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**Factor Analysis for Accelerating Agricultural Productivity
in Less Developed Countries**

To: Project Monitor
Agricultural and Rural Development Service
Office of the War on Hunger
Agency for International Development
Washington, D.C. 02523

From: Simon Williams
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Date: October 1, 1967

Introduction

1. The work done during the first six months of the contract study has already been reported (Progress Report submitted to Project Monitor, dated March 31, 1967). The following description of what has been accomplished during the second six months is keyed to the first report to permit easy cross-reference and to avoid duplication. Since this annual report is being sent to some people not on the earlier mailing list, both reports are being mailed to those not reached before.

Work Done to Date

2. Paragraph 14 of Progress Report 1 indicated that work is proceeding along the following lines:

- a. site selection
- b. market analysis
- c. diversification studies
- d. legal and organizational study
- e. study of potential sources of financing
- f. study of cultural problems
- g. study of political issues
- h. study of technical resources

Site Selection

3. San Martin Hidalgo has been eliminated as a possible site for the model. Except for a limited number of observations to be made at harvest time relative to the performance of varietal plots, no further field work will be carried on in this area. The primary reason for this decision is the fact that early in the study of cultural problems to face in each site, serious and widespread conflicts were found among the several communities which would have to be embraced in a project such as the model corporation. These conflicts, arising out of a growing, articulate and increasingly violent opposition to the traditional centers of political power are deemed so basic and ongoing as to make it difficult to imagine the kind of cooperation which would be needed among the small farmers. (Reference paragraphs 16 and 17, Report 1.)

4. Prior to the decision to drop San Martin Hidalgo, experimental plantings in each of the three sites under study were made, in the following design (reference paragraphs 18-20, Report 1):

a. At each of the five locations (2 in San Martin Hidalgo, 2 in Huejotitan-Zapotitan and 1 in Santa Cruz de las Flores), chosen to reflect the dominant soil types, one measured hectare (2.47 acres) was planted to what was called "commercial" practice. This practice represented an integration of the recommendations of the Centro Internacional de Mejoramiento de Maiz y Trigo (reference paragraph 3, Report 1), Productora Nacional de Semillas (the nationalized company which supplies all hybrid seed) and the best local farmers.

b. At one location in each of the three valleys, the hybrid used in the commercial plot was subject to a fertilizer experiment involving 14 different formulations, as recommended by CIMMYT.

c. At one location in each of the three valleys, one fertilizer formula was applied to a large number of varieties (46 in San Martin Hidalgo and Huejotitan-Zapotitan; 39 varieties in Santa Cruz de las Flores). The design of the fertilizer and variety experiments was given by the staff of CIMMYT; CIMMYT will also analyze the data after harvest and assist in integrating the results of the commercial trial, the fertilizer and variety tests, leading to both a final recommended practice and yield estimates to be used for a cash flow projection.

d. At one site in each of the three valleys, one-half hectare was planted for the production of silage rather than grain. This planting was included because of a total lack of reliable data on silage yield which could be used to calculate feed costs, should the model corporation include a milk production operation (reference paragraphs 27-29, Report 1).

5. Field details of the practices followed and results obtained will be included in Report No. 3. The field work is being supervised as a full-time task by an experienced Mexican agronomist, supported from time to time by visits from the CIMMYT staff. As this report is being written, arrangements are being completed to start the silage harvest at Santa Cruz de las Flores.

6. At the conclusion of the corn harvests in Santa Cruz de las Flores and Huejotitan-Zapotitan, two further experiments will be conducted probing the potential productivity of the land. Historically, in these valleys, a portion of the land is not planted to corn but waits until November until it is put to chick pea. Land management for this crop is minimal. The use of

fertilizer is rare; herbicides and insecticides are never applied... the crop "goes with God" and if there are late rains and if hail in January does not destroy the young plants, whatever crop results is sold as forage. Market price is higher than corn and the demand is good, growing and not satisfied. With corn silage, chick pea hay and pea flour add protein and reduce the quantity of protein concentrate required in milk cows or cattle feed. The two experiments to be carried out are: first, on land which has not had corn this crop year, higher yields will be sought by means of seed selection, use of fertilizer, weed and other pest control and improved seed bed preparation with particular emphasis on moisture conservation; and second, a crop of chick pea will be sought on the land used for the commercial corn crop (paragraph 4a, above) to determine the method, cost, and general feasibility of obtaining two crops per year from the same land.

7. With reference to sites outside of Jalisco which seem to have possibilities for commercial development (see paragraph 22, Report 1), no further work has been applied to this study.

Market Analysis

8. Appendix I, attached, summarizes the results and conclusions of the marketing study covering corn grain (see paragraphs 23-25, Report 1).

9. Appendix II, attached, summarizes the results and conclusions of the marketing study covering milk (see paragraphs 26, 28-29, Report 1).

10. A study is underway of the marketing of swine and will be reviewed in Report No. 3 (see paragraph 30, Report 1).

11. No further work has been done on marketing fresh vegetables (see paragraph 31, Report 1). So far, no meaningful data have been found bearing on underground water supplies for irrigating truck gardens of commercial size. The search for such data is continuing with very recent indications that the Secretaria de Recursos Hidraulicos may have information on the valleys of Santa Cruz de las Flores and Huejotitan-Zapotitan.

12. Study plans call for starting and completing market studies covering beef, poultry and eggs within the next several months.

Diversification

13. Except for marketing studies, analyses of opportunities to diversify horizontally (other crops than corn) or vertically (processing corn or other crops in raw form to a product of higher value) have moved slowly. Some preliminary data have been put together relative to the design and cost of a dairy based on feeding corn silage, possibly chick pea and purchased protein concentrates, minerals, and vitamins. Arrangements have been made to bring a dairy expert to Mexico from the United States, starting his work early in October. It is hoped to complete a feasibility study, utilizing captured feed costs in the cash flow analysis, by the end of the year. Early thinking contemplates a dairy producing between 15,000 and 20,000 pounds per day of cooled raw milk to be sold to existing pasteurizers in Guadalajara.

14. Preliminary study of the market for swine and pork has led to sources of data covering the design and cost of the most modern of the local piggeries. After this information has been studied more carefully (and related to the market), a decision will be reached as to the necessity and desirability of bringing in an expert to help refine cost and cash flow calculations for this type of diversification project.

Legal and Organizational Study

15. Legal counsel has outlined a basic structure to house the model corporation and which adapts itself completely to existing law. While much remains to be done before every detail is completely spelled out, the important elements of corporate design would seem now to be these:

a. The model will be a "Sociedad Anonima de Capital Variable", a corporation which expands its capital base without limit upon duly constituted action by the voting stockholders.

b. The corporation will neither own nor administer land but will manage the practices of the farmers, supply credit, buy from and sell to farmers, and, as required to bring about improved practices and higher income, will construct buildings and acquire and operate capital equipment or goods.

c. Stock held by the farmers will be non-voting. Management control will thus be assured during the period when off-farm investors remain related to the enterprise. Such non-voting stock will be held in trust, in the name of each farmer stockholder so that such equity cannot be mortgaged away or sold.

The trust, which, in addition to protecting the growing equity of the farmers, symbolizes the protection of the public interest, is formed under the management of a national banking institution and includes in its Board of Trustees distinguished Mexicans from the public and private sectors, none of whom having any investment in the model corporation.

d. To be stockholders and so to participate in the benefits achievable under corporate management, farmers (individually or through a cooperative or association- this is a matter not fully thought through as yet) agree to market all produce they have for sale through the corporation. Depending upon what is made available for sale, stock is issued on credit, to be paid for out of real new surpluses which result from corporate management. It is estimated that within three years from corporate startup, all the farmers planned to be stockholders will be. During this first three year period it is not expected that mechanization will replace, although it may come to augment, each farmer's labor as a primary factor in production. Later, when mechanization may replace large amounts of hand labor, each stockholder's rightful equity percentage will have been established and the produce from the land can be handled in bulk rather than through individual deliveries.

e. Upon voluntary withdrawal or upon withdrawal forced by death, the stock held by a farmer returns to the corporation for redistribution among current stockholders; it cannot be sold at the discretion of the farmer or his heirs. The corporation, in turn, pays for this returned stock at whatever its value at the time.

f. The plan calls for 60% of equity to be vested in the trust for the farmers within three years (by the time all the land envisioned to be under management is under management), to reach 70% in ten years and 100% in twenty years, at which time the off-farm investors withdraw, the non-voting stock becomes voting, and the local community of farmer stockholders take over as owners and operators of whatever enterprise has been created. Proportionately, as a dividend to be paid annually, in cash, to the farmer stockholders, 60% of before tax profit is distributed; the off-farm investors pay tax on the balance and distribute the net as their dividend.* Be-

* The distribution of earnings to the farmers before taxes may be the one design element requiring special approval by the government. It is suggested to maximize return to the farmers.

fore tax costs will include all salaries, labor, social security benefits, educational costs, interest payments, depreciation, set-asides for the creation of a working capital fund also to be held in trust, among all other costs normally included in striking an annual balance.

16. The use of non-voting stock to build the equity of the farmer is not intended, as a matter of policy, to keep farmers from having a voice in management. Rather, it is meant to give to the investors taking the risk initially protection against having management wrested from their hands by those who may rightly be judged incompetent. Granted this leaves with it the danger that experience with management responsibility may be dangerously delayed, but it is assumed that investors will simply not be attracted without guaranteed control and that the type of investors moving into enterprises like the model corporation will be committed to its ends and will do everything possible to train the farmers for their ultimate takeover as rapidly as their talents come into view.

17. To date, legal study has been concerned with harmonizing the objectives of the model corporation and the letter of the law. There seems to be no question that this is possible. Once this has been accomplished, the next step will be to pre-test the corporate design in operational terms. For example, while the trust laws of Mexico clearly permit the type of trust being proposed for the model, legal counsel has found no precedents and therefore considerable effort will be required, working together with the national bank to be chosen, to iron out the details of the trust mechanics. Similarly, neither the Mexican constitution nor the agrarian codes appear to prohibit off-farm management from directing the practices of the "ejidatarios" who will dominate in numbers the farmers to be dealt with, yet it is clear that approval for the relationship must come from the Departamento de Asuntos Agrarios y Colonizacion if effective cooperation is to be achieved. Up to now, this federal agency, under which the ejidal system is administered, has not been approached, waiting for the day when the outlines of the model corporation are much more definite.

Sources of Financing

18. Intensive study of potential sources of financing has not yet been fully mounted, but momentum is picking up.

19. One expert from the United States has been in Mexico to familiarize himself with the proposed model, leading to recommendations in the near future relative to alternative organizational forms which take full advantage of existing tax laws in the interest of U.S. investors in the model corporation.

20. It has been determined that if in carrying out a marketing plan (see Appendix I of this report) for corn grain a holding operation is pursued and bonded warehouses are used, storage receipts can be used as collateral to borrow 70% of the market value of the grain from commercial banks. While local interest rates are high (no less than 1% per month), it may be feasible to use this source of credit and wholly finance the purchase of grain from cooperating farmers.

21. It has been further determined that a variety of supplier lines of credit is commonly extended in Mexico by private companies ranging from 90 to 180 days, depending upon the company and the material. Too, under certain conditions, even the public corporation controlling all sales of fertilizer (internally manufactured and imported) in Mexico extends credit up to 180 days. A detailed examination of the cost and extent of this source of financing the new practices of the model corporation will be made in the immediate months ahead.

22. No further effort has been made to approach Mexican sources of equity capital (see paragraph 35, Report 1), pending further elaboration of the feasibility of all aspects of the model.

23. During October and November it is planned to examine other sources of loan capital in Mexico and in the United States, from private and public agencies of national and international character.

24. A special factor affecting financing is the availability of low cost crop and animal insurance. Appendix III briefly summarizes the nature and cost of such insurance available through Aseguradora Nacional Agricola y Ganadera, S.A. The extent, form and final cost of crop and animal insurance taken out by the model corporation will, of course, depend upon the organization finally decided upon, what is insured, how the premium costs are to be borne, among other factors which cannot be fully quantified as yet. The important point to emphasize at this moment is that insurance is available at a cost which appears absorbable into product price without significantly affecting the profit levels being sought, and, overall risk facing lenders and equity investors can be reduced.

Study of Cultural Problems

25. After the preliminary examination of the areas to be studied (see paragraphs 36-39, Report 1), intensive field study began on June 28, 1967. The field staff spent several weeks merely visiting the communities involved, observing the flow of human affairs and the physical nature of the towns, gossiping with the people and eating, sometimes spending the night in their homes, and otherwise taking the strangeness out of their presence. The key to all introductions was the existence of the experimental corn plantings referred to in paragraph 4 of this report. Note that in talking about our project, the only point of explanation was (and remains so to date) that an effort was being made to gather details on how to increase production in their valley, at what cost, and with what return. It was indicated that all results would be given to the community. This has proven to be entirely satisfactory. The whole complex idea behind the model corporation has been judged to be too difficult to make meaningful at this early stage and that it is best to stay with the very concrete evidence of the experimental plots and the results obtained thereon.

