2/3 of his total vegetable production.

2. Full participation by UOC's

To ensure the full understanding and cooperation of the local UOC's in the setting up and implementation of the Project. To cooperate with and monitor the UOC's selection of the local farmers proposed for participation in the experimental phase of the Project. It is expected that this selection will be done directly by the local farmers cooperatives, under the guidance of the local UOC's agronomists and social promoters.

3. Production objectives of experimental phase

To determine through the cooperation of a restricted group of farmers (7 to 10) cultivating a limited area (totalling 7 to 10 manzanas) of irrigable land, whether it will be possible to grow enough varieties of vegetables (6) in

sufficient quantities, during most of the year, to assure a constant delivery of appropriate quantities of different vegetables to selected outlets in Tegucigalpa.

4. Tailor initiative to supermarkets' requirements

To make possible for selected supermarkets in Tegucigalpa to accept selected vegetable farmers as direct suppliers of vegetables for their stores. To achieve this objective the selected farmers will have to be able to deliver as a group or singly, directly to the cooperating store, at an agreed time and day (or days) of the week, through-out most of the year, a predictable quantity of quality vegetables. This approach will make possible for the supermarkets to decrease their reliance on the wholesalers while not disrupting their daily sales of vegetables.

5. Selection of supermarkets

To select several supermarkets in Tegucigalpa which will be willing to buy vegetables directly from farmers, and negotiate provisional terms of delivery and pricing. These terms will be subject to adjustments during the life of the experimental phase of the project to reflect experiences gained during its operation.

6. Quality control

To develop awareness on how to achieve and maintain vegetable quality at production, harvesting, transportation, warehousing and retail levels, and establish primary quality control practices.

7. Packing

Introduce general purpose packing box for "soft" vegetables (peppers, broccotomatoes, etc.), in order to protect quality, control transportation/distribution damages, decrease handling, and make possible direct farm-site to store-shelf sale of fresh vegetables.

8. Truck farming

Assign to farmers groups responsibility for direct hiring of pick-up truck or similar transport to deliver own production at established times to Tegucigalpa cooperating supermarkets.

B. Review of Implementation of Phase 1 "Experimental Phase" of Project.

1. Selection of farmers

In May a work plan was prepared (see strategy section, "Field Trips", of Project Proposal. June 84) identifying the principal tasks which had to be accomplished to obtain the cooperation and to select the farmers for the experimental phase of the Project.

The agronomists of the local UOCs became early participants in the field activities of the Project and contributed their knowledge of the agricultural conditions of the area, and of the local farmers to identify all the potential farmers who could qualify for future participation in the Vegetable Project. The agronomist took us to meet each one of these potential participants, to visit the plot of irrigated land that each one might have been able to contribute to the Project; the agronomists explained to each one of the farmers the objectives of our Project and helped us in our interviews with the farmers. As a result of suggestions from the "Promocion y Extension" Department at our headquarter it was decided to give to the local farmers' cooperatives the responsibility for proposing the potential members for our vegetable project; and to let the local UOC agronomist decide which ones of the proposed farmers could be accepted in the Project.

Several field visits were made to each one of the UOCs affected by the project (Guacerique, Tatumbra, Jutiapa and Río Chiquito) to discuss the details of the Project with the local promoters and agronomists; to make presentations to the local farmers' cooperatives; to explain to the local potential participants the objectives, benefits risks and limitations of the project and the necessity of strong cooperation amongst the farmers in marketing and quality control; to evaluate with our HQ vegetable expert together with the local agronomists the agricultural practices favored by the potential participants, the quality of their land, and to advice them on general horticulture activities.

These preparatory activities continued through-out June, July and August. By the middle of August a general meeting was called at our HQ office with all the farmers selected for the project, and the UOCs and HQ personnel involved

in the project. Our H.Q horticulture expert and the writer made a detailed presentation of the project's objectives, limitations, potential benefits and risks; we emphasized both the "experimental" nature of the first phase of the project, and the limited commitment of the participating farmers who were specifically requested to continue their "traditional" vegetable marketing practices, and to reserve for the project only about 1/3 of their total future quality vegetable production. At the end of the meeting the farmers were asked to fill up a questionnaire (see Appendix 2) detailing the amount of land they had available, the amount they were willing to contribute to the project, and the 4 vegetable crops they would have preferred to grow on their land. Then they were formally asked to join the project. 14 farmers elected to join. Table 1 identifies these farmers, their UOC of residence, the amount of land they offered to contribute to the project, the amount it was actually accepted (about 60% of the offered), and the amount of land which is still under vegetable cultivation at the end of this reporting period (31 Dec. 1984).

Table 2 identifies the individual farmers' crops preferences; the amount of land accepted for the project and its projected use; and their location.

Table 3 identifies the amount of land and the crops under cultivation by each participating farmer, at the end of this reporting period.

TABLE # 1

Cooperating Farmers and land assigned to Project

Serial # (a)	Name of Farmer	U.O.C. Locality	IRRIGATED LAND AREA (MZ)		
			Offered by farmers	Accepted by Project	Under Cultivation
1	Albertino Rodríguez F.	B	1	1	1 5/8 +
2	Juventino Ramos Rodríguez	B	1	1	1 1/2 +
3	Gregoric Ortega	C	1/4	1/4	1/4 = (c)
4	René Izaguirre	C	3	1 3/4	3 1/4 +
5	Juan Bautista López	C	6	2	1 3/16 -
6	Higinio Izaguirre Godoy	C	1/4	1/2	1/2 =
7	Isidro Martínez Funes	A	1/2	1/2	(b) =
8	José Trujillo C	B	3/4	1/4	1/2 +
9	Federico Andrade López	B	2	1	1 1/2 +
10	Ildefonso Servellón Bonilla	A	1	1	5/16 -
11	Norberto Domínguez	D	1	1/2	1/2(d)=
12	Ramón Martínez Servellón	A	1/4	1/4	13/16 +
13	Dionisio Antonio Delgado	D	1	1	7/16 -
14	Santos Cáceres	D	2	1	9/16 -
TOTALES			20	12	12 15/16

A= GUACERIQUE B= TATUMBLA C= JUTIAPA D= RIO CHIQUITO

- (a) Serial number was established on the basis of the farmers' order of response to the questionnaire (see appendice) they completed to join the project.
- (b) Isidro Martínez cultivation have been included with Ramón Martínez, since they elected to start working together as a "father & son" team.
- (c) None of his land is irrigated
- (d) Based on previous statements since he was only farmer we were not able to interview during month of December 1984.

Table #1 shows that while the total amount of land under cultivation for the Project has remained about the same, there have been some changes in the amount of land that the individual participants have under cultivation by the end of this reporting period. Also, several farmers have changed the location of the plot of land they are contributing to the project either because of new land rental contracts, or because of better irrigation characteristics or because of personal reasons: "my son thinks it is better", "it is very good", etc. In summary six farmers have increased the size of their lot; 4 have kept the same size; and 4 have reduced it. Only one farmer (#3) has changed the location of his plot to a new one, right next to his house but with no irrigation facilities; the others have kept land with about equal or better irrigation characteristics than the lots originally considered for the project.

The average amount of land thus still under cultivation remains about 1 m² per participant. Where there have been major changes has been in the use made of the land (see Table #2 and Table #3) and in the careful execution of the growing patterns originally proposed for the months of October, November and December 1984 and which were spelled out in the individualized work plans which were given to each farmer. This matter will be further discussed in section B-3, "Production objectives of Experimental Phase" and B-4, "Tailor initiative to supermarket requirements".

TABLE #2

VEGETABLE AREAS ORIGINALLY ACCEPTED BY PROJECT
& FARMERS' PRODUCT PREFERENCES *

LINE	FARMER'S SERIAL # PRODUCT	VEGETABLE/AREA ASSIGNED TO EACH FARMER & FARMERS' PRODUCT PREFERENCE**														TOTAL AREA MZ
		A GUACERIQUE			B TATUMBLA				C JUTIAPA				D RIO CHIQUITO			
		7	10	12	1	2	8	9	3	4	5	6	11	13	14	
a	Cabbage	* $\frac{1}{4}$	* $\frac{1}{2}$	*	*	* $\frac{1}{4}$	*	* $\frac{1}{2}$	*		* $\frac{1}{2}$	*	*		*	2
b	Tomatoes				* $\frac{1}{2}$											1
c	Carrots			* $\frac{1}{4}$		* $\frac{1}{4}$	*	*	*	* $\frac{1}{2}$	$\frac{1}{2}$				$\frac{1}{2}$	1
d	Potatoes		* $\frac{1}{2}$							* $\frac{1}{2}$	$\frac{1}{4}$				$\frac{1}{2}$	2
e	Onions				* $\frac{1}{2}$	* $\frac{1}{4}$				* $\frac{1}{4}$	*			* $\frac{1}{2}$		1
f	Green Peppers				*	* $\frac{1}{4}$	*		*	*	* $\frac{1}{4}$		* $\frac{1}{4}$		* $\frac{1}{4}$	1
g	String Beans						* $\frac{1}{4}$	* $\frac{1}{4}$			$\frac{1}{2}$					1
h	Lettuce	*	*	*					* $\frac{1}{4}$			* $\frac{1}{4}$				$\frac{1}{2}$
i	Beets	*	*	*				* $\frac{1}{4}$			* $\frac{1}{4}$	* $\frac{1}{4}$	* $\frac{1}{4}$	*	*	1
j	Cauliflower	$\frac{1}{4}$	*							$\frac{1}{4}$				*		$\frac{1}{2}$
k	Broccoli									$\frac{1}{4}$				$\frac{1}{4}$	$\frac{1}{4}$	1
l	Others															-
m	AREA TOTAL	$\frac{1}{2}$	1	$\frac{1}{4}$	1	1	$\frac{1}{4}$	1	$\frac{1}{4}$	$1\frac{3}{4}$	2	$\frac{1}{2}$	$\frac{1}{2}$	1	1	12

** Each farmer was allowed 4 product preferences; * asterisks indicate vegetables (see horizontal line identified by letter) each farmer (see vertical columns identified by numbers) preferred to cultivate in his plot. See Table #1 for key to farmers' serial numbers.

