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AGRICULTURE SECTOR ASSESSMENT FOR HONDURAS

AUGUST, 1978

AGENCY FOR INTERNATIONAL DEVELOPMENT

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I. INTRODUCTION

1. Purpose and Methodology

This sector assessment was conceived, and its methodology designed, to achieve three discrete but related ends: (1) for use as the Government of Honduras believes appropriate in the formulation of the agricultural sector portion of its five year National Development Plan 1979-1983; (2) as the analytical basis for a second AID sector loan in support of the Honduran program; and (3) for use by the Government of Honduras in providing guidance to agriculture sector agencies in the planning and execution of their operations.

With the above purposes in mind, a draft scope of work along the lines of that attached to the June 1977 PID was discussed with representatives of the Ministry of Natural Resources and the National Planning Council in order to ensure that the interests of all participants in the process could adequately be met. This resulted in some expansion of the draft scope of work prepared by USAID, e.g., provision was made for studies of certain aspects of national parks development and wildlife protection. It was also decided to go into greater depth in the macro-economic study.

This final scope of work, thus agreed upon, provided for undertaking studies, surveys and/or organizing data in 24 discrete subject matter categories. (See Annex H for a detailed listing). All but one item, i.e., the planned for study on agrarian reform, were carried to completion. Four of the topics were dealt with in house by USAID staff, one topic (water resources) was covered by a USAID financed study commissioned earlier, and one study (agricultural research) was produced under an arrangement between GOH and the International Agricultural Development Service (IADS). The remaining studies were contracted with consulting firms or individuals. Twenty-one of the studies are to be published in Spanish in a two-volume printed edition and given wide distribution as a basic reference work. It is made clear in the Introduction to the publication that the content of each individual study represents the point of view of the author -- who was given complete freedom to come to his individual conclusions -- and not necessarily of either the Government of Honduras or AID. The twenty-second item (a collection of 1974 Agricultural Census data disaggregated on a regional basis) will be printed or reproduced and distributed separately in a smaller number of copies. The final item, a study on Price Policies, is considered not to be in final form and will not be included in the printed edition.

It was agreed that each Agency, including USAID, would of course be free to use the material in the individual studies as it saw fit. The statements in the Assessment -- to the extent that they derive from the above studies -- reflect USAID reactions and not necessarily a common denominator judgement. Nevertheless, in the interest of not only having each party proceed with its analysis from a common data base, but also of providing a unified understanding of the material and an appreciation of the several points of view, a procedure was established whereby:

a. A coordinating committee was established, composed of Mr. Leonard Kornfeld, under personal services contract to the Mission, and counterparts from the Ministry of Natural Resources and the National Planning Council, respectively. This three-man committee collectively worked out detailed terms of reference for each study, made recommendations to the GOH and/or AID as appropriate concerning the terms of reference and who should be recruited, briefed each expert or team of experts on initiation of work, and reviewed the progress of the study with the consultant at appropriate points in time.

b. The Technical Commission of a standing Ministerial level coordinating committee (COCO), which is composed of the Directors of Planning from each sector agency and a representative of the Planning Council, was instructed to serve as a consultative body to the coordinating committee described under item a. above. This Technical Commission reviewed individual studies as they were written. When each expert terminated his specific study it was translated into Spanish, when necessary, and copies distributed to the members of the Commission plus representatives of any other agency with an interest in the particular subject matter. A meeting of the Commission with the author of the study present was then convoked and the paper critiqued, with the author providing such explanations as were called for. Based on this discussion, the expert was then given an opportunity to revise his paper to the extent that he wished to do so.

2. Availability of Analytical and Background Material

For use by the various consultants, a collection of over 250 documents (previous studies, project papers, statistical collections, etc.) dealing with the Honduran agricultural sector was assembled and classified by subject matter. It is interesting to note that there is no single topic dealt with in the Assessment on which there did not exist a previous and more or less recent study. The emphasis in this collection of materials was, to a considerable extent, on diagnostic analysis as opposed to operational studies, i.e., attempts to understand and define problems and constraints, but little on what to do about them, except in a very general way. This suggests that with the completion of the

current Assessment, the emphasis on undertaking new studies should be placed on work which has fairly direct operational implications.

Material of a data base nature is generally inadequate, irrespective of whether one is dealing with credit flows, crop production, land classification or any other factor. There is, and will continue to be, a need for increased attention and additional resources to be devoted to improving this situation. In this connection, a significant forward step was taken in the context of the Assessment exercise. In 1976 a baseline survey dealing with the 1975 crop year was carried out by the American Technical Assistance Corporation (ATAC) with A.I.D. financing for 1,086 small farms and 228 agrarian reform group farms. However, it covered only 3 of the 6 principal agricultural regions of the country. As part of the Assessment, the survey was replicated for 987 small farms in the remaining 3 regions and the data from the two surveys combined into one matrix. Thus, there is now baseline farm-level data coverage for the entire country.