26. During these first weeks, a questionnaire was gradually compiled and pretested. Upon refinement, a formal interviewing program began.

27. Persons to be interviewed were selected by drawing in the following percentage:

<u>Occupation</u>	<u>Sample</u>	<u>Statistical Source</u>
Ejidatarios	17%	census
Private owners	11%	census
Share croppers	9%	census
Day laborers	9% approx.	calculation
Merchants	11%	census
Others	9% approx.	calculation

In addition to the random sampling, special attention is being given to securing interviews with all formal and natural leaders in each community.

28. Despite the pretest of the socio-economic questionnaire used initially as the basis for interviewing, it was expected that points of interest would be overlooked and would come into view as the work proceeded. Such was the case. Total family income and expenses were inadequately developed and, in light of our concern to shift farmer attention from crop prices to family income, this oversight needed to be corrected. Omissions relating to a number of traditional farming practices, as well as relating to the cost and care of animals kept at the homestead were noted. It was quickly observed that the interviews were not getting the full reaction of the younger generation

to change factors. Other data gaps have been noted and a supplement to the original questionnaire has been prepared.

29. To date, roughly one third of the total number of persons selected for interviewing have been talked with; in only two instances has cooperation been refused. It is expected that the field work will be completed by the end of October.

30. Persons who would like a copy of these questionnaires may obtain it by writing to Simon Williams, Eclipse 2657, Jardines del Bosque, Guadalajara, Jalisco, Mexico. Since interviews take from three to four hours and are completed in two or more visits to the same family, it can be imagined that the questionnaires are bulky. They are prepared in Spanish.

Study of Political Issues

31. Appendix IV covers a preliminary investigation of this very sensitive area of concern. Further inquiry, leading progressively to key figures in the present government of Mexico, will be made at a later date. It may be recalled (see paragraph 2, Report 1) that official welcome was extended by both the Federal Secretary of Agriculture and Animal Husbandry and the Governor of the State of Jalisco for the model project to be located in the country. While all of these early probes of the political climate for both the model corporation and its adaptation to the other sites in Mexico are encouraging, it is clear that further reaction will be desirable once the form of the model falls into place and can be spoken of in very concrete terms.

Study of Technical Resources

32. This phase of the program has proceeded slowly, largely as a result of the limited time which could be devoted by the consultant retained for the purpose. Most recent interviews have concentrated on the resources within the food and agricultural chemical companies, based on the conclusion that these resources would likely be those most readily available to the model corporation when called for and would be the most relevant in operational terms. As a result of the interest aroused, a meeting was held in Mexico City on September 6, attended by the management of Insecticidas Ortho, International Chevron Chem-

ical Company, DuPont, Industria Quimica Pennsalt, Productos Del Monte, Cyanamid de Mexico, General Foods de Mexico, Heinz de Mexico, Diamond Chemicals de Mexico, the Ford Foundation, the Rockefeller Foundation, and Mexican Representative of the Instituto Interamericano de Ciencias Agricolas, Turrialba, Costa Rica, an institution for research and education of the Organization of American States. Previously, excellent contacts had been established with Mobil Chemical International, Campbell Soups de Mexico, Monsanto, Productos de Maiz (Corn Products Company), Anderson, Clayton de Mexico and La Hacienda (International Milling Corporation). All of these relationships will be cultivated and extended to others. As well as the private companies and organizations, technical cooperation with Guanos y Fertilizantes, the national corporation controlling all manufacture and distribution of fertilizer, and Producora Nacional de Semillas, the national corporation controlling all hybrid corn seed, has been established, e.g. exchange of data, recommendations on best practice.

33. The manner in which all of these contacts and the knowledge gained relative to technical resources in Mexico will be utilized in the development and subsequent operation of the model has not been thought through. Technical assistance is clearly involved. Lines of credit may be available, facilitating financial operations. Investment capital may be one outcome, if not directly then possibly through interest expressed to top management of the parent company if this is outside of Mexico. Support in gaining understanding in public and private institutions and among leading political figures is potential. In the months ahead, the study of these resources and the search for operational meaning for the model corporation of their existence, will be intensified.

Appendix 7

A Preliminary Study of Corn Grain Marketing
in Guadalajara, Jalisco, Mexico
1966-1967

Introduction

1. The methods used and the conclusions reached during the market study herein reported can only be understood in the context of the entire project being assayed, in which the growing and disposal of corn grain is but one part.
2. The project is intended to demonstrate a means of accelerating the application of existing knowledge and critical technical inputs, wherever these can be found to be coincident, to aggregations of small farms traditionally of low yield, in order to sharply and quickly increase land productivity, crop quality, and farmer income.
3. The particular means in question is a new type of land based agri-industrial corporate complex, financed by off-farm, national and international, particularly U. S., sources of money and management, operating for profit, free of public subsidy, and intended in a fixed period of time (20 years is the time scale under consideration) to revert to complete ownership by the original farmer stockholders or their heirs. Farmers yield sovereignty over the management of their land and the marketing of their surpluses but do not yield ownership or land tenure rights. Each farmer buys stock from cash generated by the sale of newly acquired surpluses and the amount of his equity is in proportion to his production (or the production of the land he places under management). The equity of the farmers in the corporation is held in trust, in the form of non-voting stock, during the time that foreign management is in control. During this time, therefore, while farmers and their children are being educated to the nature, value, and management of their assets, they cannot sell or mortgage away their growing estate nor can they transfer management authority.
4. The first agribusiness enterprise of the form envisioned has yet to exist. The project in Mexico is intended to provide both a method of

determining the feasibility of such an enterprise and cash flow data and other information prerequisite to the attraction of pioneering capital and management. In this way, it is hoped to set up a model or prototype, specific to the area yet with adaptability to other crop, market, economic, cultural, and political conditions, anywhere in the world.

5. Specifically, the prototype corporation in Mexico is based upon a combination of: (a) unapplied research data accumulated by the Mexican Department of Agriculture and Animal Husbandry in cooperation with the Mexican Agricultural Program of the Rockefeller Foundation, and, (b) best practice followed by the large scale corn farmers of Jalisco. These indicate that with little or no displacement of labor, the yield of corn grain over wide areas of the state can be increased from 300 to 500% or more per hectare (2.47 acres). From this increase, a diversified enterprise is being planned and each element of feasibility is being examined, including the direct sale of grain into the open market, as well as on the feeding of corn grain and silage for tied production of milk and meat. Additional lines of diversification, also based on locally available information, may be introduced, such as the production of a second crop of forage each year on corn land, the production of peripheral crops such as honey and vegetables, and the dry milling of corn into tortilla flour, but the essence of the enterprise derives from corn grain surpluses. As this report is being written, the magnitude of the operation envisions the management of the land of roughly 600 small farmers who enter the system fully within three years from startup (total family population of roughly 3,600 people), generating 15 to 20,000 metric tons of corn grain not heretofore for sale (tons as used hereafter means metric tons).

6. The market study concentrated full attention on moving this tonnage profitably but without disruptive impact within the Guadalajara marketplace, utilizing normal channels of trade and familiar methods of doing business. No heed was taken of the national problem already faced in Mexico as to the disposal of corn grain surpluses (surpluses in market terms only; in terms of human food needs, Mexico in truth is in short supply), which could readily be greatly complicated by the widespread adaptation of the prototype agribusiness approach to agricultural development. There is an apparent anomaly here which needs explaining, for if indeed the prototype is intended to establish a pattern, then the general as well as the specific problem of marketing surpluses would seem equally important to study.

7. There are two ways of looking at the exercise of establishing a functioning prototype. In the broadest view, it is true that the value of such a model will be determined less by its own success than by virtue of its rapid adaptation elsewhere, once it is a success. In the most austere

extension of this view, the manner in which the prototype corporation profits must be one which prior research determines as being valid in general use, were the model to be duplicated widely throughout the crop area in which it was established. In reality, it is easy to imagine the system proposed raising the annual harvest in Jalisco from an estimated 2 million to 6 or 8 million tons of corn grain. Certainly, marketing millions of new tons of supply is a far different matter to face than the profitable disposal of 15 to 20,000 tons. As the implications of yield multiplication on the scale envisioned were contemplated, replete as they are with the most complex questions bearing on national policy and international arrangements, both modesty and prudence dictated rejection of responsibility, at least at this time, for contributing solutions to the problems facing Mexico (or any other nation in a different crop area in which another prototype might be set up) should large new supplies of corn grain come into being in the years ahead.

8. But the decision to avoid this responsibility was one made on more than just a sagacious estimate of staff competence. There is a second way of looking at the prototype which also imposes this limitation but on different grounds.

9. This alternative view holds that right now every other issue is secondary to getting the pioneering venture going; it sees maximum value in the demonstration effect of a prosperous private enterprise satisfying the needs of small scale farmers for economic and social development, the needs of outside investors for adequate return on the use of risk capital and scarce management, and the needs of political leaders for powerful new tools to speed up agrarian reform which are publically acceptable. It is argued that it is premature to equate the feasibility of the prototype with its ability to fit into national and international marketing strategies, worked out against the day when as yet non-existent new surpluses are produced. In fact, it is probable that to insist on such a criterion would make it very difficult to obtain capital from those who will see enough strangeness in an investment in the prototype, e.g. taking all the risk, operating a supervised credit system, taking the minor share of the profit, withdrawing in a relatively short time, having small scale farmers in remote places as partners, among other corporate ground rules alien to normal investment procedures.

10. The logical extension of this line of thought, then, is to get the prototype into action, demonstrate the viability of one new way to employ private enterprise to accelerate agricultural development and deal with implications of success as a second stage of the project. To get action means to get capital. To get pioneering capital means to maximize profit. To maximize profit means, among other things, to market in the simplest, easiest way.

Should this mean that the benefits of efficiency be returned almost in their entirety to the stockholders, with little being yielded in terms of lower price to the ultimate consumer, then such may be the price of getting a model built. While this may also mean the deliberate introduction of imperfection into the model, surely this is not a vital flaw. This is correctable. Without the model, there is nothing to correct.

11. Thus, we come full circle to the marketing study as it was actually conducted and the data interpreted.

Procedure

12. Once the orientation of the study was determined to be toward the Guadalajara market, an investigation was made of published sources of information for whatever they revealed by way of market size, movement of grain, prices and trends in all of these variables.* It became apparent quickly that such data were incomplete and often inconsistent and had to be improved upon by direct interviewing in the marketplace.

*Resumen del Boletín Mensual de la Dirección General de Economía Agrícola, Secretaría de Agricultura y Ganadería, Mexico, D.F., June, 1965.

Anuario del Comercio Exterior 1965, Secretaría de Industria y Comercio, Mexico, D.F., 1966.

Informe Anual a la Asamblea de Accionistas 1964-65, Almacenes Nacionales de Depósito, S.A., Mexico, D.F., 1966.

IV Censo Agrícola-Ganadero y Ejidal 1960-61, Secretaría de Industria y Comercio, Mexico, D. F., 1965.

Miscellaneous unpublished reports, Cámara Nacional de la Industria de la Masa.

Miscellaneous unpublished reports, Cámara de la Industria Alimenticia de Guadalajara.

Aprovachamiento Racional del Ensilaje de Maiz en la Explotacion Lechera del Sector Ejidal en la Area de Eficiencia Termopluviometrica para el Cultivo en el Estado de Jalisco, Plan Lerma Asistencia Tecnica, Guadalajara, Jalisco, 1966.

El Maiz en Mexico, de la Peña, Crowley, Amarco and Calles, Ibero-Americana de Publicaciones, S.A., Mexico, D.F., 1953.

13. The structure of the Guadalajara marketing system was then determined to include seven distinct lines of movement:

a. Wholesalers or commission agents, comprising a highly varied group ranging from rural assemblers, to truckers, to urban market dealers, interacting in direct and indirect ways not always easy to trace, but generally functioning between the farmer and the various segments of the market described below;

b. Millers, producing "masa", the dough from which tortillas are made (tortillas are thin, flattened, unleavened cakes and serve as the means whereby most of the corn in Mexico is consumed by people);

c. Tortilla Makers, about seventy percent of whom are integrated with milling operators, who buy and sometimes make "masa" and who sell the dough and prepared tortillas to the ultimate consumer;

d. Feed Dealers, serving household and commercial poultry, dairy, and meat producers;

e. Retailers, serving households almost exclusively with dry whole grain corn for animal and human consumption;

f. Manufacturers, called "industry" in this report, who produce starch and starch derivatives by wet milling and who may also be crushers producing corn oil and by-products; and,

g. CONASUPO, (Compañía Nacional de Subsistencias Populares), a federal agency authorized to buy and sell at fixed prices, with the objective of stabilizing price and increasing retained income from the sale of corn by small scale farmers.

14. Questionnaires were prepared, pre-tested by limited interviewing and refined, for use among wholesalers, millers, tortilla makers, feed dealers and retailers. A group of upperclassmen from the University of Guadalajara, for the most part majors in economics, were given a short training

session and then used to apply the questionnaires.* It was impossible to construct a truly random or stratified sample since there is no complete census of the number, names, and relative importance of persons and organizations in any of these five segments of the market. Where partial censuses existed, as among millers and feed dealers, these were used to help insure that samples were representative. In the other cases, samples were gathered in the actual physical centers of corn movement and, by word of mouth, one interview led to another until it was sensed that an adequate and reasonably representative sample had been taken.