Table #2 identifies the product preferences stated by each farmer at our general meeting of August 1984.

In order to meet the marketing objectives of our project and satisfy the requirements of the cooperating supermarkets some of the farmers were asked --at the same meeting-- to grow some crops other than the ones they had proposed. They agreed. As a result 9 farmers were assigned to grow crops they had selected; 3 were assigned 1 crop they had not selected; and 2 were assigned 2 crops they had not selected. Later on, when the final "personalized" work plans were proposed and distributed to each farmers the total number of crops per farmer was further reduced.

Nevertheless, very few farmers took full advantage of the detailed work schedule (calendario) that our project proposed for each one of them, even though the scheduled had been simplified to meet their requirements and the number of crops had been reduced to less than 3 different vegetables for most of the participants.

This failure can be attributed to overly ambitious planning on our part --we will need to take more time to change the planting patterns of our farmers-- to insufficient follow-up on the part of the local agronomist; and to the lack of an active "insumos" support program which could have made available the right seeds --and other inputs-- at the scheduled seeding times for each farmer. Perhaps, the availability of some short-term loans, particularly to finance the purchase of the required "insumos", could also have helped the fulfillment of the project plans.

Other shortcomings of the project were our inability to supply potato seeds which we had promised to make available to some of our participants --the seed division of Recursos Naturales was unable to supply us with the potato seeds they had promised us--, and the farmers inability to resist the temptation to sell their entire crop to their usual outlets when offered an attractive price. For example a participant in Jutiapa sold his entire carrot crop --almost a manzana-- for 2,000 lempiras while still in the field. His justification was that the crop had cost him only 800 lempiras and the profit as a result was good enough. Other farmers also sold their crop as it "matured" without contacting our local agronomist --or because our local agronomist did not contact them-- thus making it impossible for the project to mount a rational marketing campaign with the cooperating supermarkets in Tegucigalpa. Our agreement with the supermarket and our understanding with the cooperating

farmers was, in fact, that starting late in 1984, we would have been in the position to supply them with a continuous supply of varied vegetables in somewhat constant quantities. The private sales by the individual farmers has made it impossible to meet these objectives. On the positive side many of the cooperating farmers have already benefitted from the project by being able to sell properly grown vegetables at favorable prices; many have adopted some of the growing practices proposed by the project such as staggering and diversifying their production to avoid, at least partially, over-production when the market becomes saturated by a particular vegetable; using recommended seeds, etc. In fact, all of the participating farmers have shown great interest in continuing the project even while realizing that most of its objectives have not been met during this first reporting period.

2. Full participation by UOC's

The fulfillment of this objective has already been partially discussed in section B-1 "Selection of Farmers". We experienced a high level of cooperation during the formative stages of the project from May to August, when together we identified the potential members for the project, explained the project to the farmers, and visited the plots they proposed to contribute.

The UOC's agronomist and social promoters were particularly effective when making presentations at farmers and cooperatives' meetings to describe the objectives, limitations, experimental nature, and limited risk of the project (less than 1/3 of each individual's expected vegetable crop) and what was expected of the participating farmers.

This cooperation fell quite rapidly from September onward after the project's objectives and requirements for UOC's field cooperation became known at the project general meetings late in August at our Tegucigalpa headquarter. The management of the supervisor section of PMRN and some of the experts in social development and land conservation become highly concerned about certain aspects of the marketing content of the project, about the side effects which the vegetable project could have had on other initiatives being implemented in the area, and about the extra work load that the project would have added to the existing responsibilities of our UOC agronomists. We showed that most of the marketing questions had already been answered in our document "Preliminary Proposed for the Project Vertical Integration of Vegetable (and Fruit) Marketing, VIVM, for the Producers in the Headwaters of the Rio Choluteca Basin

June 84" , and some other questions such as "benefit/cost analysis of the Project" size of the Tegucigalpa vegetable market, price behaviour, etc. were much too premature for an "experimental" project which had not yet even started. The side effects of the project while theoretically interesting, would have been too difficult to isolate, because the vegetable project, certainly during its beginning and experimental stages which included all of 1984 and most of 1985, would have involved only a minimal number of farmers --14 out of a possible several hundred-- and would have introduced only few changes in the current agricultural practices.

The increase in work load expected of the field agronomists was unnecessarily overrated. The agronomists were, in fact, expected to spend some time with these farmers anyway, in the normal course of their field duties.

Furthermore most agronomists would have had only 2 or, at ^{the most} ~~maximum~~, 3 farmers in their UOC who, as members of our vegetable project, would have required weekly visits by them; we believed, in fact, that most of the agronomists would have been required to contribute on average of perhaps 4 hours a week of extra work to fulfill their field requirements for the project.

A new project, especially in its experimental stage when it is still trying to find out its possibilities and limitations, needs the full good-will and cooperation of all the people who are expected to become involved. Our vegetable project enjoyed this good will and cooperation during its formative stage. Unfortunately, from September 1984 onwards this cooperation began declining. During this latter period our contacts with the field agronomists also became less intensive since our principal inputs had been almost completed: the farmers and their plots had been selected, the mix of vegetables to be grown had been accepted, and the individualized work plans had been delivered and explained both to each farmer and to each UOC agronomist. The follow-up work during October, November and December, the growing months for the selected vegetable crops, fell short of the required. Little was done towards verifying that each farmer grew the crops agreed upon, according to the work plan which they had been given; or towards supporting the activities of the farmers in their application of our suggested vegetable growing practices; or towards checking when the vegetable crops were approaching their harvesting time, and organizing the farmers for the placement of 1/3 of their crops with our project for marketing directly with the Tegucigalpa outlets, which were willing to cooperate with the vegetable project

Most agronomists, when interviewed explained that they did not have enough time to dedicate to the project or that they had sent reports to their supervisors but received no response, or that they did not have a clear idea of what they were supposed to have done.

It is important to recapture the original enthusiasm that had characterized the participation of the field agronomist at the beginning of the project; and give them full recognition for the time they are required to assign to our vegetable project. Furthermore their comments and reports should be encouraged and made immediately available to our management and reinforced with appropriate field visits by our horticulture expert

3. Production Objectives of Experimental Phase:

Most of the temporary production objectives set-up for the Experimental Phase of our vegetable project were met, at least, partially. Enough farmers were selected for the project (14) and are still active (13). Enough land has been selected for the project (12 manzanas) and is still --at least ~~theoretically~~-- being used for the project (over 12 manzanas). Enough varieties of vegetables (11) were selected for the project and are still being cultivated (12).

Most of ~~these~~ vegetables (9 out of 12) are grown on lots of equal or larger size than it had originally been planned for the project; only in 3 cases were the lots reduced in size (for further details consult tables #2 and #3).

Table #3 identifies the products actually grown by the farmers for the Project as of the end of this reporting period (December 1984), and the areas under cultivation for each vegetable by each one of the participating farmers.

TABLE #3

PRESENT VEGETABLE AREAS UNDER CULTIVATION (DEC.1984)

BY PRODUCT & BY FARMER

LINE #	FARMER'S SERIAL # PRODUCT	TOTAL AREAS (MZ) UNDER CULTIVATION BY EACH COOPERATING FARMER													TOTAL AREA MZ	
		A GUACERIQUE			B TATUMBLA				C JUTIAPA				D RIO CHIQUITO			
		7	10	12	1	2	8	9	3	4	5	6	11	13		14
a	Cabbage		1/2	1/2	x	1/2	x	1/2	x	1/2	1/2	x	x	x	2 1/2	
b	Tomatoes		x	x	1	1/16	x	x	x	x	1/16	x	x	1/32	1 5/32	
c	Carrots		x	x	x	x	x	1/2	1/2	1/2	1/2	x	1/8	1/2	3 1/8	
d	Potatoes		x	x	x	3/4	1/2	x	x	x	x	x	1/32	1/8	1 5/32	
e	Onions		x	x	1/2	1/16	x	x	x	1/2	1/16	x	1/8		1	
f	Green Peppers		x	1/8	x	1/16	1/8	x	x	1/2	1/2	x	1/2 (c)	1/32	1 3/32	
g	String Beans		x	x	1/16	1/16	1/8	1/2	x	x	x	x	1/32		17/32	
h	Lettuce		x	x	x	x	x	1/2	x	1/2	1/16	x	x		13/16	
i	Beets		x	x	x	x	x	1/2	x	1/2	x	x	1/2 (c)	x	13/16	
j	Cauliflower		1/16	1/16	x	x	x	x	x	1/2	1/2	x	x	1/16	11/16	
k	Broccoli		x	1/16	x	x	x	x	x	x	x	x	x	1/16	1/8	
l	Others		x	1/16 (a)	1/16 (b)	x	x	x (d)	x	x	x	x	x	1/16	3/16	
m	TOTAL AREA	-	5/16	13/16	15/8	1 1/2	1/2	1 1/2	3 (c)	3 1/2	13/16	1/2	1/2 (c)	7/16	9/16	12 15/16

(a) garlic; (b) Radishes; (c) based on previous statements since we were not able to interview farmer during month of December 1984; (d) no irrigation available.