An examination of the so-called 4 volume "Tripartite Report" (the IBRD/IDB/AID "Study of the Rural/Agricultural Sector in Honduras") indicates that there is a high level of complementarity between the findings of the two assessments. There is perhaps somewhat more emphasis in the A.I.D. document on GOH policy issues and somewhat more emphasis on the external donor role in the Tripartite Report. Also, since drafts of the Tripartite Report were available to the experts working on the Assessment, it permitted them to go somewhat deeper into certain matters covered by both documents.

3. Conceptual Framework of the Assessment

As was indicated in the PID, this assessment was conceived of and executed as an Agricultural Sector rather than a Rural Development Assessment. This approach led to the exclusion from the Assessment of many areas of concern as regards improving the quality of life of the rural population, e.g., health and formal education services, as well as the non-agricultural rural productive and service activities. This is not to be taken as reflecting an attitude that non-agricultural production related matters are of lesser importance. The decision was simply a consequence of one of the primary uses of the document, i.e., the formulation of a Sector Program which would primarily be concerned with ways and means to improve income levels of the rural poor engaged in agricultural pursuits.

In formulating policy issues and/or in making recommendations from among alternative courses of action designed to improve the income levels of the rural poor, three key assumptions were made. These are as follows:

a. That it was probable and desirable that Honduras continue to develop as a mixed public/private economy, but that the state could be more effective if it placed more dependence for operations on the private

sector, attempting itself to act as a promoter and catalyst (incentives, support, regulation).

b. That it was desirable and, indeed, necessary to proceed with a strong agrarian reform program, but that this policy must not be allowed to lead to continued neglect of the small and medium independent farmer.

c. That it was desirable to reverse the current trend of examining and conceiving of policies, actions and/or programs as more or less fixed and independent entities and instrad to use more of a system approach in these matters and within such a framework to experiment with multiple solutions to any given problem.

4. Organization of Sector Assessment

The April, 1977 Bureau for Latin America Document, "Agricultural Sector Assessment Guidelines," provides for a simplified approach to the exercise, with a primary focus on development of an A.I.D. Program Strategy (i.e., 4 major sections: Analytical Description of the Agricultural Sector; Target Group Analysis; Constraint Analysis; and Program Strategy). All of these topics are dealt with in this Assessment. The analytical description of the sector is contained in Chapters IV, V, VI and VII under the headings of Macro-Economic Framework; Sector Resources and Constraints; Production Factors and Constraints; and Production Targets, Trends and Prospects for Product Groups and Related Constraints. These chapters, as the titles imply, deal with constraints both from a general sector-wide viewpoint and also with specific reference to the A.I.D. Target Groups.

The constraints relating to the target sub-groups are restated and -- in some cases expanded -- in Chapter VIII, "Target Group Analysis, Profiles and Related Constraints" where, as the title indicates, the target group analysis called for in the Guidelines is also covered.

Program Strategy, as required, is treated in Chapter IX. There is also a closely related -- and in the case of Honduras -- important preceding chapter on "External Assistance" where the role of donors generally and that of A.I.D. in relation to other donors is examined. Finally, there is a major chapter II, entitled "Overall Conclusions and Strategies for Developing the Sector" where it is attempted to bring together and focus GOH attention on a series of critical policy and strategy issues which surface repeatedly in the remainder of the Assessment.

The reason for taking this somewhat broader approach derives, of course, from the multiple purposes which the Assessment was designed to achieve.

5. Treatment of A.I.D. Program Strategy

This portion of the Assessment deals primarily with two topics: (1) the objectives which AID should be seeking to achieve in its program in Honduras, including some discussion of limiting factors; and (2) potential activity areas for AID support grouped into 7 categories (Human Resource Development; Organizational Improvement; Technology Development Adaptation and Delivery; Agricultural Research; Small Farmer Infrastructure; Auto-Consumption Nutrition Improvement; and Credit) and indicates which of the activities are underway and are recommended for continuation; which are new activities and of these which would be dealt with in the context of Sector Program II; and which are ideas for still later study and consideration.

6. Nutrition

After the Assessment was completed in draft it was believed desirable to test its conclusions from the standpoint of impact on the nutritional status and prospects of the nutritionally at risk population. Mr. George V. Poynor was contracted for this "assessment" of the Assessment. His report is attached as Annex Q.

Mr. Poynor finds that Honduras faces serious nutritional problems; that the main casual factor is low income; that inflation is worsening the nutritional prospects of both urban and rural poor; that the rural population at risk nutritionally corresponds quite precisely to the target group identified for AID assistance; and that both GOH policies and AID program strategies, if successfully implemented, will have a significant and beneficial effect on the nutritional status of the population. In the light of the above findings, no attempt was made to reconsider and/or revise any of the Chapters of the Assessment from the standpoint of nutrition.