15. As it turned out, the sample taken in each group was as follows:

a. wholesalers	-	25 out of roughly 60
b. millers	-	119 out of roughly 200
c. tortilla makers	-	31 out of roughly 1800
d. feed dealers	-	25 out of roughly 50
e. retailers	-	50 out of roughly 1800

Several limitations and inconsistencies existed which could not be overcome without an undue use of time. Many of those interviewed kept no records (or would not reveal them) and clearly there was some distrust of the purposes of the survey. On the whole, however, by checking and cross-checking (sometimes with a second interview), it was felt that the picture which emerged was substantially an accurate reflection of reality.

16. Because of their importance and because they are so few in number, the industry (13 companies) and CONASUPO were interviewed directly by the project leaders, without the use of formal questionnaires. In fact, discussions among these sources of information ran over many interviews and extended to Mexico City headquarters of several of the organizations involved. All of the major industries based on corn in Guadalajara were contacted.

Results

I. Production

17. The most immediately relevant corn grain production figures are shown in Table 1, below:

* Samples of the questionnaires as used are available upon request. They are all relatively brief. All data were correlated by hand.

Table 1

<u>Corn Grain Production - Thousand Metric Tons</u> ^a						
	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u> ^b
National	6,246	6,397	6,424	8,454	8,500	7,500-9,500
Jalisco	1,599	1,571	1,506	2,020	2,217	1,700-2,500
Tamaulipas	225	251	156	403	376	-
Sonora	94	70	71	121	103	-

a. Source of all data except estimates for 1966: Almacenes Nacional de Deposito, S.A., Informe Anual a La Asamblea de Accionistas for 1964-1965, published in 1966.

b. Estimates from various public and private sources obtained during interviews.

18. The special relevance of Tamaulipas and Sonora production to marketing in Guadalajara may be explained as follows. The harvest in Jalisco runs from October to February in the upland areas of greatest importance. There is a small coastal harvest in Jalisco during June and July which, in terms of quality and quantity, as well as in terms of the normal direction of trade, is of little significance in the Guadalajara market. As local current supplies of Jalisco corn disappear and prices rise due to storage and added handling costs, the harvests of Sonora and Tamaulipas move into Guadalajara...from Sonora during February to May and from Tamaulipas from August to October. No corn grain from other producing areas enters the Guadalajara market in commercial quantities.

19. The implications of the data shown in Table 1 may be summarized as follows:

a. The surge in national production in recent years, stimulated by a high internal support price, has taken place faster than the growth of the market which is largely free (some grain from CONASUPO is subsidized in the Mexico City area only, for use in tortillas). This growth in production has also taken place faster than the federal government has been able to provide storage facilities for a large carryover. These facts have combined to encourage a government foreign export program, estimated in 1966 to ship out roughly 1.5 million tons. Under this program, corn grain is exported at

prices several hundred pesos (1 peso = 8U.S. cents) below the support price paid by CONASUPO. Thus, the disposal of corn through export is expensive in national accounting terms. More than this, the so-called "surplus" does not reflect the real food needs of a majority of the people of Mexico which are far from satisfied, qualitatively and quantitatively. Indeed, it may be argued that both in terms of current potential demand for corn and the demand generated by growing population (between 1960 and 1980 it is projected that the population of Mexico will double), there is a real shortage of corn which will become more pressing.

b. Because of the high cost of "surplus" corn to the nation, there is pressure to reduce corn production despite discrepancies between the true and the apparent balance of supply and demand. At the same time, standards of living in the cities are rising, building a demand for more varied and improved diet, less dependent on corn as a staple. In response to both of these forces and still to take into account the large and growing internal requirements for corn, the trend in national agricultural policy (more implied by action and comment than stated in official documents) appears one to discourage corn growing in irrigated areas such as Sonora and Tamaulipas where more varied and profitable agricultural practices are feasible. At the same time, encouragement is being given to greater corn production under the best temporal conditions, e.g., those characterizing large sections of Jalisco. In other words, in the immediate future and over the long pull, it is likely that more corn will be grown, indeed required, in Jalisco, though at first glance it would appear that the pressure to reduce corn surpluses would be most evident in the state producing roughly one-fourth of the national harvest. Thus, the thrust of the proposed model corporation is in line with and in the direction of national policy.

c. As will be discussed later in more detail, the model corporation has four marketing alternatives:

- i. to sell at harvest in the open market along with all other producers, storing as little as possible for the shortest period of time,
- ii. to sell at harvest to CONASUPO,
- iii. to store the harvest until prices rise substantially and sell to the millers, replacing corn ordinarily bought from CONASUPO, and
- iv. to store and, in addition to selling to the millers, sell to industry in competition with corn bought from Sonora and Tamaulipas.

20. A decision to sell at harvest in the open market must remain a possibility, pending a final analysis of the cost of production of grain and of what constitutes an acceptable net price which the model corporation offers to its farmer stockholders. However, there are several arguments opposing this action. If the corporation as a newcomer in the market does not drop prices below existing levels, then it may jeopardize its ability to compete against traditional seller-buyer relationships. If the corporation does lower prices because it can, say as a result of production and handling efficiency, it is likely to force a drop in prices being offered small scale farmers dependent upon wholesalers and truckers to take their grain on site, an impact preferably to be avoided. Finally, if the corporation sells at this time to industry, while it will be competing for the most part against larger farmers and could readily do so in this impersonal arena, then it is not dealing with the supply of basic foodstuffs nor is it in any way supporting public policy, e.g. replacing grain from irrigated areas.

21. It is recommended against selling to CONASUPO. This type of marketing, while it may not be outside the letter of the law is certainly outside the spirit of the law. Maximizing profit at the expense of the public sector is hardly the goal of the model corporation, however easy and profitable it might be to attain.

22. Competition with CONASUPO for the miller market is recommended as the most desirable strategy, again with the proviso that grain production and handling costs permit the inclusion of extra storage charges. This will be analyzed in detail later, in the section on marketing strategy. If adequate profit can be protected, marketing to the millers certainly provides a means of dealing directly with the basic foodstuff of the poorer people, with the opportunity to develop a mechanism for passing on the benefits of efficiency. In addition, it is possible to support public policy, to wit:

a. Even now, most of the corn grain purchased in Jalisco by CONASUPO (356,000 tons in 1966; only 23,000 tons sold in the Guadalajara market) moves out for export or to other domestic markets than those in the state. Even if there were no growth in these purchases, officials of CONASUPO indicated during interviews that the entire crop of the model corporation could be sold as a replacement for CONASUPO grain without any significant effect on, or challenge to, its survival. Actually, there will be a definite, perhaps sharp increase in government purchases of corn in Jalisco in the years ahead. In light of all the facts discussed in the preceding paragraphs, as well as others of a political nature visible between the lines, plans have been advanced to expand Jalisco facilities to receive and

store CONASUPO corn, certainly reducing the relative importance of the marketing practices of the model corporation to the total operations of CONASUPO. Moreover, the expansion of CONASUPO activities in Jalisco will be in more remote areas than those now readily served by agribusiness ventures epitomized by the model corporation, suggesting that the growth of corporate farming of corn and the growth of CONASUPO activities in Jalisco may be efficient and harmonious rather than divisive and antagonistic.

23. Competing in the Guadalajara market with corn from Sonora and Tamaulipas raises two questions. First, as mentioned in paragraph 20, above, is whether or not it fits the objectives of the model corporation to sell grain to industry (the primary customers for Sonora and Tamaulipas suppliers) whose products are less for the poor than for other industries and for the middle or higher classes. On philosophical grounds, the answer is a qualified "no"...qualified in the sense that certain products, such as corn starch, do increasingly make their way into the households of the poor, as does cooking oil. The extent that operations can fit this philosophy will partly depend upon the selling price finally arrived at for grain produced under model corporation management. Second, there is the question of price competition, short and long run, tied to availability of Sonora and Tamaulipas grain.

24. The main instrument used by the federal government to reduce corn production in such irrigated areas as Sonora and Tamaulipas is to limit price supports, e.g. in Sonora there is no CONASUPO purchase program; in Tamaulipas the support price in 1966 was 800 pesos/ton instead of the 940 pesos paid in Jalisco. Available data, such as in Table 1, are insufficient to detect any real decline in corn production in these states. Time will tell whether the drop in harvest in 1965 over 1964 will continue; much will depend on the income to be derived from other crops. Certainly, there is still ample corn from Sonora and Tamaulipas to satisfy the demand of the Guadalajara market. Indeed, the short range impact of low or no support prices in Sonora and Tamaulipas has been to keep the price down and make this corn competitive despite shipping costs. There is no doubt that if corporate farming as symbolized by the model could drop production costs and absorb storage costs sufficiently to sell to local industry in the face of Sonora and Tamaulipas grain imports, national policy would be supported and the adaptability of the model to Jalisco grain production enhanced. Further, if the cost-profit ratio of the model does permit sales to industry during the Jalisco off-season, one could expect support rather than opposition from CONASUPO and all other federal agencies concerned with agriculture. With this in mind, therefore, the tentative (pending final grain production cost calculations) marketing plan set forth later

in this report keeps open the possibility of selling some grain to industry, particularly at the outset in competition with imports from Sonora.

Note - All that has been stated about national policy and the reaction of public agencies to the model arises out of a logical interpretation of fact and stated opinion. There is some risk attendant to forecasting future conditions this way. Statements during interviews, particularly about ideas and abstractions such as a model corporation not yet in existence, can be at odds with real hidden feelings or specific reactions which would be evidenced when the model is implemented. Too, needless to labor the point, federal policies are not necessarily stable, even though the present administration has four years to go. Moreover, institutions such as CONASUPO characteristically tend to grow and to oppose limitations on such growth such as the widespread adaptation of the model might impose.

Still, it has never been the intent or practice of CONASUPO to buy all the corn produced, but rather to buy enough, presumably from small scale farmers, to put a floor under prices. Further, it cannot be conceived that agri-industries such as the model can replace or embrace all pre-existent sources of corn in Mexico. A multitude of campesinos will remain wards of the public. They and the poor in the cities can, should, and no doubt will, demand all of the attention that an enlarged CONASUPO, plus other public assistance agencies, can give them.

25. In summary, corn production data and their implications favor a location in Jalisco for the model and support a prediction of cooperation by public agencies involved in agricultural development. In combination, public policy and alternative sources of supply for the Guadalajara market point to the desirability of concentrating on the off-season market demand by the millers, with some grain sold to industry. The following sections on Consumption and Price further refine these initial conclusions and lead directly to a tentative marketing plan. A final marketing plan will be described in later reports, after all cost data are in hand covering farming and distribution operations.

II. Consumption

26. The Guadalajara market is currently consuming corn grain at an annual rate of roughly 243,000 tons. It was impossible to obtain a true picture of market growth. Best estimates of increased consumption were 10% per year (somewhat higher than growth in population, roughly 6.9% per year between 1956-1965) made by industry and increases slightly below the rate of population growth made by the millers. The millers felt that their relatively slow rate of growth was the result of increased standards of living in the city and a consequent shift from tortillas to other dietary items, e.g. bread. However, even the millers felt that growth was inevitable in the face of rapidly growing population of Guadalajara, the fastest growing city in Mexico at the moment. It is interesting, probably relevant but not correlatable to note that corn production in Jalisco has risen at about the same rate as corn consumption in Guadalajara during the past three years.

27. Purchases by segments of the market, in 1966, are shown in Table 2:

Table 2

Tons of Grain Purchased in Guadalajara, Jalisco, in 1966^a

Industry.....	140,000 ^b
Millers.....	56,000
Retailers.....	19,000
Feed Dealers.....	10,000 to 20,000
Wholesalers.....	8,000 ^c
Tortilla Shops.....	negligible ^d

a. CONASUPO purchased 47,000 tons and sold 23,000 tons in Guadalajara. The 24,000 tons not utilized in the city were shipped out-of-state.

b. Two manufacturers consumed 80% of the total- 112,000 tons; one other purchased 16,000 tons; the remaining 12,000 tons were split among eleven different companies.

- c. Estimated to be sold directly to households in competition with retailers, as distinct from commission sales to millers, feed dealers and retailers.
- d. Most tortilla shops are re-users of the corn processed by the millers. A few do buy grain and make masa, but it was impossible, in any practical way, to determine the amount. In the judgment of the trade, the amount is negligible.

28. Retailers and wholesalers carrying on direct-to-public sales have been eliminated as outlets for the grain of the model corporation. Individual volume is small, and terms of payment often are vague and uncertain. Operations are scattered. In their trade, retailers must carry all kinds of corn and mixes, further cutting down their purchases from any one source of a standard type. Marketing through the retailers, while philosophically tempting in that lower prices might be passed on very directly to ultimate consumers of the poor classes, would simply be more complex and costly than justified at the early stages in the development of the model.