NOTE: For key to farmers' serial number see Table #1.

Where the projected has failed to meet its objectives has been in following up the production schedules set up for each individual farmer, and convincing them that it was not only appropriate (because of the farmer's commitments with the project) but also advantageous to reserve 1/3 of his crop for delivery and sale directly to the Tegucigalpa outlet.

Up to the end of this reporting period (31 Dec. 1984), in fact, we have received no requests to sell any of the vegetables we had schedule together with the farmers. Whatever crops have been harvested to date, they have been sold directly by the farmers themselves through their usual outlets with no difficulty whatsoever, and at satisfactory prices. To this extent, at least, the project may lay some claims to success: the farmers seems in fact to have grown the right mix of quality vegetables for sale, at the right time of the year. We have some indication that some later crops --due next February or March-- may be made available for sale thorough our project's cooperating outlets in Tegucigalpa. During the month of January 1985, we have in fact, re-established direct contacts with all the farmers in the project area to try to remedy the neglect they had experienced from September to December. As a result we might have re-established a good enough level of mutual confidence to justify our expectation that enough crops during the February-March harvest will be made available to the vegetable project to allow experimentation with direct sales to the cooperating Tegucigalpa outlets. (1)

4. Tailor initiative to supermarkets requirements

From June to September 1984, we held several discussions with the Banasupro chain of food stores and with the principal supermarkets in Tegucigalpa "Mas por Menos", "Su Casa", "Prisa", "Miraflores" and "Selecto" ("La Colonia" had not yet re-opened at the time).

These discussions determined that BANASUPRO was not yet equipped to deal effectively with fresh vegetables sales because their accounting system is geared mostly to fixed cost, canned, and long shelf-life items --their only exception, fresh fish, has required large investments in refrigeration equipment --and because few of their stores have sufficient extra space to accomodate the sale of fresh vegetables. The supermarkets, on the other hand, proved to be well equipped --some, very well equipped-- to handle fresh vegetables, and used an accounting system totally capable

(1) See Appendix 4, "Sale of Project's Vegetables to Plaza Miraflores Supermarket, 20 Feb. 1985".

to deal with the daily price changes which characterize vegetable sales.

The supermarkets were very interested in our project's initiative, and very willing to cooperate in its "experimental" phase. They appreciated the advantage of receiving directly at their store vegetables harvested within the last 24 hours, of selected quality and well packed. At present they depend for their vegetable supplies mostly on the wholesalers at the Tegucigalpa wholesale markets. These wholesalers are able to supply a wide variety of products of "acceptable" quality everyday through-out the year. Some supermarkets have also special arrangements with local growers organized by a "captive" wholesaler who has an exclusive right and commitment to supply the store with a predictable (in time and quantity) amount of different vegetables through-out most of the year. These arrangements are usually complementary to the wholesale market source, and rarely amount to more than 30% of the total supermarket vegetables purchases.

All the supermarkets pretty much agreed on the fact that direct farmer sources had always proven unreliable in the past, had been incapable of supplying even moderate quantities of vegetables on a continual base for any length of time, were not organized to produce a variety of vegetables but usually concentrated on one or two products only, and were irresponsive to quality improvement incentives. Their experience had been one of farmers occasionally delivering large quantities of one or two vegetables of mixed quality on a totally unscheduled basis, and with high price expectations. As a result, they could not rely on direct farmers purchases to keep their stores well stocked with vegetables all year around, and preferred to avoid any direct supply dependence on the farmers, and rely instead for their supplies on the dependability of the Tegucigalpa wholesalers. These wholesalers on their part, also preferred to supply supermarkets on a "constant" basis and did not favor occasional "incursions" by direct producers which they viewed as disruptive to their supply schedules. This attitude further discouraged supermarket from encouraging unscheduled deliveries of vegetables directly by the farmers.

Some supermarkets had had some good experience with some farmers' cooperatives which had proven capable of supplying a variety of quality products on a scheduled basis for long periods of time. Unfortunately, for a variety of reasons --perhaps because their chief organizer had departed, or because they had lost access to free transportation for their products, or because of faulty management, or other reasons or combinations thereof-- all of these cooperatives ceased operations after a period of time. Nevertheless, they have left a legacy of good-will that more than compensates for the negative experiences that the supermarkets have had in their past dealings with the vegetable farmers.

The supermarkets require a scheduled delivery of several quality vegetables throughout the entire year --or at least through-out most of it-- by a reliable source. The wholesalers meet most of these requirements although they fell somewhat short on vegetable freshness and quality, and also require from the supermarkets the extra expense and inconvenience of a buyer to go to the wholesale market early in the morning, select and buy the necessary vegetables, and transport those to the store. These constraints on the part of the wholesalers represent the opportunity for our vegetable project.

Great emphasis was given when organizing the farmers in our vegetable project, to the importance of producing several vegetables staggered through-out the year, so that each week an almost constant quantity of vegetables would be made available for direct delivery to the cooperating outlet (or outlets).

The detailed work plan (see appendix 3) which was prepared for each one of the 14 participating farmers was especially oriented to make possible an alternate weekly harvest of several different vegetables which would total for the project an almost constant quantity of production each week through-out the year (between 5,000 and 10,000 lbs. per week). Farmers were advised to stagger the planting of each vegetable by planting the same quantity each month on one quarter of their available land thus making sure that each month a new planting-harvest cycle would start, and a new crop would always be available for harvest.

The 14 vegetable farmers selected for the project were expected to start producing an almost constant flow of six or more vegetables for weekly delivery to the Tegucigalpa cooperating supermarkets beginning sometime in January 1985. The months of October, November and December 1984 were to be used mostly to organize the vegetable plots and start the staggered cycles of vegetables production. Unfortunately, because of poor supervision, the cooperating farmers did not follow carefully the staggered planting schedule proposed in our personalized work plans thus fulfilling only partially the objectives of our project. Furthermore, because of the attractive prices offered by their traditional outlets (feria del sábadó, coyotes, mayoristas, etc.), no products were made available for direct delivery to the Tegucigalpa supermarkets.

Table #4 identifies the quantities of vegetables which are estimated to be produced every 4 months (production cycle) by the farmers cooperating with the project. So far the farmers have preferred to sell all of this production to their traditional outlets.

TABLE #4

ESTIMATED 1985 VEGETABLE PRODUCTION BY PROJECT AREA PER FULL CYCLE (4 MONTHS AVERAGE) OF PRODUCTION

	Estimated Yield (c) Lbs/Mz.	GUACERIQUE		TATUMBLA		JUTIAPA		RIO CHIQUITO		ROUNDED TOTAL		Estimated (d) Weekly Sales to Supermarkets Lbs.
		Area	Quantity	Area	Quantity	Area	Quantity	Area	Quantity	Area	Quantity Harvested	
a Cabbage	40,000	3/4	30,000	1	40,000	1/2	20,000	X	X	2 1/4	90,000	1,800
b Tomatoes	40,000	X	X	1 1/16	42,500	1/16	2,500	1/32	1,250	1 5/32	46,000	920
c Carrots	35,000	X	X	1/4	8,750	2 1/2	87,500	3/8	13,125	3 1/8	109,000	2,180
d Potatoes	15,000	X	X	1	15,000	X	X	5/32	2,344	1 5/32	17,000	340
e Onions	25,000	X	X	9/16	14,062	5/16	7,812	1/8	3,125	1	25,000	500
f Green Peppers	25,000	1/8	3,125	3/16	4,687	1/2	12,500	9/32	7,031	1 3/32	27,000	540
g String Beans	15,000	X	X	1/2	7,500	X	X	1/32	469	17/32	8,000	160
h Lettuce	20,000	X	X	1/4	5,000	9/16	11,250	X	X	13/16	16,000	320
i Beets	25,000	X	X	1/4	6,250	1/4	6,250	5/16	7,812	13/16	20,000	400
j Couliflor	50,000	1/8	6,250	X	X	1/2	25,000	1/16	3,125	11/16	34,000	680
k Broccoli	30,000	1/16	1,875	X	X	X	X	1/16	1,875	1/8	4,000	80
l Others	9,000 ^a	1/16 ^a	562	1/16	562	X	X	1/16	562	3/16	2,000	20
m Totals		1+1/8	42,000	5+1/8	144,000	5 3/16	173,000	1 1/2	41,000	12 15/16	400,000	8,000

(a) Garlic; (b) radishes; (c) Based on low Italian yield further reduced by 1/3; "Manuale del"Agronomo" Tassinari. Dec. 197 These yield estimates have been partly confirmed by undocumented field findings: 45000 lbs. of cabbage per manzana (in Santa Lucia); 30,000 lbs of carrots per manzana (in Jutiapa); 17,000 lbs/mz to 34,000 lbs/mz for cabbage, 10,000 lbs/mz to 23,000 lbs/mz for carrots, 15,000 lbs/mz for onions, 10,000 lbs/mz for peppers, 24,000 lbs/mz for lettuce, 8,000 lbs/mz for radishes, 24,000 lbs/mz for couliflower, 11,000 lbs/mz for beets (in Tatumbra, mostly based on projection of one crop on 1/8 of a manzana in 1983-1984). (d) Based on assumption that only about 1/3 of the total harvest produced in a full production cycle (4 months) is made available for sale to the Tegucigalpa supermarkets. (Other 2/3 will be sold directly by farmers themselves through their traditional outlets). This amount is then averaged out in the 17 weeks making up a production cycle of 4 months, giving a weekly average delivery to the supermarkets of 1/51 of the total harvest for a full production cycle, or about 2% of the total.