29. Feed dealers have also been set aside as a market, at least at the outset of operation. There are several inter-related reasons for this decision. The use of corn feed has declined sharply with the advent of sorghum in recent years. Feed dealers noted that while sorghum has 90-95% of the nutritive value of corn when fed to animals, its price in 1966 was 30% less. Hence, very little corn is being used in mixing, and, of what is used, preference is given to yellow grain brought from Tamaulipas (essentially no yellow varieties are grown in Jalisco). Dealers said that if local grain, irrespective of color, dropped to 800 pesos/ton to them, feed sales might double in Guadalajara. Really significant increases in feed use of corn, they indicated, could not be expected until delivered prices dropped to 700-750 pesos/ton. With all of the efficiencies in production planned by the model corporation, dropping current corn grain prices to this level does not seem feasible, based on preliminary cost figures, for some time to come, although it is wholly conceivable that such a drop would be possible within several years, as diversification of corporate activity proceeds.

30. Industry in Guadalajara is a definite and important market outlet for consideration by the model corporation, particularly in terms of replacing roughly 50,000 tons of grain brought in from Sonora and Tamaulipas between February and September.

By concentrating on the substitution of this "imported" corn, the model corporation need not in any way disrupt the normal movement of Jalisco grain to industry. Further, as has been discussed, replacement by rain grown corn of irrigated grain from Sonora and Tamaulipas would fit nicely the pattern of national agricultural development.

31. The key to the industrial market in Guadalajara during the off season for Jalisco corn is, of course, price, and this price must include the extra storage and handling charges attendant to holding back the harvest of the model corporation. It is too early to say that the necessary price level can be attained but all early indications point in this direction (indications taken from experimental plantings and from cost data supplied by leading high yield farmers surrounding Guadalajara). Moreover, several factors are at work to enhance the chances of success:

a. Industry for the first time is prepared to receive bulk corn brought in by truck, in contrast to sacked grain, the traditional method of delivery. This eliminates the cost of sacks and their maintenance; handling costs on the farm and at the receiving station are reduced; delivery is speeded, cutting transport charges.

b. Bulk storage facilities have become available in Guadalajara for the first time in 1966 at prices identical to those charged for bagged corn.

c. Good quality Jalisco grain is preferred. Management of the two largest industrial organizations in Guadalajara, together using 112,000 tons in 1966, have expressed keen interest in a source of supply such as would come from the model corporation and held off the market until the local harvest is completed and normal Jalisco grain purchases made.

32. Millers, the producers of "masa" for tortillas, also constitute a prime market for the model corporation. Indeed, as will be seen, in the design of the marketing strategy for the model, the millers are considered as the priority outlet, for several reasons:

a. Most of the 23,000 tons of corn sold by CONASUPO in 1966 in the Guadalajara market, during the off season for Jalisco grain, is purchased by the millers. The model corporation can thus compete for these sales without conflicting with other private sellers and, as observed in paragraph 22, subparagraph a, such an operation is not likely to disturb the management of CONASUPO itself.*

* A check with CONASUPO indicates that sales in Guadalajara in 1967 are comparable to 1966, with probability of reaching 25,000 tons.

b. The prices paid by the millers between March and September, whether to private sources or to CONASUPO, are generally the highest paid by any buyers and offer the greatest opportunity for competition. This will be discussed in more detail later in this report.

c. The millers are a key element in the system supplying food to the poor in the cities. This is less true of the industry. Further, the millers are in a good position to pass on lower raw material costs directly to the ultimate consumer. Therefore, to the extent the sales can be made to the millers as profitably as they can be made to industry, marketing this way fits closely the philosophy behind the entire concept of the model and is to be encouraged.

33. In summary, corn grain consumption patterns in the Guadalajara market point to the industry and the millers as the natural outlets for the crop produced by the model corporation. In both cases, the best time to sell is during the time after the harvest in Jalisco is in and sold, when local prices reach a peak and when the selling activity of the model corporation will have the least disruptive effect on normal trade in the Guadalajara market. Priority attention to marketing to the millers is suggested by both consumption and price data (see section III below), wherein competition will be with CONASUPO. Parallel but secondary attention to marketing to industry is also suggested by the facts, concentrating on competition with corn imported from Sonora and Tamaulipas.

III. Price

34. Table 3 illustrates the price structure for corn grain:

Table 3

Average Monthly Prices Paid for Corn Grain in Guadalajara - 1966

(pesos per metric ton)

	<u>Industry</u>	<u>Millers</u>	<u>Feed Dealers</u>	<u>Retailers</u>	<u>Wholesalers</u>
January	910	920	920	940	920
February	925	945	935	945	920
March	930	980	940	940	940
April	935	970	950	950	940
May	960	980	955	970	950
June	960	990	960	960	960
July	960	1000	975	1005	990
August	935	1020	985	995	990
September	935	1005	950	970	990
October	935	960	920	950	970
November	900	930	900	950	930
December	900	940	910	940	910

35. Despite a few anomalies in the data shown in Table 3, e.g. wholesalers paying more than anyone else in October, the curve of rising prices between March and August is clear and constant, and, at least among the millers, the curve does not move sharply downward until November when the Jalisco Harvest is in full swing.

36. A sample check of prices being paid during 1967 reveals no significant change in comparison to 1966 prices. This is to be expected in view of the continuing influence of the purchasing program of CONASUPO and the constancy of the resale price of CONASUPO grain (990 pesos F.O.B. warehouse).

37. The stability of the price structure for corn is a critical but not necessarily a vital factor in predicting the ongoing profitability of the model corporation. With respect to the question of this stability these points must be kept in mind:

a. No one interviewed during the past year of study questions the continued existence and growth of CONASUPO activities with respect to corn. Whether one or one hundred agri-industrial complexes come into existence in the pattern of the model under study, millions of small scale, depressed farmers in the rain grown corn belt of Mexico will continue to base life on this crop for as far into the future as it is realistic to forecast. In the dozen years since its inception, CONASUPO has become a vital organic part of the corn economy and of the agrarian reform movement and it is inconceivable to every informed person with whom the problem has been discussed that CONASUPO would be directed to withdraw its price support program. All published reports relative to plans to expand CONASUPO in Jalisco support this contention.

b. In the rain grown corn zones such as Jalisco, the CONASUPO support price is 940 pesos/ton. This price was fixed in 1965. Officials of CONASUPO do not expect this price to change in either direction in the foreseeable future. In setting this price in 1965, it is said that upward trends in costs of production and in productivity were taken into account and projected for some years ahead. There is no doubt on anyone's part that the support price is reflected in the marketplace and the data included in Table 3 verify this fact, even though CONASUPO purchases in Jalisco in the 1965-1966 season were only roughly between 15 and 22 percent of the harvest, depending upon the source of the crop estimate.

c. The prices shown in Table 3 reflect purchases in Sonora and Tamaulipas, particularly by industry, at F.O.B. prices of about 840 pesos/ton. There is no CONASUPO purchase program in Sonora; in Tamaulipas the support price is 800 pesos/ton. Whether or not a low support price in these areas will force them out of corn at prices below 800 pesos/ton remains to be seen. General opinion is that corn acreage has and will continue to decline in Sonora and Tamaulipas under the pressure of low prices and a growing demand for other food crops; that few farmers will be interested in growing corn for sale below 800 pesos/ton; and that the availability of Jalisco grown corn at competitive prices during the months of June, July, August, and September, in particular, will accelerate the trend away from corn... or at least away from marketing corn in Guadalajara... in these irrigated sections of northern Mexico.

d. However, even in CONASUPO were to stop or drop the support price and even if growers in the irrigated areas continue or expand their low cost sales to buyers in the Guadalajara market, the design of the model corporation is meant to take this into account and to stabilize the profit taken on the sale of each ton of corn. To wit:

Producers of basic agricultural commodities such as corn cannot hope to control market price. With or without increased productivity, price fluctuations will result from a variety of causes beyond significant influence by the farmer. Thus, the maximum price obtainable by the model corporation in any year will reflect the integrated effect on the market of externally generated forces rather than by any decision of corporate management. This market price, whatever it is, would affect a small scale farmer whether or not he was a part of the model corporation.

Thus, a drop in price in the Guadalajara market, resulting, say, from a drop in the support price of Sonora and Tamaulipas grain, would seriously affect small scale Jalisco farmers, whether or not the model existed. However, if such farmers were in the corporation, their yields would be higher, money would cost them less, marketing would be simpler, agricultural diversification would be taking place in their interest, among other benefits not otherwise available.

In its relationship to farmer members of the model corporation (stockholders), therefore, it is planned to maintain a constant differential, year in and year out, between the price paid to farmers by the corporation and the net price received by the corporation in the marketplace. This differential has not yet been set. It will be when the total feasibility analysis covering the production and marketing of corn grain is completed.

38. In summary, the price structure of the corn market in Guadalajara appears stable and safe to use as a basis for market planning. The rise in price paid by industry and the millers between March and September provides an opportunity for the model corporation to compete profitably during this time with grain purchased from CONASUPO. Thus, the consumption patterns and the price structure of the market reinforce one another in reaching the conclusion that the millers and the industry are the logical outlets through which to market grain surpluses from the model corporation.

Basis for a Marketing Plan

39. As stated several times, the most desirable marketing plan would be one which concentrates on selling to the millers when they are buying from CONASUPO or other high-priced sources of stored grain. This would normally be from March through September. Secondly, such a plan would look to the industrial market from February through April, at the time Sonora grain is imported; from May through July, when grain from any source is scarce and industry pays its highest price of the year (see Table 3); and, from August through October, when Tamaulipas grain is imported.

40. If these markets are to be served at these times of the year, then the selling price must absorb:

a. the cost of transport from the farming area, since the model corporation will buy it there;

b. the cost of storage;

c. the cost of interest on the money paid to the farmers on delivery but not recovered until after several months of storage; and,

d. the cost of handling the grain from the warehouse to the customer.

41. The cost of transport is assumed to be 30 pesos/ton. This is subject to verification after the site for the model farming area is selected. Based upon known costs in the area, 30 pesos/ton is a reasonable figure to use in these preliminary calculations.

42. The cost of storage is 9 pesos/ton per month. This includes 5 pesos storage charge, 4 pesos fumigation charge and a guarantee that the grain will be handed out in the same quality condition in which it arrived. As an aside which will be picked up again later, it may be noted that the grain can be stored sacked or in bulk. Sacked grain will be required by the millers; bulk corn can be taken by at least one industrial organization, the largest single buyer (75-80,000 tons).

43. The interest charge per ton will vary, depending upon the price paid by the corporation for the corn to the farmers. Assuming the purchase of 20,000 tons for storage, and interest charges of 1% per month on locally borrowed money, then, if the price to the farmers is:

- a. 600 pesos/ton, the interest charge per month = 6 pesos
- b. 650 pesos/ton, the interest charge per month = 6.5 pesos
- c. 700 pesos/ton, the interest charge per month = 7.0 pesos

44. The cost of handling the grain from Guadalajara warehouse to Guadalajara customer is 25 pesos/ton.

45. Combining all of these costs, the crop year would demand the following charges to be absorbed by the model corporation, using 650 pesos as the price paid to farmers:

October- harvest- if sold directly-	30.0
November- 30 + 9 + 6.5 + 25.....	70.5
December- 30 + 18+13.0 + 25.....	86.0
January - 30 + 27+19.5 + 25.....	101.5
February- 30 + 36+26.0 + 25.....	117.0
March - 30 + 45+32.5 + 25.....	132.5
April - 30 + 54+39.0 + 25.....	148.0
May - 30 + 63+45.5 + 25.....	163.5
June - 30 + 72+52.0 + 25.....	179.0
July - 30 + 81+58.5 + 25.....	194.5
August - 30 + 90+65.0 + 25.....	210.0
September- 30 + 99+71.5 + 25.....	225.5

46. If these absorbed charges are subtracted from the average monthly prices paid by the millers and industry (see Table 3), we arrive at the real income per ton that the model corporation would have to use as a basis for cash flow calculations. The results of this subtraction are shown in Table 4 as follows:

Table 4

Real Income Per Ton of Corn Grain After
Storage If Selling Price Equals Monthly
Average Buying Price During 1965 - 66
(pesos)

	<u>Average Buying Price</u>		<u>Deductions</u>	<u>Real Corporate Income If Sold t</u>	
	<u>Millers</u>	<u>Industry</u>		<u>Millers</u>	<u>Industry</u>
October	960	935 ^x	30.0	930.0	905.0
November	930	900	70.5	859.5	829.5
December	940	900	86.0	854.0	814.0
January	925 [*]	910	101.5	823.5	808.5
February	945	925 ⁺	117.0	828.0	808.5
March	980 ^y	930 ⁺	132.5	847.5	797.5
April	970 ^{*y}	935 ⁺	148.0	822.0	787.0
May	980 ^y	960	163.5	816.5	796.5
June	990 ^y	960	179.0	811.0	781.0
July	1000 ^y	935	194.5	805.5	740.5
August	1020 ^y	935 ^x	210.0	810.0	725.0
September	1005 ^y	935 ^x	225.5	779.5	709.5

* There is no apparent reason for these drops in price; they are assumed to reflect inaccuracies in reporting and recording and are not considered significant.

+ Sonora grain entering the industrial market

x Tamaulipas grain entering the industrial market

y Period of maximum purchases from CONASUPO

47. The question then arises: can the corporation feasibly absorb the extra storage, handling and interest charges and be able to pay the farmers an acceptable price for their corn and yield an acceptable profit to the corporate stockholders (farmers and off-farm investors)?

48. The answer for the corporation is partly determined by the policy already stated (see paragraph 37, subparagraph d, in this Appendix), namely that no matter what the price of corn, the corporation would maintain a fixed difference between the price paid to farmers and corporate selling price. While this difference has not been fixed and will depend on a variety of factors, such as an "acceptable level of profit" as determined by investors, an inkling of what might result can be seen in the following rough cash flow calculation:

Assumptions:

- a. the corporation takes 150 pesos per ton gross profit on each ton sold;
- b. the staff consists of a general manager, sales manager, five full-time agronomists, a secretary, a bookkeeper-secretary, and ten miscellaneous assistants essentially non-skilled;
- c. the educational costs are used to help design and coordinate training activity but other resources are utilized, e.g. existing schools, other agencies interested in education, for the execution of formal training programs;
- d. \$25,000 U.S. is set aside each year from the gross earnings assigned to farmer stockholders, to build a capital fund. This fund will be invested at the discretion of the Board of Trustees of the Trust (see paragraph 15, subparagraph c, of the main body of this report). The yield is estimated at 10% per year from government guaranteed enterprises. The fund totals roughly \$1,350,000 at the end of 20 years when it is turned over to the farmer stockholders as the entire enterprise becomes theirs.
- e. 60% of the gross income each will be distributed to farmer stockholders during the first ten years, and 70% during the last ten years... and that the off-farm investors pay normal corporate taxes on the balance before receiving their dividends (the possibility of a totally tax-free status for the model corporation will be discussed with the federal government at a later date).

- f. full production from all the hectares intended to be included under corporate management will be reached at the end of the third year (start of growing season of the fourth year).
- g. average annual sales will be 20,000 tons harvested from roughly 5,000 hectares, wherein two years out of ten, dry weather will reduce the crop by 30% and optimum weather will increase the crop by 30% two years out of ten; and,
- h. only the production of corn grain is involved, that is, no diversification takes place during the twenty year period. It is important to note, to avoid any misunderstanding at this point, that diversification is planned very early, if not simultaneously with the introduction of the new corn cropping system.

Illustrative 20 year Cash Flow Calculations for Corn Grain Sales Only

Basis- U.S. \$12 gross profit per ton

1. Sales:

Year one.....	1750 hectares.....	7,000 tons
Year two.....	3000 hectares.....	11,000 tons
Year three.....	4500 hectares.....	18,000 tons
Years four through twenty.....	5000 hectares.....	<u>340,000 tons</u>
Total sales.....		376,000 tons

2. Income from sales.....(376,000) (12).....U.S.\$4,512,000

3. Costs:

a. assuming \$100,000 fixed investment,
depreciation fully effective 3rd year \$370,000b. salaries, including social security
benefits.....1,500,000

c. operating expenses..... 250,000

d. training leadership..... 150,000

Total costs.....\$2,270,000

Total Gross Income..... \$2,242,000

4. 65% (average over 20 years) of gross
income to farmer stockholders..... \$1,457,300*

Gross Remainder for Off-farm Investors..... \$ 785,700

5. Less 42% corporate tax..... \$ 329,994

Semi-net Remainder for Off-farm Investors..... \$ 455,706

6. Less 10% profit sharing under Mexican law..... \$ 45,571

Net for Dividends to Off-farm Investors..... \$ 410,135

*U.S. \$500,000 is deducted from this and placed in trust for investment to yield a working capital fund at end of twenty years. At 10% interest, with all interest reinvested, total assets in this fund assumed at \$1,350,000. Annual dividends to farmer stockholders based on (1,457,300) - (500,000) = \$957,300.

Results: a. Based on participation by 600 farmers, the annual dividend from the corporation would be \$79.78 per

farmer or 997.25 pesos.

- b..The corporation assets at the end of the 20 year period would be fully depreciated but wholly owned by the farmers. While less than new market value, it is likely that due to superior maintenance procedures learned, the \$100,000 original purchase would be worth \$50,000. This means that over the 20 years, the assets of each of the 600 farmers would have increased from this source by \$83.33 or 1,041.63 pesos. As a result of the working capital fund enlarging to \$1,350,000, each farmer would have additional equity assets of \$2,250, or 28,125 pesos.
- c. The off-farm investors, at the time of withdrawal, would have fully recovered the original equity capital.
- d. The off-farm investors would earn 20.5% per year for 20 years on the original equity.

49. Clearly, if the federal government grants tax benefits to the off-farm investors because of their pioneering in the field of agricultural development, the yield to both investor and farmer can be significantly enhanced. Further, diversification is expected to increase corporate income beyond that shown above. However, assuming 20.5% return is enough to attract investors, and to get it the corporation must earn 150 pesos per ton on grain sales, how does this affect the financial motivations offered to farmers?

50. While the costs of the new system of production are not yet fully in hand, a reasonable estimate is 2000 pesos/hectare, up to and including shelling and bagging the grain, at the farm site, at which point it is turned over to the model corporation. Assuming interest at 1% per month and the need to withhold repayment for six months (until harvest time), the farmer must carry an additional 120 pesos burden per hectare. Let us say the yield is 5 tons per hectare (80 bushels/acre). Then each ton costs the farmer 425 pesos to produce.

51. The corporation offers the farmers 650 pesos per ton, providing the producer with 225 pesos net profit per ton. Is this enough?

52. During the course of the market study, informed and experienced people estimated that the net return to the small farmers of Jalisco per ton of grain sold ranged from 180 to 400 pesos. Data separately collected from a dozen of the best and largest private land owners producing corn indicated clearly that after interest payments it was only these large (100 to over 300 hectares) farmers who netted 400 pesos or slightly more per ton; the "ejidatarios" and "pequeno propietarios" earn far closer to the 180 peso figure. Very preliminary data from the cultural studies (see paragraph 25, main body of this report) support the contention that the net income per ton of grain sold is at the low end of the range noted above.

53. For the sake of the argument, let us take a low of 200 pesos and a high of 400 pesos as net income per ton of grain sold and compare the net income of the farmer as he now operates and how he would fare as a cooperator-stockholder in the model corporation:

Case A. I. As he now operates: conditions on the average are these:

- a. has 8 hectares to farm
- b. uses 5 hectares each year for corn-yield 1 ton/hectare
- c. 3 hectares may be put to chick pea as a forage product or all or part may "rest" and not be cropped. We will assume, to be conservative that all three hectares are put to chick pea with a yield of one ton per hectare and a net return of 300 pesos per ton sold.
- d. consumes 1 ton of corn grain and 1 ton of chick pea crop for household and household animals.
- e. thus, sells 4 tons of corn and 2 tons of chick pea

Results: If net on corn is 200 pesos, income = 1,400 pesos

If net on corn is 400 pesos, income = 2,200 pesos

II. As he would be in the model corporation: conditions would be:

- a. all 8 hectares in corn; yield 5 tons/hectare
- b. consumes 3 tons of grain
- c. sells to corporation at 650 pesos/ton; nets 225 pesos/ton
- d. receives annual cash dividend of 997.25 pesos

e. increases equity assets in equipment and in capital fund by 1,458 pesos/year

Results: Annual cash net income,.....9,322.25 pesos
This is 6.7 times traditional income based on 200 pesos net and 4.2 times traditional income based on 400 pesos net per ton of corn grain sold.

Case B. III. As he now operates, all of the conditions in Case A being the same except that yield is 2 tons/hectare and an additional ton of chick pea is sold:

Results: If net on corn is 200 pesos, income = 2700 pesos
If net on corn is 400 pesos, income = 4500 pesos

IV. As he would be in the model corporation:

Results: Income would be 3.5 times traditional based on 200 pesos and 2.1 times traditional based on 400 pesos net return per ton of corn grain sold.

54. The foregoing calculations relative to the farmers' current and potential income do not try to take into account, as yet (they will be in the final feasibility report) three other inducements for the farmer. First, we now know that while the net return on corn at the moment of sale may be 200 to 400 pesos/ton, for a very high percentage of the small scale farmers we are dealing with, this net is immediately payable on debts accumulated during the year at interest rates ranging between 3% to 12.5% per month! Many such farmers are digging themselves deeper and deeper into debt each year despite every effort to improve their practices. The corporation will make it possible to climb out of these holes and attain a point in life where net return really means net retained income. Second, we are optimistic that at least on a portion of the land two crops a year can be grown under temporal conditions. If, for example, chick pea or oats can be produced on land immediately after the corn crop, a considerable increment to farmer and corporate income is in sight. Third, as noted in paragraphs 13 and 14 of the main body of this report and as amplified in part in Appendix II, vertical integration based on corn appears attractive and will probably be recommended in the final feasibility report covering the model corporation. If this type of diversification proceeds, additional value added will be applied to corporate income, increasing the return to all concerned.

55. Combining all of the foregoing calculations and analyses of motivation, confidence is expressed in the acceptance by farmers of 650 pesos per ton of corn and the acceptance by investors of 20.5% return annually on equity plus the return of equity capital, even if these figures are not changed upward by virtue of further data covering farm income and vertical diversification into the partial conversion of raw materials. If so, the corporation is in this marketing position:

- a. Its internal price is $650 + 150 = 800$ pesos
- b. Referring to Table 4, this means that the corporation can compete for the miller market every month of the year except September, sustaining its profit and passing on benefits to the millers in terms of lower price.*
- c. Referring to Table 4, this means that the corporation can compete for the industrial market October through February.

56. With respect to the industrial market, an additional factor, not heretofore elaborated, makes it possible to compete for sales during March, April, May and June, as well. The largest industrial customer (80,000 tons/year) very recently became equipped to handle corn grain in bulk rather than in bags. The cost of bagging involves a loss of 1 peso per sack per year or 11 pesos/ton and the cost of the operation itself, averaging about 20 pesos/ton. It can be seen from Table 4 that if these costs are saved and deducted from what the farmer is paid, then the corporation could easily compete during these months.

57. Table 5 recapitulates paragraphs 55 and 56 above, plus data from Tables 2 and 4 and illustrates the marketing position of the model corporation, as it now appears.

58. From Table 5, it may be seen further that the model corporation:
- a. has a potential profitable market among the millers of 57,326 tons based on 1966 consumption rates;
 - b. has a bagged market among the industry of 58,330 tons;

* Part of this benefit may be passed instead to the farmers in terms of higher buying price, if this proves necessary and more desirable.

- c. has a bulk market during 9 months of the year when the major bulk consumer buys roughly 60,000 tons;
- d. can compete successfully with CONASUPO for the miller market during the period from March through August;
- e. can compete with Sonora grain, bagged, in February and bulk during the entire Sonora season;
- f. can compete easily with Tamaulipas corn, bag or bulk, in October, but not during August and September

59. Finally, it may be noted that an analysis of the cost of building and operating the model corporation's own storage facility will be made to be certain where the maximum economy of storage lies. These data, plus final data on corn yield, costs of production, second crop possibilities, diversification costs and income, among others affecting the investment, cash flow and profitability of the model corporation will be integrated in later reports.

60. In summary, a marketing plan is envisioned and demonstrated as being feasible and profitable which calls for storing grain corn from harvest time in October at least to February, at which time all that can be sold to the millers in competition with CONASUPO would be released month after month, as rapidly as possible. Two modifications in this plan are suggested as being feasible, profitable, and politic, namely: selling a limited tonnage to industry, in bulk primarily, during October to lower imports from Tamaulipas and during February, March, and April to lessen imports from Sonora. No quantities are indicated for each market. This will be defined in the final feasibility report. Suffice it to say that the grain sold to industry by the model corporation will be a token quantity, symbolizing the ability of local suppliers to so compete if production is effectively organized.

Table 5

Marketing Position of the Model Corporation

Based on Corn Grain Operation Only

(1) Month	(2) Consumption Rate- 1965-66 Millers (tons) Industry		(3) Prices Paid- 1965-66 Millers (pesos) Industry		(4) Corporation Could Sell Bagged ^a (pesos) Bulk ^b		(5) Margin for Adjustment- Bagged Millers (3-4) Industry		(6) Margin for Adjustment- Bulk Industry (3-4)
	October	4666	11666	960	935	830.0	799.0	160.0	135.0
November	4666	11666	930	900	870.5	839.5	59.5	29.5	60.0
December	4666	11666	940	900	886.0	855.0	54.0	14.0	45.0
January	4666	11666	925	910	901.5	870.5	24.5	9.5	40.5
February	4666	11666	945	925	917.0	886.0	78.0	8.0	39.0
March	4666	11666	980	930	932.5	901.5	47.5	0	28.5
April	4666	11666	970	935	948.0	917.0	22.0	0	18.0
May	4666	11666	980	960	963.5	932.5	16.5	0	27.5
June	4666	11666	990	960	979.0	948.0	11.0	0	12.0
July	4666	11666	1000	960	994.5	963.5	5.5	0	0
August	4666	11666	1020	935	1010.0	979.0	10.0	0	0
September	4666	11666	1005	935	1025.5	994.5	0	0	0

a. Bagged Selling Price = 650 to farmers + 150 to corporation + costs of transport to warehouse (30) + monthly storage charge (9) + interest charge (5.5) + cost of handling from warehouse to customer (25) (see paragraph 45 and Table 4 of this Appendix).

b. Bulk Selling Price = all items in footnote a above less 31 pesos (see paragraph 56 of this Appendix).