Some of the farmers in our more recent interviews (January 1985) have re-confirmed their desire to sell part of their crop --on an experimental basis-- directly through the Tegucigalpa supermarkets and are willing to accept the price constraints --some favorable, some maybe, not -- that this type of sale would impose on them.

The traditional outlets which most farmers are now using, such as the "coyotes" and the Feria del Sábado, allow for an immediate knowledge of the sale price for their product, since the transactions are conducted on the spot between the farmers and the buyers. On the other hand sales to supermarkets can take several days to be completed and because of lack of immediate communications (telephone or other), they are particularly vulnerable to vegetable price fluctuations.

A farmer in fact, informs us that a particular crops of vegetables will be ready for harvest and sale some 5 to 10 days ahead of time. We, then, contact a supermarket; it accepts the sale and establishes a delivery day and time; we inform the farmer who in this turn, makes the necessary arrangements to complete the delivery as required. Because of the 5-10 day time-lapse there is no firm established price which can either be demanded or offered for the new vegetable harvest. While a speculator or a wholesaler might be willing and/or equipped to risk a price offer, neither the farmer nor the supermarkets have the capability to negotiate a mutually acceptable price because of the excessive time and travel cost that the absence of telephone communications would impose on their negotiations. As a result, the project has worked out a tentative agreement between the farmers and the supermarkets which tries to resolve this pricing/communication problem by assuming that supermarkets are mostly interested in "selling" vegetables and not in "speculating" on vegetables price variations; and that the farmers are mostly interested in selling their crop in the shortest possible time at the best possible existing price, and are not interested in especulating on vegetable price by withholding production and other price manipulation techniques.

Therefore, after protracted discussions with the farmers and the supermarkets, it was tentatively agreed, and on an experimental basis only, to use the "Feria del Sábado" vegetable prices as "indicative" of the prices at which vegetables should be refiled during the next week; yet allow the supermarkets to adjust these prices upward or downward as the consumers' demand would justify --either because of increased or decreased supplies; or because of the appearance or disappearance of competing products; etc.-- The farmers would be getting in cash, upon delivery of the product and for the entire consignment which the supermarket had accepted --the supermarket retained the full right to reject all products it deemed unacceptable because of low quality --70 to 75% of the total retail price that the supermarket was planning to charge its customers for the vegetable accepted for delivery. The supermarket would keep the other 25-30% to cover its operating costs, its vegetable waste rejects costs, its advertising costs and its profits.

This pricing structure would, of course, be re-negotiated whenever either party felt that its share deserved to be increased either because its costs had been underestimated or because the quality of the product delivered had been constantly better or worse than projected, significantly effecting the amounts of vegetables that would be wasted or rejected by the customers.

It is unfortunate that, up till now, we have not been able to experiment with the feasibility of this formula since all of the farmers' production has been sold through the traditional channels. Yet we are still confident that we may be able to try it on the new crops which will be coming due next February and March.

5. Selection of supermarkets

Starting the middle of May 1984 the managements of several supermarkets were interviewed to determine their receptiveness to accepting vegetables directly from the farmers, the conditions which they felt had to be met to satisfy the supermarkets' requirements as per variety of vegetables, quality, quantities, delivery schedules, pricing, etc., and their comments, suggestions and recommendations for the conduct of the vegetable project.

We investigated the following supermarkets :

- a) BANASUPRO. This chain of small supermarkets specializes in canned and dry goods, and popular consumer items with long shelf-life and fixed prices. Some of the stores also carry a line of fresh frozen fish and meats, for which they received a heavy contribution in refrigeration equipment from the government. Very few stores sell any fresh vegetables at all. This chain of food stores is supported by the government to serve indirectly as a consumer prices moderator for items of wide popular appeal. BANASUPRO runs some 119 stores nationwide; and 33 around and including Tegucigalpa (24 in Tegucigalpa, alone). These 33 stores, in 1982 averaged sales of 1.4 million lempiras per month; in 1983 they averaged 1.6 and in 1984 averaged about 3 million per month. BANASUPRO employs some 3 to 4 people per store. In 1977 they sold vegetables for some 2,500 to 3,000 lempiras per day per store. This practice was discontinued probably because their centralized accounting system was unable to handle vegetables sales (source: Interview with Lic. Pedro Cubas Sandoval, Jefe de Comercialización y Ventas, 18 May 1984) and because their heavily capitalized system for marketing vegetables could not control quality or timely deliveries (Sources: Marco A. Raudales, Jefe Departamento Ventas, 29 August 1984).
- BANASUPRO did not seem ready to enter into an informal arrangement with our project to sell our farmer's vegetables, probably because their accounting system requires a rather rigid price structure which would not fit the volatile characteristics of the fresh vegetable market in Tegucigalpa. Anyway, we visited some 15 of their stores and determined that while some 2 or 3 might have had enough space to sell and store vegetables, most of them already fully utilized their space with their current product lines. In the future, especially since BANASUPRO plans to expand some of its stores into completely equipped supermarkets and even add new ones, it may be feasible to review our contacts with BANASUPRO to explore whether some cooperation between themselves and our project may not be of mutual advantage. In the meantime it was decided not to use BANASUPRO stores to sell our vegetables.
- b) Su Casa. This supermarket is one of the largest and best equipped in Tegucigalpa and carries a rather complete and full line of supermarkets products. Their sales of food, fruits and vegetables have been expanding during the last few years: in 1982 they sold some 630,000 lempiras worth of fruits & vegetables;

in 1983 this amount increased to 950,000; in 1984 it is expected to pass the 1.5 million mark (380,000 lempiras were sold in the first 4 months of 1984, which include most of the dry season when fruit & vegetable production is slow). About 30% of the sales were made up of fresh fruit; the balance 70% was made up of vegetables (mostly potatoes, carrots, heads of lettuce, onions, yuca, cabbages and tomatoes). The management of the supermarket believes that the fresh fruit and vegetable market is far from saturated and could easily be expanded quite considerably by increasing product and variety availability through-out the year, by improving product quality and presentation, and by stabilizing prices. Price stabilization was seen more as a convenience for the client, the store and the supplier and as a way to stabilize products' preferences, then as an incentive to increase sales. The managers, in fact, felt --as did the managers of the other supermarkets we visited-- that price resistance to fruits and vegetables was minimal and reflected mostly customers' rejection of low quality or damaged goods; high quality fruits and vegetables easily commanded a premium price and were always in short supply. Su Casa employs a "captive" wholesale to supply almost 25% of its daily vegetables requirements. This captive wholesaler (Lic. Luis Aguilar, a former professor of philosophy turned agronomist/entrepreneur) supplies some 2,000 lbs of vegetables a day to Su Casa supermarket (their daily sales average over 8,000 lbs) and oversees the supermarket vegetable and fruits sales. He is able to keep up an almost constant delivery of 2,000 lbs of mixed vegetables a day, by controlling a group of some 40 farmers mostly located near Santa Lucía, and producing together with them, on a 50-50 basis, several vegetable crops opportunely staggered through-out the entire year. For example he is currently (July 84) planning to plant some 20 m² in cabbages staggered through-out the year and expects to get some 45,000 lbs of cabbages per m². Mr. Aguilar supplies the farmers with all their seeds, fertilizers, pesticides and other agricultural inputs; furthermore, when required he makes loans for land rentals and improvements and supplies the farmers with agricultural implements and food for their families. On their part, the farmers supply their labor and abide to Mr. Aguilar product and production schedules, and follow carefully his agricultural practices and instructions. Mr. Aguilar was very interested in our project and willing to cooperate with us; he warned us that farmers in general are very difficult to "educate"

especially in the new agricultural practices required by our project, and that our farmers would be very slow in accepting the constant work discipline necessary to implement our project's plans. But assured us that with the proper supervision and financing our project's objectives could be achieved as he himself had been able to achieve his own --after several years hard work-- in a project not too different from our vegetable project.