Appendix II

Preliminary Analysis of the Market for Milk in Guadalajara

1966

1. During the corn marketing study, several government agencies, e.g. Banco Ejidal, Plan Lerma, among others, suggested that returns from corn land could be multiplied by producing silage for use in an integrated dairy operation. The idea of such a diversification project, to be initiated simultaneously with the introduction of improved practices for producing corn grain, was immediately appealing. It would demonstrate the mechanism of upgrading raw materials. It would reduce the risk of having all income sources dependent upon the corn grain crop, since feed, such as sorghum, could be purchased. It would build the assets of each farmer beyond the land as equity in animals, stables and equipment grow. It would provide employment and develop new skills and thus not only enhance income but as well contribute a balance to year round use of available labor as population increases and as mechanical energy is applied to the land. Finally, it would fit into national policy.

2. Mexico has a chronic shortage of milk. Forecasts made by the Bank of Mexico estimate that the current national supply gap will widen to 365,000,000 liters by 1970 and will reach 640,000,000 liters by 1975.

3. Jalisco now produces roughly 10% of the nation's supply and ships nearly 50% of its production to the Federal District (Mexico City area). But, while spoken of as a "surplus" producing area, the designation is not wholly realistic and, in light of growth trends in the Jalisco market itself, it is probable that the state will not be able to keep up with demand. It may be noted, for example, that while during June, July and August there is a great abundance, even an overabundance, of raw milk available in Jalisco, there is an extreme shortage during the rest of the year necessitating the import of milk from as far away as Torreon, 500 miles distant, by the pasteurizers serving the Guadalajara market.

4. One semi-official forecast of the supply and demand situation in Jalisco is shown in Table 1.

Table 1

Supply and Demand for Milk in Jalisco*
(Millions of liters)

<u>Year</u>	<u>Total Demand</u>	<u>Total Supply</u>	<u>% Margin</u>
1965	645.2	680.2	+5.4
1966	677.4	709.3	4.7
1967	709.1	738.4	4.1
1968	741.8	768.9	3.7
1969	775.9	800.1	3.1
1970	811.2	832.9	2.7
1971	847.7	866.2	2.2
1972	885.9	900.8	1.7
1973	925.4	936.8	1.2
1974	966.2	974.3	0.8
1975	1008.8	1012.6	0.4

* Assumptions Used by Plan Lerma, Source of Data Above:

- a. Population growth rate (current rate estimated 6.9% year)....4.1%
- b. increase in per capita milk consumption, statewide.....1.9%
- c. Growth rate in shipping milk out-of-state.....2.2%
- d. Production growth rate, based on improvement
programs projected but not yet approved or financed.....4.1%
- e. Overall development and growth rate in Mexico.....4.8%

5. In fact, precise determinations of usage and production, in total and by sector, are impossible. There are literally thousands of widely scattered small producers; users are reluctant to provide concrete, verifiable numbers. Official statistics, reflecting these and other difficulties, are at best an approximation. Nevertheless, the literature and the results of interviewing widely among major industrial buyers, local government officials, research agencies such as Plan Lerma and larger producers did reveal a basic uniformity of trends and opinions. One of the most consistent indications of the credibility gap between data such as shown in Table 1 and informed opinion was the skepticism expressed by major buyers that the government of Jalisco can attain a growth rate in raw milk production sufficient both to level off severe seasonal shortages and total shortages. Human, financial, and managerial resources required to satisfy demand are not in sight.

6. The best practical expression of the real market condition in Jalisco is the expression by the existing pasteurizing plants in Guadalajara of interest in contracting for the entire supply of the model corporation should it enter the milk production business. In evaluating this opportunity to market in such a simple, direct, inexpensive way, several factors need to be kept in mind.

7. During July, August, and September, as already noted, there is a superabundance of milk available in Jalisco; herd management to avoid this is nonexistent. This situation results in a real strain on the large scale buyers. During the nine months of scarcity, pasteurizers and other industrial users must scour the nation for supplies, adding large freight costs and severely cutting profit. During the season of abundance, too much milk must be bought for plant capacity. Buyers operate under the terms of "moral" contracts with suppliers, agreeing to buy all production, year round, in return for an agreement to deliver all surpluses. Thus, pasteurizers in Guadalajara resell milk to users elsewhere, e.g. powdered milk plants, who can store their product. Again, this adds cost and cuts profit margins. Thus, in the management of the herds of the model corporation, it would be profitable, useful, and competitively sound to maximize production between September and May. For example, supplier prices during the past year remained stable at 1.20 pesos/liter from December to June, when they dropped to 1.10 pesos/liter (some buyers are predicting a rise to 1.25 pesos/liter in the September 1967-May 1968 period.) However, because of the potential quality, reliability of contract relationships and delivery cost advantages, Guadalajara pasteurizers have indicated a willingness to pay 1.35-1.40 pesos/liter, on a fixed price contract, if production dropped 60-75% from June to September.

8. The dairy plan for the model corporation envisions at first stage the production of 7,000 to 10,000 liters of cooled raw milk per day. Guadalajara's three pasteurizing plants have increased their combined sales from an average

of 17,000 liters a day in 1963 to almost 70,000 liters/day in mid-1967. Only 15% of their supply comes from within a 100 mile radius of the city. More than this, the pasteurizing plants are operating at considerably below capacity, e.g.

- . Lechera Guadalajara, S.A.- installed capacity for pasteurizing, deodorizing, and bottling is 100,000 liters/day; current production is 31,500 liters/day, or 32% of capacity.
- . Establo Mecanizado Jalisco (a government company) - installed capacity is 44,000 liters/day for pasteurization, homogenization, deodorizing, and packaging in cartons; current production is 7,000 liters/day, or 16% of capacity.
- . La Pureza, S.A.- installed capacity is 35,000 liters/day for pasteurizing, deodorizing, and bottling; current production is 30,000 liters/day, or 86% of capacity.

Despite their difficulties in getting milk year round, Lechera Guadalajara is projecting a sales growth rate over the next two years at 20%, La Pureza a rate of 12% and Establo Mecanizado a rate of 100%. Clearly, these pasteurizing plants, even under current conditions, could (and, as has been noted in (a) above, would) absorb the total output of the model corporation as planned. Table 2, below, supports the foregoing conclusion and, indeed, presents an even more optimistic picture.

Table 2

Projected Demand for Fluid Milk in Guadalajara Area 1967-1975

Year	Population* (1)	Per Capita Use Stable Growth Liters+ (2)	Per Capita Use 3% Growth/yr Liters+ (3)	Total Demand (1) x (2) Million Liters+ (4)	Total Demand (1) x (3) Million Liters+ (5)	Daily Demand (4) 365 Thousand Liters+ (6)	Daily Demand (5) 365 Thousand Liters+ (7)	Daily Demand Pasteurized Milk at 2 Growth Rates Thousand Liters	
								15%	20%
1967	1,200,000	108.5	108.5	130	130	365	365	68.....	68
1968	1,238,000	108.5	111.7	139	142	380	390	78.....	82
1969	1,371,000	108.5	115.1	149	157	410	432	90.....	98
1970	1,466,000	108.5	118.5	159	173	435	473	103.....	117
1971	1,567,000	108.5	122.1	170	191	467	511	119.....	141
1972	1,675,000	108.5	125.7	182	210	500	575	137.....	169
1973	1,791,000	108.5	129.5	194	231	530	635	157.....	193
1974	1,914,000	108.5	133.4	207	255	570	700	181.....	232
1975	2,047,000	108.5	137.4	222	280	601	770	208.....	278

*Average growth rate 1956-1965 was 6.9%/year; same rate applied to 1975.

+Both pasteurized and raw milk.

9. The data in Table 2 not only support the conclusion that the model corporation would have no difficulty in disposing of 7 to 10,000 liters/day among the Guadalajara pasteurizers, but as well indicate that at some date in the future, the corporation might find it profitable to pasteurize, package, and distribute milk as part of a continuous plan to diversify vertically. Because of this, very general cost data are being obtained covering a pasteurizing operation with a capacity to process and package 20,000-25,000 liters per day, estimated to be very close to minimum sized available and efficient technology. These costs will be included in the final report on the feasibility of the plan for the model corporation only to illustrate the type and magnitude of cost associated with vertical integration, insofar as any opportunities may be seen at this time.

10. Other market outlets than the Guadalajara pasteurizers exist, but there seems little reason to service them except during the summer months if it proves more economical to maximize production all 12 months rather than managing a decline during June, July, and August. For example, one corporation with two powdered milk plants in Jalisco (one 75 kilometers, the other 150 kilometers from the city) is persistently undersupplied, on the average (both plants) running at no more than 50% of capacity. However, these plants pay considerably less for raw milk (0.95 pesos/liter average June, 1966 to June 1967 as against a range of 1.05- 1.20 pesos/liter paid by pasteurizers, at farm or roadside). Other industrial buyers, even further away, do buy surplus Jalisco milk, particularly during the summer months but do not pick up milk, although they pay 1.05-1.20 pesos/liter at central collecting points, e.g. from the Guadalajara pasteurizers who purchase beyond their needs at times of overabundance. In short, industrial customers other than the Guadalajara pasteurizers either bring a lower price or cause added costs. In addition, there was little indication that it would be possible to obtain a premium from others than the local pasteurizers for a steady supply of high quality milk, delivered under contract.

11. In summary, assuming a satisfactory cost of production, there is no doubt that a dairy such as is being envisioned as an integral part of the model corporation is needed and would have a ready market for its product. Production cost calculations will be proceeding during the next several months.

Appendix III

Crop and Animal Insurance

ASEGURADORA NACIONAL AGRICOLA Y GANADERA, S.A.

1. A system of crop and livestock insurance was established on December 30, 1961, as a government monopoly. A corporate body was established, Aseguradora Nacional Agricola y Ganadera, S.A., with paid in capital of pesos 25,000,000. Shares were assigned to various governmental departments, banks, and other agencies. Control is vested in an Executive Commission, representing the Secretaries of Treasury, Public Works, and Agriculture- Animal Husbandry, as well as the Bank of Mexico.

2. The Aseguradora re-insures policies written by an affiliated system of mutual insurance companies with branches in each state (Mutualidades del Seguro Integral Agricola y Ganadera, S.M. de S.). Actually, the two organizations function as a single entity, with management direction coming from the Aseguradora.

3. The insurance offered is limited to investments in materials and labor for certain crops, and in life, health and transport of specified livestock. Tables, 1,2,3 and 4 below illustrate what insurance is available, at what cost (or by what means cost is calculated).

Table 1

Types of Livestock Coverage Available-1966

<u>Animals</u>	<u>Type of Insurance</u>	<u>Categories of Stipulations</u>
CATTLE	Transport Life Health Physical incapacity of seed bulls	Age Vaccination Breed Type of housing Location Mode of transport Feeding and housing in transit Time and number of stops in transit
HORSES	Transport Life Physical incapacity of seed stallions	Age Vaccination Type of housing Location Mode of transport Feeding and housing in transit Time and number of stops in transit
SHEEP GOATS PIGS	Transport only	Age Mode of transport Time in transit Feeding and housing in transit

Table 2

Reimbursable Expenditures for Temporal Corn Growth
at Any of the Sites under Study for the
Location of Model Corporation*

<u>Type of Expenditure</u>	<u>Cut-off Date</u>	<u>Maximum Reimbursable</u> (per hectare)
<u>I. Land Preparation</u>		
1. Cleaning and burning	May	30 pesos
2. Plowing	May	100
3. Harrowing	June	50
4. Seed	June	50
5. Fertilizer	June	225
6. Application of seed and fertilizer	June	60
<u>II. Fertilizing and Maintenance</u>		
7. Cultivation	July	50
8. Fertilizer and application	July	215
9. Cultivation	July	50
10. Insecticide and application	August	40
11. Weeding	August	50
<u>III. Harvesting</u>		
12. Harvesting Costs		100
13. Shelling		50
14. Transport		<u>30</u>
TOTAL.....		1100

* Other insurable crops are beans, rice, sorghum, peanuts

Table 3
Crop Insurance Rates for Corn Grown at
Any of the Sites under Study for the
Location of the Model Corporation
 Coverage- 1100 pesos/hectare

<u>Area</u>	<u>Huejotitan</u>	<u>Santa Cruz</u>	<u>San Martin Hidalgo</u>
<u>Total Premium</u>			
1. Pesos	159.50	159.50	143.00
2. Percent*	14.50	14.50	13.00
<u>Ejidatarios</u>			
1. pesos paid by ejidatario	71.50	71.50	55.00
2. percent paid by ejidatario	6.50	6.50	5.00
3. pesos paid by government	88.00	88.00	88.00
4. percent paid by government	8.00	8.00	8.00
<u>Others</u>			
1. pesos paid by owner	93.50	93.50	77.00
2. percent paid by owner	8.50	8.50	7.00
3. pesos paid by government	66.00	66.00	66.00
4. percent paid by government	6.00	6.00	6.00

* Percent refers to premium as a percentage of coverage.

Table 4

Insurance Rates- Milk Cows

Maximum Coverage: Registered- 10000 pesos
 Not Registered- 5000 pesos

Life

1. Local*	3.50 percent+
2. Non-local	4.25 percent

Health

1. Local	60.00 pesos
2. Non-local	80.00 pesos

Incapacity-Seed Bulls

1. Local	2.50 percent
2. Non-local	3.00 percent

Transportation

<u>Train</u>		<u>Truck</u>	<u>Airplane</u>	
<u>National</u>	<u>International</u>	<u>National</u>	<u>National</u>	<u>International</u>
<u>1st 48 hrs.</u>	<u>1st 96 hrs.</u>	<u>1st 24 hrs.</u>	<u>for each takeoff and landing</u>	
0.35%	1.40%	0.40%	0.25%	1.00%
<u>Additional 24 hrs.</u>		<u>Additional 24 hrs.</u>	<u>Each additional takeoff and landing</u>	
0.15%	0.50%	0.20%	0.20%	0.90%

* Livestock born within any of the five regions of Mexico or residing in a region 18 months or more, are considered local.

+ Percentages refer to market value or coverage, whichever is less.

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4. Each state is divided into areas with similar economic and ecological characteristics, and coverages are then based on the risks and needs of the farmers in each area.

5. For crops, the Aseguradora makes annual studies of costs and practices in order to establish schedules. These schedules establish minimum expenditures which must be made by farmers, per hectare, in order to obtain insurance. Any expenditures in excess of the minimum are not reimbursable. Premiums are revised each year.

6. For stock, health and physical incapacity insurance are only available for animals covered by life insurance. Maximum insurable values are established for each category of livestock based on intended use and registrability. Coverage in no case exceeds 90% of market value. The presence of hoof and mouth disease raises the premium. All policyholders pay the same full rate (unlike crop insurance, the government pays no part of the premium). Death from certain diseases, e.g. tuberculosis, brucellosis, leptospirosis, tri-comoniasis, or vibriosis is not covered; herds with an overall incidence of 5% or more of any of these diseases are refused any coverage.

7. Applications for livestock insurance calls for data listed in Table 1. Animals will be inspected by agents of the insurer within 72 hours and acceptance or rejection communicated within 15 days.

8. Application for crop insurance must include a pro forma of investment and an estimate of yield. A decision from the insurer to accept or reject application is made within 20 days.

9. Payment of the entire premium must be made within 15 days of acceptance. The insured must take responsibility for reporting losses within a specified time. The insured must also follow the advice of the insurer's agent in order to minimize losses.

10. Insured parcels of land under the same cropping practice and closer than 1 kilometer are considered the "same plot" in case of the issuance of a policy and reimbursement of losses. Findings and recommended settlements of the insurer's agent may be appealed to the Administrative Council of the Aseguradora within 15 days.

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11. The model corporation, in the opinion of local (Guadalajara) officials of the mutual insurance company affiliated with the Aseguradora, would be eligible for insurance as a creditor to owners or as an owner of livestock and cropland. Policies are currently in force covering farmer cooperatives and to official and private creditors of farmers. In the latter case, policies indicate the consent of both parties as to the disposition of indemnization payments. It was pointed out that ejidatario rates apply when one party to the policy is an ejidatario.

Appendix IV

A Preliminary Survey of the Political Feasibility of Private Enterprise Increasing the Productivity of the Mexican Ejidatario and Pequeño Proprietario*

This survey was made by Mr. Merwin L. Bohan. His report follows. At its end, some additional comments have been added by Simon Williams, Principal Investigator.

Mr. Bohan, retired from the U.S. Department of State since 1955, has had a distinguished career in Latin America. From 1951-55, he was U.S. representative to the Inter-American Economic and Social Council, with the personal rank of Ambassador. With the same rank, he was U.S. Commissioner, Joint Brazil-U.S. Economic Development Commission between 1951-53. Since retirement, Mr. Bohan has served as a consultant to the State and Commerce Departments, Pan American Union, Inter-American Development Bank, a number of private U.S. corporations doing business in Latin America, the Economic Commission for Latin America, of the United Nations, among others.

* The emphasis of this first inquiry has been on the ejidatario. In the two sites now under consideration for the model corporation, ejidatarios dominate, ranging from 75 to 95% of the population. Further, the problem of dealing with the ejido is by far the more politically sensitive issue.

1. The terms of reference of this preliminary inquiry are based on the statement made in paragraph 40, Progress Report No. 1. For the sake of coherence, this is restated, in part:

"The key issue to be faced is this: agrarian reform and improved agricultural productivity are basic platforms of the Mexican revolution and are the responsibility of a large number of federal and state agencies; those to be helped are dominantly the ejidatario and the pequeno propietario and separate institutions have been created to work in the interests of each; thus while the IMI project has official blessings both as an internationally-oriented experiment and one whose success could be very important to Mexico, how do the political leaders and the heads of the institutions created to achieve the goals of rural prosperity really feel about the role of private investment, particularly foreign private investment---".

It must be stressed that what follows is merely a preliminary appraisal of the problem. It is believed, however, that while further investigation may refine and add to the information presented herein, it will not materially affect the validity of the conclusions presented at the end of this report.

2. The possibilities of the agri-industrial enterprise symbolized by the model corporation were generally found to be so intriguing that the average politician and government official tended to react favorably and to discount the gravity of the obstacles that lie in the path of implementation. For this reason, such interviews (ten among Mexican political leaders; six among key staff at the U.S. Embassy; two with U.S. businessmen with long years of experience in Mexico), enlightening and necessary as they are, are no substitute for a careful interpretation of the known factors in contemporary Mexican political affairs which might promote or obstruct the realization of the model and its widespread adaptation to rural Mexico.

3. Perhaps the strongest favorable factor is the widespread realization of the need to find some way to improve the productivity of the ejido. While the cooperative approach is the principal solution one encounters, there is generally a lack of real conviction on the part of those who propose it, undoubtedly because of the many failures recorded during the long period of Mexican experimentation in this field.

4. Factors of a more negative character include the conflict between agrarianism and agricultural reform, the vulnerability and generally low cultural level of the ejidatario and pequeño propietario, vested interests favoring the status quo, and the continued appeal of anti-imperialist slogans. All of these factors influence political and bureaucratic attitudes and must be taken into account along with the reactions of political and government leaders when assessing the political feasibility of a union between private capital and ejidatario labor.

5. Agrarianism versus Agricultural Reform

"A continuing problem in Mexico", wrote Harold F. Cline in 1963 in The United States and Mexico (page 421), "is to achieve some stable equilibrium between agrarianism and agricultural reform, two quite different matters. The one, agrarianism, is essentially political and social. Dividing the land among the landless who want and can utilize it, fulfills an old Revolutionary dream and promise. Agricultural reform, on the other hand, seeks to use Mexico's rather limited resources most effectively so that the rural sector becomes both a widened consumer market and a steady supplier of crops needed to feed a booming industrial system and an expanding population. Agricultural reform tends, therefore, to be economic and technical."

6. The problem is still unsettled and is likely to remain so for a long time. True, the pendulum is unlikely to swing as wildly as it did in the time of Cardenas, but movement to both the left and right is still observable and the pros and cons of the social and economic objectives of agricultural policy continue to be debated in both the political and economic spheres. A vivid example of this is to be found in the summary of the discussions held last August at the Round Table organized by the Center for Agrarian Investigations in Mexico City. At that meeting, ways and means to increase the productivity of the ejido appear to have evoked less interest than the social aspect of the system. At one extreme are those who favor the nationalization of all land and the collectivizing of agricultural production. A more moderate element holds that the social objectives of the ejido program outweigh the economic and that more land must be given to the ejidos even at the expense of productive efficiency. Fortunately, those who have stood for agricultural reform have been so successful in increasing agricultural output that they have built strong defenses around their main positions.

7. This conflict has a very direct relationship to plans for enlisting the aid of private capital to increase ejido productivity since the majority of those who espouse the cause of agrarianism also have an almost pathological distrust of private capital and enterprise, particularly that

from north of Mexico's borders. Even the technicians who are more interested in the economic aspects of the problem, are apt to be prejudiced in this regard and to look askance at projects for joint action

8. Vulnerability of the Ejidatario

In one of the studies presented at the Agrarian Congress held in Toluca in 1959, it was estimated that the boundaries of 75 percent of the ejidos of the Republic had not yet been definitely surveyed and that the legal distribution of parcelas had only been completed in 20 percent of the ejidos.*

9. The parcela or parcel of land to which the ejidatario is entitled is not a property held in fee simple but little more than a conditional and revocable right to the use of the land. Estimates of the percentage of ejidatarios who have a legal "title" to this right (Titulo Parcelario) run from 5 percent to 15 percent. The rest have no legal documentation or only a Certificado de Derecho Agrario which attests to membership in a recognized ejido.

10. Even allowing for a high degree of inaccuracy in the estimates quoted, it is clear that the individual ejidatario is vulnerable to all kinds and sorts of pressures whether from local political bosses, aggressive influentes, or even the pistoleros who have not entirely disappeared from the rural scene. During the course of the present survey many hair-raising tales were heard of land grabs, political shenanigans and even murder when recalcitrant ejidatarios failed to heed the soft voice of reason. While conditions have improved over the years, the vulnerability factor must be given due weight, particularly when considering the degree to which the ejidatario can act as a free agent even when legally empowered to do so.

11. Vested Interests

There is no question that among the top echelons of the governmental, political, and private sectors of Mexico there is a genuine desire to better the lot of the ejidatario and to make him a prosperous and productive

* While the legal distribution of parcelas has changed little since 1959, the Diaz Ordaz administration's active aerial mapping program now permits determination of ejido boundaries in many areas of the Republic.

member of the national community. At the local level, however, a disturbing array of vested interests has been created with a formidable stake in maintaining the status quo. Contributing to this situation has been excessive governmental intervention in ejido affairs, the practical needs of the dominant political machine to assure its control, and the many opportunities for aggressive individuals to profit from the ejido system.

12. A man who should know the ins and outs of the agricultural bureaucracy, Moises T. de la Peña, for six years manager of the Banco Nacional de Credito Agrario, thus describes the situation as it relates to the ejido (a free translation from page 356 of El Pueblo y su Tierra): "(Government tutelage) is a problem--If the ejido is given full liberty or abandoned to its own devices, all is disorder, abuse, and frustration; if not, intervention becomes so exaggerated that it destroys initiative---For there is no moderation---and with intervention come the costly and sluggish ways of bureaucracy, the abuse of authority and inefficiencies and immoralities---".

13. This may be and possibly is too dark a picture. Yet, in another section (pages 371-376), de la Peña outlines in detail the illegal and corrupt practices which he charges are commonplace among ejido authorities, local officials of the Departamento Agrario and field personnel of the Banco Ejidal. His testimony is convincing since he gives chapter and verse and a number of the practices he describes were mentioned by others in interviews held in connection with this study.

14. Those charged with delivering bodies for political activities and votes at election time have a vested interest in a docile and obedient electorate. Land tenure uncertainties and other weaknesses of the ejidatario that can be played upon provide fairly solid assurances in this regard. Even at the national level, there is a strong political element whose desire to help the ejidatario is tempered by the fear that increasing productivity will not only encourage overly independent attitudes, but lead to mounting rural unemployment and an accelerated urban flow.

15. Finally, the renting of parcels, the purchase of ejidatario rights, and sharecropping arrangements - all of which are outright illegal - are today widely engaged in by a well-to-do and influential class of ejidatarios and rancharo entrepreneurs who would view with more than distaste any threat to their interests as would local money lenders, merchants, and others who have a stake in the present inefficient workings of the ejido system.

16. "Anti-Imperialism"

There is little need to belabor this topic. Suspicion of foreign motives, foreign capital, and foreign enterprise is a built-in legacy of the Mexican Revolution, particularly deep seated in agrarian circles. Any affected interest - whether bureaucratic, political, or economic - can create serious problems by merely raising this banner as any foreign interest operating in the agricultural sector of the Mexican economy can testify. As many of such firms do operate successfully in this field, this factor should not be overdrawn, but neither should it naively be disregarded.

17. Interviews

During the course of this preliminary survey, sixteen formal interviews, as well as a number of informal conversations, were held. Without exception those consulted showed keen interest in the model, felt that it had real possibilities as an institutional means to help the ejidatario and pequeño propietario, and expressed a willingness to go deeper into the subject when it was felt desirable to do so. Several voluntarily offered to be of assistance at the appropriate time, an offer that should be of particular value in the cases of Dr. Lauro Ortega, Chairman of the National Executive Committee of the PRI; Ing. Julian Rodriguez Adame, Chairman of the International Cotton Council and ex-Minister of Agriculture; Ing. Ramon Fernandez y Fernandez, President of the Center of Agricultural Economics at the Chapingo Post-Graduate College and author of an authoritative book on Mexican agricultural policy; and Lic. Gilberto Loyo, President of the Center for Agrarian Investigations and one-time Minister of Economy.