We also visited the shipment department of Su Casa responsible for moving in an average of 8,000 lbs of fruits and vegetables a day, and moving out some 1,500 lbs of rejects each day. The damage for products while in transit is very high. We observed a high rate (about 20%) of damaged peppers in a shipment which had just arrived. These peppers while originally of high quality, had been severely bruised and squashed while in transport, partly because they had been packed in "nets", and partly because they had been improperly loaded on their truck. This type of waste will have to be avoided through better packing, thus sparing the farmers and the store useless losses.

Large quantities of vegetables because of poor handling by the store and/or the public, are rejected by the buyers and remain unsold past their useful shelf-life. In the case of Su Casa an estimated 1,500 lbs of vegetables and fruits are thrown away (as garbage and/or as animal feed) daily: almost 20% of Su Casa's daily average deliveries (8,000 lbs per day). This loss could be significantly reduced by improving the freshness and the quality of the vegetables being delivered, reducing mishandling and storage within the store, and making it unnecessary for the buying public to individually select --and handle-- each vegetable they buy.

The management of Su Casa (Mr. Eduardo Mahomar) has agreed to cooperate, on a tentative basis, with the experimental phase of our project, and to accept scheduled deliveries for a variety of our vegetables. He has agreed, on principle, to our proposed price format for store-delivered vegetables --70-75% of the retail price to the farmer; 25-30% to the store--; and to the fact that this format would need to be renegotiated up-wards or downwards after a while, when sufficient data would have been collected to justify a new price structure.

This price structure implies on the farmers' part the obligation to deliver quality vegetables at the appointed time, at the store premises; on the store's

part the right to reject upon delivery any vegetables judged to be of inferior quality or damaged in transit; and implies cash payment on delivery for the vegetables accepted, with no returns privileges for the store for any vegetables, once they had been accepted for delivery.

Unfortunately to this date we haven't been able to test our tentative agreement with Su Casa. Our farmers while apparently able to meet with most of the production schedules necessary for the implementation of our temporary agreement with Su Casa, have not been able and/or willing to reserve 1/3 of their production for direct marketing to the Tegucigalpa supermarkets, and have disposed of their total vegetable production through their traditional marketing channels (coyotes, mayoristas, ferias, etc.). As a result we have been unable to start delivering --either on a scheduled or an unscheduled basis-- any vegetables to the Su Casa Supermarkets.

- C. Selecto. Is a small supermarmarket run directly by its owners (Mr. Giovanni Fermino). The store specializes in "quality" vegetables and sells about 1.000 lempiras of vegetables per week. Their distribution by weight was estimated by the owner to be as follows: 30% potatoes, 15% onions, 13% tomatoes, 8% stringbeans, 5% carrots, 5% lettuce, 5% cabbage, 3.5 %pepper and about 1% each pataste, cucumber, zapallo, garlic, culantro, and the balance, 10.5%, other vegetables. The owner declared himself very willing to cooperate with the project and offered between 65% and 75% of the retail price he would receive for the vegetables sold, as the amount he would be willing to pay to the farmers. The payment would be in cash for the total amount of vegetables accepted for delivery, and the percentage of the retail price (between 65% and 75%) paid for them would be lower or higher depending on the quality of the vegetables at the time of delivery. This supermarket would be a particularly good outlet for our project's vegetables in the event that our farmers were able to deliver only a small percentage of the amount of vegetable they had originally committed themselves to.
- D. The Plaza Miraflores supermarkets is one of the largest and most modern in Tegucigalpa. They sell about 2.000 lempiras of vegetables per day and were in the process of improving and expanding their vegetable counters; they expect their sales to increase substantially during the year. In the past they have sold very succesfully quality vegetables produced for export which, because of temporary surpluses at Puer-

to Cortés, were made available to their store. They experienced the same ease of sale with the quality vegetables which were supplied to them by the American firm FOOD PRO. As a result they are quite ready to start purchasing "quality" vegetables from our project as soon as we are able to deliver; they need only one day notice to accept our delivery, in order to avoid purchasing the same vegetables at the Tegucigalpa wholesale market. Ing. Gino Tentori, their Gerente General agreed tentatively to cooperate with our project and to accept our sales terms of 25%-30% for the store and 70% to 75% for the farmer; cash on delivery (see Section 5b, Su Casa's terms of sale). These terms, naturally, would be re-negotiated after a while when enough data and experience would be accumulated to confirm the constant high quality of our products, the reliability of our deliveries and the full acceptance of our products by the Miraflores customers.

E) Mas X Menos . Is one of the largest supermarkets in Tegucigalpa with a very active vegetable buyer (Sra. Dolores Pineda) who, in order to get fresh vegetables, is willing to send her trucks directly to the farm site. Her store sells about 1,000 lempiras of vegetables per day and she appeared eager to participate in the experimental phase of our project. During our first visit (30 Aug) she appeared willing to accept our tentative sales terms of 25-30% (see Section 5 b, Su Casa's terms of sale); but on a later visit (14 Nov) she showed a strong preference for negotiating prices at delivery time, without any preconditioned relationships to the products' future retail prices.

We are reserving this store for bulk sales of large single harvests, and other similar off-schedule vegetable production problems, when negotiated prices might be a better solution for untypical production situations.

F) Prisa . Is a large supermarket which is quite eager to improve and enlarge its vegetable sales. The manager, Mr. Jose Luis Gaido P., told us they average sales of about 5,000 lempiras of vegetables per week thus distributed: 1,800 lbs of tomatoes, 800 lbs of cabbage, 3,500 lbs of potato, 400 lbs of carrots, 700 lbs of lettuce, 1,000 - 1,500 units of peppers, 100 small bags of string beans, 600 lbs of onions, 200 lbs of cauliflower, 6 dozens of broccoli and other miscellaneous products for a weekly total of about 10,000 lbs.

They had a very good experience in selling vegetables for a farm cooperative project very similar to ours which was organized and run by a British group. The manager did not have any other information on this groups besides the fact that --while they lasted-- they supplied quality vegetables regularly and dependably, and the store was quite willing to continue the relationship. Unfortunately, the British (or Britishers) managing the project "dropped out" suddenly and the whole initiative folded.

The manager is quite interested in our project and willing to accept --at least on a tentative basis till more cost data are accumulated-- the 25%-75% price structure proposed by our project (see section 5 b, Su Casa's terms of sale). It is up to us, now to make some vegetables available for sale.

TABLE #5

ESTIMATED WEEKLY VEGETABLE SALES BY PRINCIPAL SUPERMARKETS
IN TEGUCIGALPA

NAME OF SUPER MARKET	ESTIMATED WEEKLY VEGETABLE SALES.			SALES TERMS
	Lbs/Wk	Lempiras/Wk	Yr.	25%-75%
a BANASUPRO		(17,000)	(1977)	NO
b Su Casa		22,000	1984	YES
c Selecto		1,000	1984	YES
d Miraflores		12,000	1984	YES
e Mas X Menos		6,000	1984	YES
f Prisa	10,000	5,000	1984	YES
g TOTAL		46,000	1984	-

* BANASUPRO 1977 vegetable sales are not included in 1984 total.

Table #5 summarizes the weekly vegetable sales which were experienced by the principal supermarkets during the first 4-5 months of 1984. The figures for Banasupro are for 1977 and are not included in the 1984 estimates. It must be noted that these weekly sales represent a "low" average for the year as a whole since they include the "dry"

season of the year when vegetable production is lower than normal; furthermore they do not include the vegetable sales of other major supermarkets (La Colonia and some 7 municipal markets and several stores that sell vegetables only occasionally). If we use Prisa's weight figures (5,000 lempiras sales per week approximated a total weight of 10,000 lbs or 2 lbs per lempira) we can extrapolate the total weight of the supermarkets sales at over 90,000 lbs of vegetables per week, or over 10 times the estimated 8,000 lbs per week sales projected for our farmers' vegetable project (see table #4). As a result it is not expected that the vegetable sales projected for our project --at least during its experimental phase-- will have any significant effect on the purchasing and/or pricing patterns of the cooperating Tegucigalpa supermarkets.

6. Quality Control.

Serious efforts were undertaken to improve agricultural practices for growing vegetables, through direct demonstrations at the farm site and through the preparation of individualized work plans for each one of the 14 farmers cooperating with the vegetable project.

Special recommendations were given on the type of inputs to be used --seeds, pesticides, fungicides, fertilizers-- how to use them, and when, in order to reflect both local climatic soil conditions and good handling characteristics. Unfortunately, unreliability of supplies, high costs and limited available financing, caused many farmers to purchase lower quality products and, occasionally, even to change the type of vegetable they were planning to plant. This problem was particularly acute in the case of potato seeds where both the high costs (over 800 lempiras worth of seeds per manzanas) and their unavailability at the planting time (because the seed division of Recursos Naturales was not able to make good on its scheduled deliveries to our agent) required last minute changes in the planting plans of the affected farmers.

Farmers were also made aware of the importance of proper packing to protect the quality of their products while in transit (especially pepper, broccoli, lettuce and other vegetables easily damaged if packaged in the "nets" usually used by local shippers); and of the importance of carefully selecting quality goods when shipping directly to the Tegucigalpa supermarkets, in order to insure high acceptance of their

products, low rejection rates, and, in the long run, premium prices for their products. Rejection rates for most vegetables seem to approximate about 20% of the original shipment --based on our evaluation of incomplete data furnished to us by the Tegucigalpa supermarkets cooperating with the project--thus adding unnecessarily to the cost of transportation and to the cost of selling these vegetables. Furthermore, most supermarkets agreed that vegetables of mixed quality --i.e. with a high rate of damaged products--meet with customers' buying resistance and, because of the excessive handling by customers anxious to avoid buying damaged goods, experience a shorter-than-average shelf-life; quality goods on the other hand, are sold easily, quickly and with relatively little handling by distrusting customers, and reflect in a positive way on the store's good image.

Our farmers seem to understand and appreciate the quality requirements of the Tegucigalpa supermarkets; and seemed willing to comply with the quality control practices recommended by the project. As soon as deliveries of vegetables to the supermarkets will have begun, we will be in the condition to evaluate the effectiveness of this quality control component of the project.

7. Packing

Currently, most vegetables are packed for transport in a large net; they are then loaded in a truck without giving enough attention to which ~~net~~ package is left at the bottom and which at the top. The vegetables are then unloaded at their destination: a wholesale market, a warehouse, a supermarket, a feria, etc. Usually the soft vegetables (i.e. broccoli, peppers, lettuce, etc.) arrive in damaged conditions. We observed a rate of almost 1 damaged for each 5 delivered, in a load of peppers being unloaded at Su Casa Supermarket (our visit of 11 July 85); from our interviews we understand that this rates is not atypical. ~~Only~~ tomatoes are usually packed in wooden boxes; the other vegetables seem to be transported mostly while packed in nets.

The advantage of nets over boxes --besides the fact that they are widely available, fully accepted, and quite inexpensive on a cost per net versus volume of load ratio -- is that they occupy very little space when not in use, weight very little, and last a long time. Boxes, on the other hand, take up the same space ~~either~~ when filled with cargo or ^{when} empty on their return trip --unless of a special design--, weight very much

when compared to the total load they can carry, and have a relatively short life (7 to 10 trips as an average). While the decision of selecting which containers to use to transport vegetables in their trucks remains the responsibility of the trucks, nets will be the natural and logical choice: they are cheap, durable and uncombersome. When the decision will become the responsibility of the producers, then appropriate boxes will become the logical choice. At that time a

greater portion of the ^{farmers'} product will reach the market in the best conditions to command a full price, without the usual semi-hidden discounts needed to protect the buyer from the expected high rate of damaged products and rejects.

It was quite easy to convince the farmers of the theoretical necessity to improve their packing practices. They are already doing it with tomatoes; and are not doing it with other vegetables mostly because of the unavailability of boxes of appropriate design, their fear of possible high cost, and the lack of encouragement on the parts of the carriers. The project has already proposed a design, based on international standards, for a multi-purpose vegetable box (see appendix 4) and we have contacted several furniture manufacturers and saw mills in the Tegucigalpa area to obtain quotes on their probable cost, for a limited quantity (about 100 boxes) to be used during the experimental phase of the vegetable project. None of the several establishments visited has been able to give a satisfactory answer. Table #6 tabulates the different answer we have received so far.

TABLE #6
ESTIMATED UNIT COST OF MULTI-PURPOSE VEGETABLE BOX

	Estimated Cost	Comments
1 Fosforera Centro América, S.A.	3.50	Could be flattened, short life .
2 Tobar Corp	-	Unequipped to produce packing boxes
3 Derinasa	-	Interested; but never replied
4 Recursos Hídricos*	1.50	Their cost for the tomatoes box

* Price they contracted for the "tomatoes" box.

The survey is continuing and we expect to get an acceptable quote, in time to service the farmers who will deliver the portion of their crop allocated to the project.

8. Truck Farming

One of the mayor causes of vegetables' quality deterioration is the way they are currently collected and distributed for final consumption. Usually vegetables are tightly packed in large nets and left by the road side to be picked by a local carrier. These carrier load up the vegetables on their trucks in order of arrival, paying little attention whether the package-nets contain soft vegetables such as peppers, couliflower, lettuce, etc. or hard ones such as cabbages, potatoes, carrots, etc., and put them on top of one another indiscriminately, only paying attention to the efficient use of the cargo space in their trucks. The vegetables are then unloaded at some wholesaler's warehouse to wait from one to several days to be purchased by local retailers and/or institutional buyers. We have observed cases where soft vegetables have arrived at retail stores with 20% damaged rates; others where they looked "old" when unloaded at the retail store; etc.

Most of the retailers we spoke to confirmed our observations and complained about the poor quality and lack of freshness of the vegetables they had to accept on many occasions, in order to keep their stores' shelves supplied with vegetables everyday of the week. Retailers on their turn, go to the wholesaler's market very early in the morning to buy their fresh supply of vegetables for the next few days. They, then, store the purchased vegetables in their own warehouses --some have refrigerated ones-- and release them for presentation and sale on their store's shelves on a "Fifo" base (first in first out) thus forcing on their customers each day the "oldest" vegetables they have in the store. This distribution-caused ageing of their vegetables is often further aggravated by the fact that the wholesaler may himself be enforcing a FIFO system of sale, and might himself be trying to push a low-moving vegetable which has already lost most of its freshness.

For this combination of reasons and to save themselves the inconvenience and the cost to go almost daily, very early on the morning, to the wholesaler's markets, many of the larger supermarkets try to circumvent the system and purchase their

vegetables from "captive" wholesalers who supply them with fresh vegetables directly from the field on a scheduled basis. These captive wholesalers are usually truckers-growers who work directly, usually only with one supermarket, and on a contract basis. In this contract they commit themselves to supplying a stated quantity of mixed vegetables on a periodical basis (usually 2 or 3 times a week) for a long period of time (a season, a year or even longer). The financial terms of these arrangements are not too clear. At times, these captive wholesalers seem also to be, concurrently, full-time employees --or partners?-- of the very supermarket they are supplying as wholesalers. The captive wholesalers get their products with a mix of different systems: some participate directly in the financing and in the over-seeing of the growing of the vegetables they plan to sell; they supply their farmers "associates" with all the inputs necessary to grow the vegetables, with some financing, and with expert supervision and horticultural advice; they then share in a pre-set proportion the revenue they get from the sale of the vegetables. Some other captive wholesalers seem to favor the early purchase of selected vegetable crops while they are still in the growing stage, and thus assure themselves the right mix of products and "maturation" dates. Some others may use other systems which we were not able to investigate; or even combinations of the above. Anyway, our findings could not be rigorously controlled; they were based mostly on conjectures and casual conversations; and should be used only as an indication of the variety and sophistication of commercial arrangements that the supermarkets seem able and willing to organize to get fresh and good quality vegetables. In a situation such as the one described, individual farmers have very little chance to succeed; and the few who have tried have usually limited themselves to a one-shot only operation, where they sold their seasonal one or two crops, never to return to the supermarket again. For this reason supermarkets, which themselves would basically prefer to purchase fresh vegetables "on a continual basis" directly from the producers, have spurned the irregular and sporadic offers of products by isolated farmers.

Yet; organized farmers who are able to offer a variety of fresh vegetables of good quality on a continual basis, would enjoy a highly competitive position with the supermarkets and would meet with prompt, if skeptical consideration.

The principal objective of this project has been, indeed, to educate and organize such a group of farmers; Furthermore, the control of their transportation system to make possible a timely and carefully-transported delivery of fresh, quality vegetables,

has been one of the mayor preoccupation of the project.

Other sections of this paper have discussed the selection of the farmers; the preparation of the production scheduled to assure timeliness, variety and quality in the production of vegetables; and the selection of the cooperating supermarkets. This section has focused on the importance of controlling transportation to preserve the quality and the freshness of the product to be delivered to the stores.

The farmers have been convinced of this necessity; and each one of the four groups participating in the project (see Table #3) has made the necessary arrangements to have access to a small truck to make themselves the personal deliveries of their vegetables to the appropriate Tegucigalpa supermarkets. It is premature at this time to predict how well the arrangement will work, and for how long. But, in time it is hoped, that the farmers will be fully in the condition to be able themselves to deal directly with the stores in Tegucigalpa, and to be able to supply them on a continuous basis with a variety of fresh quality vegetables, transported in their own trucks, according to a well-established schedule. These truck farmers will then become independent from middlemen, wholesalers, and "coyotes", and the supermarkets and the public will benefit with lower priced, abundant, fresh, quality vegetables.

C. CONCLUSIONS .

1. 4 UOC's have been included in the project and their field personnel fully indoctrinated in the objectives of the project.
2. The UOC field personnel has successfully lead the selection for the participants, and for the plots of land set aside for the project.
3. 14 farmers have been selected and indoctrinated.
4. 13 manzanas of irrigable land have been set asile for project use (with allocation of 1/3 of their production).
5. Some 12 vegetables crops are under cultivation with a total production per planting cycle (4 months) projected at 400,000 lbs or about 24,000 lbs "average" per week.
6. 8,000 lbs of mixed vegetables per week or one third of the participating farmers total projected average weekly crop (24,000 lbs) is a sufficient amount of vegetable to deliver to the Tegucigalpa cooperating supermarkets, under their terms proposed for the experimental phase of the project.
7. Production staggering through-out the year, proposed in the projects individualized farmer' work plans, has been only partly completed and needs further support by our field operators.
8. The UOC field personnel were not given clear enough instructions from our H.Q or were not sufficiently qualified to supervise and counsel effectively the farmers in their localities when they started producing vegetables according to the project's individualized work plans.
9. 4 Tegucigalpa supermarkets with a total weekly vegetable sale estimated at 40,000 lbs, have accepted to cooperate with the project.
10. Regular harvesting of vegetables and deliveries to the cooperating supermarkets are expected to begin in ~~February~~^{March} 1985.