18. In the all important field of political feasibility, reaction was somewhat more favorable than the factors touched upon in previous sections would seem to warrant. This may indicate that our analysis of those factors was unduly pessimistic or, what appears to be more likely, those interviewed had little opportunity for reflection or for second thoughts. It must also be kept in mind that while the proposition presented was found intriguing, those interviewed were heavily weighted in favor of agricultural rather than agrarian reform (because the former more accurately reflects present Mexican policy), and agreement "in general" is always more easily obtained in Latin America than agreement "in particular".

19. The two persons closest to the political scene (Dr. Ortega and Ing. Rodriguez Adame) tended to play down the political difficulties at both the national and local levels. Ing. Rodriguez Adame, for example, felt that once

the cooperation of the local state governor was assured, this official could easily enough handle local political problems through the Ligas de Comunidades Agrarias. They both felt strongly, however, as did all the others interviewed, that top level political and official backing was essential. Several did foresee trouble - both bureaucratic and political - at the grass roots and at least six persons felt that the corporate structures should be as Mexicanized as possible. A very competent observer noted that private circles in Mexico were awakening to the need of contributing to ejido productivity and felt that it would be possible to secure substantial financing for the program within the country.

20. As for the official backing that should be sought, all mentioned the need for the goodwill and support of the Ministry of Agriculture and the Banco Ejidal. Ing. Rodriguez Adams took pains to emphasize the need for the effective approval and support of the autonomous Departamento de Asuntos Agrarios y Colonizacion which would be called upon to approve and supervise all legal relationships between the ejidatarios and the service companies. A surprising majority of those interviewed recommended seeking the support of the Ministry of Hacienda and the Banco de Mexico, feeling that these would prove to be the key institutions in furthering the plan. It was pointed out that these agencies had already brought about, against strong opposition, private intervention in the agricultural credit field and would be more likely to view a corporate approach sympathetically than the agricultural agencies with their strongly bureaucratic and cooperative leanings.* One also recommended that the diversification objectives of the plan be forcefully brought to the attention of these institutions since both were beginning to look askance at high level support prices for corn in view of surplus production (estimated at 1,100,000 metric tons in 1967), a surplus that was being disposed of abroad at a heavy loss to the national treasury. Furthermore, the Ministry and the Bank were in opposition to those who were demanding that a higher percentage of public resources be devoted to agriculture and hence should welcome greater private financial assistance in this field.

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This reference is to banking credit. Private firms such as Anderson Clayton de Mexico, Diamond Chemicals de Mexico, Alimentos Heinz, Tabaco en Rama, and others, have long helped finance both ejidatarios and private rancheros.

21. Lic. Gilberto Loyo stressed the advantages of having a preponderance of Mexican capital in the operating companies, an aspect stressed by several others as has already been mentioned. He also felt that it would be impractical to operate on an individual ejidatario contract basis and that some form of cooperative or joint arrangement would be essential and should be worked out before presenting a concrete proposal. In this connection, it should be noted that the Banco Ejidal will not work with individual ejidatarios but insists that local credit associations (Sociedades Locales de Credito) be set up.

22. In many respects, the interview with Dr. Ortega was the most interesting and possibly the most fruitful of all. He is deeply interested in the problems of the ejido and apparently has given much thought to ways and means of raising their productivity. He lays the blame for so little progress on what he terms a lack of clear cut responsibility at both the top and local levels of government. He maintains that everyone is in the act but that no one is specifically charged with the responsibility for results. He looks for a solution to come from outside rather than inside government. His idea is to place administrators in charge of sufficiently large ejido areas to permit modern practices to be employed and then pay the administrator a small salary and a liberal percentage (he mentioned 10 to 12 percent) of the increased output resulting from the new system. Dr. Ortega readily agreed that the model corporation plan contained many of the elements he had in mind and gave assurances of his availability for further discussions.

23. The lack of responsibility for ejido productivity appears to be a valid criticism as was confirmed by a brief survey of the Puebla area where calls were made on the local Agency of the Ministry of Agriculture, the Delegate of the Departamento Agrario, and the Banco Ejidal.

24. A reading of theCodigo Agrario (the latest edition was published by the Editorial Porrúa in 1967) gives the impression that the Departamento Agrario has clear responsibility (see particularly article 38 as modified by Presidential Decrees of 1945 and 1959). Actually, if the explanations given by all concerned are correct, the Departamento Agrario is responsible for all legal matters pertaining to ejido land tenure and endowment, ejido contracts, the rights of individual ejidatarios, etcetera; the Ministry of

Agriculture handles agricultural extension; and the Banco Ejidal (it services some 20 percent to 25 percent of the ejidos only) provides credit to the local credit associations. The Bank also works up operating plans and cooperates with the extension services of Agriculture. However, all parties, upon questioning, hedged sufficiently with respect to responsibility for results as to support Dr. Ortega's statements.

25. Conclusions

- a. The major conclusion of this preliminary survey is that it is politically feasible to utilize privately-financed, privately-managed service companies to increase the productivity of ejido holdings, providing:
 - i. Top level support in both the political and official sectors be first obtained; and,
 - ii. The first several service companies be predominantly or wholly Mexican financed and wholly Mexican staffed.
- b. Meeting these requirements would not demand any basic changes in the plan for the model corporation. In fact, that the plan already contemplates the seeking of local capital so that the approach suggested is primarily a matter of timing. The extent to which Mexican capital could be raised is another matter and possibilities in this regard would have to be carefully investigated.
- c. As a preliminary opinion, however, it is believed that if it is found feasible to set up and finance an Adelatype international investment institution that there are enough forward-looking groups in Mexico to assure the success of the approach suggested above, perhaps with the international institution sharing risk with its Mexican partners. Once the service company system has proved its worth and secured solid backing in official and political circles, local capital contributions could be progressively diluted providing the Mexican character of the system be scrupulously maintained.
- d. It is not believed that it would be politically feasible to set up service companies that would be clearly foreign financed and e.g., the model corporation subject to foreign management control. A few test experiments, might be carried out with sufficient high level

backing, but if the system became generalized, political obstacles would soon become insurmountable. There is no escaping this conclusion given the revolutionary character of the service company concept. If successful, it will set up a protective barrier between the ejidatario and those who have long been exploiting him. Eventually, it will create a self-respecting and independent class of rural "capitalists". Anathema to many on ideological grounds, the ranks of the opposition will be swelled by those whose bureaucratic, political and economic interests appear to be challenged. It is all too Mexican a problem for the employment of a foreign catalytic agent - such an agent can help in the background, but only a truly criollo agent can fight successfully the battles that lie in the path of implementing a concept that holds out so much hope for Mexico.

Submitted July 27, 1967

Merwin L. Bohan

Supplemental Comments

Simon Williams

26. Subsequent to writing the foregoing report, Mr. Bohan and I have had several long discussions bearing upon three very important issues, namely: the development of support at the top of the Mexican government; the development of support within the Departamento Asuntos Agrarios y Colonización, which so intimately controls ejido affairs; and, the need to Mexicanize the proposed model corporation.

27. With reference to gaining further support from the Federal and state governments and the Departamento Asuntos Agrarios y Conolizacion, it is to be remembered that both the Federal Secretary of Agriculture and Animal Husbandry and the Governor of the State of Jalisco, where the model is to be sited, have given a warm welcome to the activity (see paragraph 2, Progress Report No. 1). It is agreed that this welcome dates back over a year and that the understandings which existed then do need updating and expansion to other parts

of the government. The primary reason for the delay in building more and stronger bridges to the top of the government is that the study of the feasibility of the model corporation simply has not progressed to the point where the precise nature of the model can be reduced to concrete terms. It has been my judgement, based on an integration of the widest range of counsel among Mexicans with whom I am associating, that communications to top political figures would be weakened if talk centered around the idea of the model rather than on the specific concrete structure to be created. As Mr. Bohan has stated in paragraph 18 of his report, agreement "in general" is always more easily obtained in Latin America than agreement "in particular".

28. As can be seen by a careful reading on this report, of which Appendix IV is a part, the study is verging on the final stages of feasibility analysis, with a great many loose ends about to be woven into the basic structure of the model. As soon as these data are in and combined, and before any attempt is made to start investment promotion, there will be a full concentration of effort to reach all the Mexican political and private sector leaders, gain understanding, and, through understanding, generate sustaining support. Meanwhile, the strategy noted in paragraph 28, Progress Report No. 1, will be carefully observed, establishing solid working relationships with the heads of the Jalisco branches of all the key federal agencies, so that these people can and will facilitate meeting the right persons up the line. The one exception to this policy may be a visit with both the Federal Secretary of Agriculture and Animal Husbandry and the Governor of the State of Jalisco, to review their support. This action is under study.

29. With reference to the Mexicanization of the model, the issue is complex and not wholly resolved as yet. There is no question about the desirability of drawing in Mexican private capital and Mexican partners, who can, as Mr. Bohan concludes, "fight successfully the battles that lie in the path of implementing a concept that holds out so much hope for Mexico". Nor is there any argument over the desirability of staffing the model corporation as fully as possible with Mexicans, right through local top management. However, there is another side of the project which must be considered.

30. The model being constructed in Mexico is intended to be one which is symbolic of an important role to be played by private investors in worldwide agri-industrial development among small scale farmers. In reality, the

model is in Mexico by the coincidence of choosing this country in which to establish a prototype. In this sense, success in Mexico is not intended to be a peculiarly Mexican success leading only to more of the same in this country. Success is meant to catalyze the flow of investment capital into similar projects throughout the world.

31. Some of those reading this report will have read the original article which conceptualized the particular role of private investment in world agriculture which the Mexican model is intended to implement.* For some who have not read the article and for others who may have forgotten, the following quotations are relevant:

The question is: How can such investment be achieved? Any probe of the economics of the nations needing the most money reveals three additional facts:

(1) There is not enough private capital to affect agriculture significantly.

(2) Those who control what private capital there is generally are not interested in agriculture, even though they may have been or are landowners. In their eyes the risk is too high, politics too central, and the return too low in comparison, for example, to money put into real estate speculation or into the operation of protected industries.

(3) The private sector of most of these countries, where there is one, is traditionally not philosophically motivated to help the myriad of poor, small farmers in a direct, partially altruistic way. So, with private capital required and little internally available, the resort must be to foreign capital and the management which comes along--- and much more of both than is now being supplied.

* "Private Investment in World Agriculture," Harvard Business Review, November-December, 1965 Simon Williams.

During the next two decades foreign investment in agriculture must generate far more production for consumption where the hungry depressed people live; it must catalyze far more capital formation in rural sectors among those presently impoverished and ignorant who are working tiny parcels of land; and, ultimately, it must be the stimulant encouraging the flow of local private capital into farming and related production facilities.

What all of this really means is that large amounts of private money from the United States must lead the way. It is only in the United States that private capital, skilled management, dedicated foreign policy, and personal conscience combine in the proper mixture and in sufficiently large quantity to give hope to the hungry world-- and to ourselves. It would be comfortable if foreign aid via the government had done or could do the job. It has helped, but it cannot be the prime mover. It would be nice if more free enterprisers from Western Europe and from Japan or other centers of private wealth, advanced education, and technical know-how would carry a large share of the burden. But there is no evidence that they will take the initiative or share the risk attendant on the pioneering role.

32. Nothing that has occurred during the first year of field work in Mexico has changed this view. Therefore, when it is argued that the model obscures the role of U.S. investors, a true dilemma is faced: if success of the model depends on a lack of identification with U.S. investors, then can we interest such investors; if we insist on this identification and an overt role in control, do we threaten the opportunity to locate the model in Mexico?

33. I doubt that we can or should attempt to interest U.S. capital in taking a lead role in agri-industry development throughout the hungry depressed nations of the world if it must remain obscure, almost apologetic. True, in the highest realm of philosophical thought, true power and the finest of pride should be in response to action, not recognition. However, I do not believe we can lean heavily on the expectation of such a response. Pride and recognition will go hand in hand among the managers of the great reservoirs of money, know-how and administrative talent in the productive system of the U.S. and elsewhere. If large amounts of private investment capital are to flow from the U.S. into world agriculture, it will not do so for profit motives alone.

34. At this moment in time, I am predisposed to find a compromise, the quality of which has yet to be described. Mr. Bohan notes in paragraph 25, subparagraph d, that "a few test experiments, e.g. the model corporation, might be carried out with sufficient high level backing, but if the system became generalized, political obstacles would soon become insurmountable". I am inclined to go for the model as a "test experiment" with U.S. investors clearly involved in a joint venture with leading Mexicans from the local private sector, leaving it to the future to lead the way to widespread use of the model plan as a purely Mexican program. In this way, we can try to be responsive to all demands and attain an elegant solution, from a local and from an international point of view.

35. This whole matter will increasingly preoccupy the staff in the immediate months ahead.