11. Quality control measures while understood by the farmers are not being applied yet because of lack of support from our UOC field operators, and because no crops have yet been delivered for sale to the supermarkets.
12. Special general purpose boxes for the packing of soft vegetables (peppers, couliflower, tomatoes, lettuce, etc.) have been designed.
13. Quotes for the construction of the general purpose vegetable packing box are still being solicited from local box manufactures. 5 manufacturers have already been contacted. 2 quotes have been received; other are being expected.
14. Most farmers seemed to have direct access to a small truck to eventually transport their vegetables to the Tegucigalpa supermarkets; the others were confident that they could get transportation. Interviews with local people and/or our UOCs operatives confirmed the local availability of transportation to Tegucigalpa.

D. RECOMENDATIONS.

1. Formalize the participation of our UOC's agronomist in the Vegetable Project.
 - a. Officially inform them that they are to participate in the Project.
 - b. Require that they include their planned activities on the vegetable Project, in their work plans.
 - c. Require they prepare monthly reports on their own activities for the Vegetable Project, and on the activities of the 2 or 3 farmers in their UOC who are participating in the Project.
 - d. Assign to each one of them the responsibility to collect and verify the following data from the 2 or 3 farmers in their community who are participating in the Vegetable Project: area each one has planted for the Project; products planted and dates; actual quantities; costs and brands of inputs used; quantities and dates of harvest; prices received (including date of sale and quantities) for vegetables sold to each differente out-let (supermarkets, ferias, wholesalers, etc.).
2. Give specific instructions to our UOC's agronomists on how to supervise an counsel the 2 or 3 farmer in their community who are members of the Vegetable Project.
 - a. Weekly visit to each one of the participating farmers to verify whether they are following the individualized work plan which was prepared for each one of them; to counsel them how to keep on schedule; to help them solve daily production problems; to alert our horticulture specialist in the event of serious problems; to collect production and sales data.
 - b. Monitor the planting, growing and harvesting of the vegetable crops of the cooperating farmers; alert our management of any substantial changes in cultivated areas, type of vegetables grown, sizes and

schedulings of harvests; and changes in attitudes on the part of our member farmers.

- c. Request the agronomist's comments and suggestions on the implementation and performance of the project in their own area.
3. Prepare a new individualized work schedule for each one of the 14 farmers members of the Vegetable Project to cover the period March-June 1985 (and later periods, when appropriate).
 - a. Simplify the original work plan to allow in the future more latitude to the farmer and the local UOC agronomist.
 - b. Support the farmer in their procurement of quality inputs necessary to implement their work plan.
 - c. When required support the farmer in the preparation of loan requests if necessary to support the implementation of their work plan.
 - d. Reinforce, on a continuing basis, the farmer's awareness of scheduling control and its implications over their vegetable production cycles.
 4. Oversee scheduled deliveries of vegetables to selected supermarkets.
 - a. Appoint an H.Q. staff member, possibly the staff agronomist/horticulturist as the manager of all the Vegetable Project's activities. Specifically, make him responsible to oversee that the UOC field agronomist conform to their obligations to the Vegetable Project; that all problems which may arise during the implementation of the Project are taken care of; that vegetables deliveries to the cooperating supermarkets are properly negotiated and executed; that the cooperating supermarkets faithfully abide to their agreements; that all correspondence, reports and inquiries about the project are routed through his office and, in general, that all other project activities not specifically assigned to farmers and/or UOCs' agronomist be executed directly by himself or assigned to appropriate party.

- b. UOC agronomist will inform when crops are ready for sale: by whom, what quantities, what quality, duration of harvest.
 - c. Manager of Vegetable Project will then contact supermarkets; establish time of delivery, inform UOC agronomist and supervise first delivery.
 - d. UOC agronomist will inform farmers who will make delivery at appointed time; receive full payment; and negotiate (with assistance from Vegetable Project Manager) directly with supermarket, more deliveries of same harvest and possibly, delivery and sale of future harvests.
 - e. When required, manager of Vegetable Project, will counsel supermarkets on warehousing, displaying and sale of vegetable products.
 - f. Manager of Vegetable Project will negotiate with cooperating supermarkets long-term policy of cooperation between the Project and the supermarket, and periodical re-adjustment of vegetable price structure to reflect improvements in product quality and customers' acceptance.
5. Improve quality of vegetable delivered to supermarkets.
- a. Accept for delivery only the best third of the total vegetable crop. The other 2/3 are to be disposed through the traditional outlets (ferrias, mayoristas, etc.) and/or consumed by family.
 - b. Make available to farmers low-cost, all purpose wooden packing boxes to ship their "soft" vegetables (peppers, broccoli, tomatoes, lettuce, etc.).
 - c. Negotiate with local manufacturer production of 100 all-purpose wooden packing boxes to be used during experimental phase of Vegetable Project.
 - d. Complete design of appropriate all-purpose soft vegetable wooden packing box and select qualified manufactures to build them.
 - e. Obtain grant and/or loan-fund to finance construction and distribution of 100 packing boxes for experimental phase of Project. Future boxes will be procured and sold through normal commercial markets. But will abide to specifications developed and improved during experimental phase.

- f. Oversee procurement and quality of inputs used by farmers participating in Vegetable Project; intervene with loans and/or bulk purchases whenever deterioration of inputs can affect future quality of vegetable production.
 - g. Monitor introduction of new types of vegetables and/or vegetable growing practices and/or inputs in the Cabeceras region by all sources; evaluate them; pass on eventual improvements to UOCs' agronomist.
6. Familiarize other institutions, general public and farmers with objectives and accomplishments of Vegetable Project.
- a. Release reports on project, and data developed by project, to appropriate institutions and information outlets, on a periodical basis.
 - b. Prepare "filminas" on selected aspects of project's activities: production practices; commercialization of vegetable production; preparation and food value of vegetables; etc.; and distribute and use where appropriate.
 - c. Give talks to appropriate groups.



PROYECTO
DE MANEJO
DE RECURSOS
NATURALES

M E M O R A N D U M

TO: PAUL DULIN, COP, CHEMONICS/Honduras

FROM: GUY C. DE MORSELLA, POLICY AND PLANNING SPEC. *GH*

SUBJECT: ANALYSIS OF ACTIVITIES (MARCH TO DECEMBER 1984)
OF INSTITUTIONAL POLICIES AND VEGETABLE MARKETING
SECTION.

REFERENCE: YOUR REQUEST AT OUR MEETING OF 4 JANUARY 1984

DATE: 9 DECEMBER 1984

Institutional Policies

It must be emphasized that the following comments are relevant principally to the institutional policies component of the Project, and might be of limited use in the event that this component is seriously modified or that the long-term commitment of the Project is disregarded.

About one month after my arrival in Honduras it was decided to delay implementation of the institutional policies component of the Project, (see my Memorandum to Dulin dated 27 April 1984). Palliative activities involving lower level institutional cooperation within sub-regional locations were suggested which would have had only a minor impact -- if any -- on the Project as a whole and, especially, on its institutional component; (see page 3 of my Memorandum to Dulin dated 5 December 1984)

Sometime in October the Institutional Policies activity was reactivated in a slightly modified form, (see my Memorandum to Rivas dated 15 November 1984) and, as a result a document was prepared, the "Metodología para la Evaluación de Beneficios y para la Atribución de Costos entre los Beneficiarios del Proyecto Manejo de la Cuenca del Río Choluteca (October 1984)", and the activity was re-proposed for the 1985 Project Work-plan.

One of the few positive results contributed by the Institutional Policies activity was the awareness it created of the powerful implications which any policies' modifications would have on the current balance of power amongst the various ministries of the government. It may become necessary either to re-focus the Project's objectives

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and limit them mostly to engineering conservation inputs, or to transform the Project into a service organization accessible to all Ministries, or to re-absorb the Project completely within the Ministry of Natural Resources as a full-fledged division with long-term and permanent objectives, or to identify some other solution which will justify and formalize the permanency of the Project while at the same time be conducive to intra-ministerial cooperation.

Other major obstacles to the implementation of the institutional policies component of the Project were the difficulty of obtaining sufficiently detailed reports on the activities and programs of the other institutions/ministries active in the Choluteca Watershed; the inability of our sectorial experts to quantify the long-term impact their activities would be having on the Project; and the absence of a detailed Project budget.

Formal requests were sent to each one of the several institutions/ministries active in the Choluteca Watershed asking for their 1983 annual reports. Only the Ministry of Natural Resources was able to make available a report both for the appropriate year, and with sufficient details to make possible the identification of the major components of its projects. The other institutions/ministries were only able to make available either reports of earlier years or reports with insufficient details to make possible the identification of the major components of their projects. Furthermore, cross-checking with CONSUPLAN (National Council for Economic Planning) indicated occasional discrepancies in the data collected, and lack of records on some of the existing projects.

Several meetings were held with each one of the experts responsible for the different sectorial activities of the Project: soil conservation, animal husbandry, social development, forestry and agriculture (fruits and vegetables). A "before and after" technique was proposed based on each expert's evaluation of the circumstances prevailing in his project area before his own activities had been started and, again much later, when his activities would have been concluded and their effect fully reflected in the targeted improvements (in standard of living and/or productivity) of the affected people in his project area. The experts, while willing to cooperate in making the evaluations, did not believe there were sufficient grounds to come up with valid estimates of the incremental values which would have accrued to the affected communities as a result of their own project activities.

It was decided therefore to resort to a "budgetary" approach to estimate the value of these incremental improvements. This approach is based on using the costs of supplying the services required to achieve the targeted improvements in the project area as a measure of their value. The additional advantage of this approach is that the increment in value can be estimated for any time period of the project thus making possible short-term evaluations of the Project's benefits. Unfortunately, the project does not seem to have required

the preparation of a budget detailed enough to identify the cost either of its individual operations or of its major sectorial activities. This serious deficiency will need to be remedied in order to make possible the adoption of a budgetary approach to quantify the stream of benefits originating from our Project and attribute them to specific operations in its different sectorial activities.

Furthermore, there is a need to up date the five-year old USAID Project paper on which our Project is based (see Dulin's Memorandum to de Morsella dated 11 December, 1984) to reflect the major changes in the Project's objectives (for example the downgrading of its engineering content from over 25,000 hectares of land improvement activities to less than 1000) and to make possible the quantifications of the Project's new long-term objectives.

Vegetable Marketing

Partly as a result of the decision to delay the implementation of the institutional policy component of our Project, it was requested that I spent a major portion of my time developing an integrated vegetable marketing activity.

A preliminary proposal was prepared, "Integración Vertical de Mercadeo de las Hortalizas (y frutas)" detailing the inputs required from the UOC officials, the methodology for the selection of the farmers and the cooperative supermarket's, and the objectives of the initiative. While the proposal was given wide distribution, few of its readers had enough time to study it carefully. As a result much repetition and duplication of activities became necessary. Furthermore the **vegetable project never became fully accepted and/or enforced**, especially at the field level, probably because, unofficially it had been accorded a low priority by our own supervision department.

The field agronomists, as a result did not feel compelled to dedicate sufficient time to overseeing the activities of the local farmers who were participating in the vegetable project, even though the local agronomists had participated in all the stages -- both field and headquarters -- of the Project, had themselves been the principal movers in the selection of the farmers and in the verification of their qualifications, and had been supplied with detailed work plans for the activities expected of each one of the farmers in their area. It was estimated that the agronomists would have been required to supply an average of 4 hours of their time each week in order to oversee effectively the activities of the 2 or 3 participating farmers within their jurisdiction.

Field interviews with the participating farmers confirmed that they had received little support from the local UOC official; this fact may have contributed to the farmers' low level of compliance with the detailed work schedule which had been supplied for their vegetable plot.

Practically all the original participants have remained with the Project. Two who had withdrawn have asked to participate again; two others -- a father and his son -- who had joined as separate participants have asked to be counted together as one unit. Unfortunately,

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while the farmers did evidence a great desire to participate in the Project, they never developed an attitude of responsibility and commitment towards its final objectives. Our inability to supply potatoes seeds which we had promised to some of the participants -- who were going to pay for these seeds -- may have also decreased the credibility of our project. (The seed section of our Ministry was not able to make good on his commitment to us).

Some of the farmers have continued with their practice of selling their vegetable crop while still on the field. They justified their action -- and their non-compliance with their own commitments with the Project -- by saying in effect, that the buyer's offer was too good to refuse. Some of the farmers complained that the vegetable seeds they bought at the local store were not very good; that many seeds were very expensive (for example, cabbage seeds sold for 200 lempiras per pound); and were anxious to get some financial help at least towards the purchase of seeds and fertilizers.

We have noticed also a reluctance on the part of the farmers to accept the work discipline required to follow the detailed work schedule which was especially prepared by the Project for each participating farmer. The compliance with these individual schedules would have enabled the participating farmers to produce several vegetables throughout most of the year and thus meet the principal requirement for becoming a direct supplier to the Tegucigalpa supermarkets.

The farmers seem to be experiencing great difficulty in changing their old agricultural practices. Too many of them are planting the same crop that everybody also is planting and at the same time of the year; or are choosing what to plant strictly on the basis of the availability and price of seeds; or on the basis of what they did the year before; and only very rarely on their projections of what the market will require when the vegetables will need to be harvested. On the other hand, these same farmers seem to be quite eager to learn new agricultural practices and, while perhaps slow in putting them into immediate practice, do seem to have the potential capability of becoming, some future day, successful quality vegetable truck farmers.



MEMORANDUM

To: PAUL DULIN
FROM: GUY C. DE MORSELLA
SUBJECT: SALE OF PROJECT'S VEGETABLES TO PLAZA MIRAFLORES SUPERMARKET
DATE: 20 FEBRUARY, 1985

Last 6 February 1985 we implemented the first delivery and sale of vegetables grown under the auspices of our vegetable production and marketing activity "Mercadeo Integrado de Hortalizas y Frutas en las cabeceras de la Cuenca del Río Choluteca".

The store selected for this first "experimental" delivery was the Supermercado Plaza Miraflores, a modern supermarket located in a shopping complex in the Miraflores district of Tegucigalpa. We selected the store on the basis of its location, estimated volume of sales of vegetables (about 6,000 lbs per week: See report "Review and Analysis of Activities and Preliminary Results of Project Vertical Integration of Vegetable (and Fruit) Marketing", Feb.1985), willingness to cooperate with the Project and procurement practices. The store in fact, does not have yet, a well established procurement policy and its highly dependent on the wholesaler vegetable markets of Tegucigalpa. The manager of the Plaza Miraflores Supermarket is Ing. Gino Tentori and he fully understand the experimental nature of our Phase I of our Project; Mr. Victor Sevilla is the store's vegetable buyer, and was instructed to buy our project's vegetable at favourable prices --he was to pay our farmers about 70% of the retail price of the day for the vegetable he bought from them--.

We delivered the vegetables at 7:30 a.m.--They were good quality and were well accepted by Mr. Sevilla. We delivered a total quantity of 360 lbs of remolacha --they were weighted after the leaf part had been out off--, 672 lbs of repollos and 165 lbs of zanahoria --they also were weighted after the leaves were out off.

Mr. Juventino Ramos Rodríguez of Tatumbla contributed 381 lbs of repollo which he sold at 16 cents per lb for a total of 60.96 lempiras.

Mr. Norberto Domínguez of Valle de Angeles contributed 255 lbs of remolacha which he sold at 30 cents per lb for a total of 76.50 lempiras.

Mr. Dionisio Antonio Delgado (actually his brother) contributed 291 lbs of repollo which he sold at 16 cents per lb for a total of 46.50 lempiras; 105 lbs of remolacha which he sold at 30 cents per lb for a total of 31.50 lempiras; and 165 lbs of zanahoria which he sold at 45 cents per lb for a total of 74.25 lempiras.

The farmers were encouraged to develop a personal relationship with Mr. Victor Sevilla, the vegetal buyer for the Plaza Miraflores Supermarket, and arrange personally for future delivery and sales of vegetables to the supermarket.

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To: Paul Dulin
From: Guy C. de Morsella
Subject: Sale of Project's Vegetables to Plaza Miraflores Supermarket
Date: 20 February, 1985

Mr. Juventino Ramos Rodríguez of Tatumbla was reluctant to sell less than 1,000 lbs of vegetables per delivery because of transportation costs. The store was unwilling to commit itself to buying more than 500 lbs of any one product in a single day --they sell a total of about 1,000 lbs of vegetables per day--. They finally came to an agreement that Mr. Juventino would have delivered about 1,000 lbs of repollos at about 15 cents per lb on Monday 18 February.

Mr. Roberto Dominguez of Valle de Angeles was not too sure that he was satisfied for the price he got for his remolacha (30 cents per lb) and did not want to commit himself to future deliveries.

Mr. Dionisio, also of Valle de Angeles, was fully satisfied of the price he got for his remolacha (also 30 c per lb), of the price he got for his repollo (16 c per lb) and the price he got for his zanahoria (45 c per lb). He committed himself to future deliveries on 8 February, 11 February and 13 February of remolachas, repollos, zanahorias, onions and tomatoes; with further deliveries to be negotiated on 13 February.

In general, this first delivery and sale of fresh vegetables directly from the field to the store can be considered a success.

The vegetables were considered of good quality by the store; the farmers were paid a good price, in cash, right away, for the entire amount of vegetables they had delivered to the store; and the farmers themselves were satisfied with the price they got and quite interested in continuing their relationship with the store.

It is hoped that the personal relationship developed between the individual farmer and the supermarket's buyer will continue for the whole vegetable season.

Meanwhile, the Project's credibility with the farmers has improved, as it has the farmer's incentive to accept our Project's suggested practice to stagger vegetable's production through-out the entire year.

GM/em.