7. Developments Consequent to the Assessment Exercise

Neither the Mission nor the GOH has regarded the undertaking of the Assessment as a static exercise. Rather, as opportunities have presented themselves to utilize insights or information developed as the work proceeded, these have been acted upon. Three examples of this procedure are as follows:

a. One of the background study papers dealing with regional planning was utilized in developing instructions from the Ministry of Natural Resources' Sector Planning Office to the 7 Regional Directors.

b. It was decided between the GOH and the USAID that a portion of Sector Loan I (522-T-025) funds should be reprogrammed, since funds available for credit were moving more slowly than originally programmed. In the reprogramming exercise, provision was made for initiating action

in several of the highest priority areas where the need had been identified in the development of the Assessment, e.g., amplifying the out-of-country training program to cover the needs of the University, of Campesino Organizations and others; creating regional offices for the BNF; supporting a secretariat for an expanded Agricultural Policy Commission (CPA), commissioning a study for a new policy oriented marketing entity; providing short courses for personnel of the new marketing institute, IHMA; experimenting with mobile credit teams; technical assistance in regional planning, for a study of DIFOCOOP and for initiating a program for maintenance work on access roads. All of these activities are candidates for funding under Sector Loan II since most of them will require additional support over and above what was provided under the Sector Loan I reprogramming. However, at least 18 months of time has been gained in getting started.

c. Without waiting for a final version of the Assessment, the ministerial level Agricultural Policy Commission (CPA) instructed its secretariat to utilize the Consultant's draft of the assessment and develop an Issues Paper for its consideration in providing guidelines for the National Planning Agency to use in beginning work on the 1978-1983 Five Year Plan. This Issues Paper has now been drafted and is being discussed by the CPA.

II. SUMMARY

The economy of Honduras is predominantly agricultural (33% of GDP, 75% of exports, 68.6% of the population). Despite relatively abundant agricultural resources, economic growth has consistently been the lowest of all Central American countries (2.4% average growth in real GDP for the 1972-76 period). There are indications, however, that the economy may have turned a corner in 1976 when GDP increased 6% over 1975, the highest annual increase in a decade. The GOH hopes to maintain the impetus and to spread the economic benefits to disadvantaged rural Hondurans, largely by means of dramatically increased public sector investment. This is planned to reach U.S.$288.8 million annually in 1976-83, almost a ten-fold increase over the average for 1960-75, with agriculture receiving 40.4% of the total as compared to 4.2% in the prior period.

The land base presents no constraint to development. Approximately 83% of total land area is best suited for forest or grazing. Forestry products and livestock are two potential growth areas for the sector. Both are receiving priority treatment in investment plans. Of the remaining land, only about one-third of that suitable for annual crops and one-fourth of the potential for perennial crops are being utilized. The unutilized land includes some of the better land in the country. The reasons for this underutilization in a situation where there are large numbers of landless rural laborers and small farmers suffering from a land constraint are many and complex. They include lack of access roads and other infrastructure, land tenure arrangements, culture and tradition, and health problems in lowland areas. The result is that there is a concentration of farm population in areas of relatively low land quality.

Water utilization for agriculture is a serious constraint. There is ample rainfall, surface water supplies, and ground water potential. Unfortunately, spatial and chronological distribution is not uniform: many zones with lower unit water yields correspond to areas of high population and water demand; furthermore, there are often sizeable fluctuations within the rainy period causing dry spells of a month or more during the growing season for most rain-fed crops. Development of irrigation and drainage facilities is high priority, but cannot proceed very rapidly due to institutional weaknesses.

Honduras produces a wide variety of both food and industrial crops and has potential for further diversifying its production, especially for export. However, in 1976 only five commodities generated 83.9% of the total value added by the sector: bananas, coffee and corn generated 55%; livestock contributed 16.4%; and forestry was responsible for 12.5%.

The rural population is composed of approximately 346,000 families. For purposes of analysis, it is useful to classify these families into 4

major categories: commercial private farms, including the large multinational plantations; agrarian reform farms; small traditional farms; and the landless labor force. These groupings do not correspond to clean-cut lines of demarcation, e.g., some traditional farmers produce in substantial degree for the market, and some agrarian reform initiated production units are organized and operate on a commercial agriculture basis. However, each play somewhat distinct roles in the economy and each has its own problems and opportunities.

Using somewhat arbitrary land size proxies, related to income level, to distinguish between commercial and traditional farms, i.e., from 1 to 35 hectares and over 35 hectares; and also including farm families with less than one hectare of land in the landless labor grouping (again on an income basis, since these families obtain two-thirds of their income from off-farm sources), it is found that the largest group is landless labor, 153,207 families equivalent to 44.3% of the total; followed by the traditional farmers: 149,104 families or 43.1%; agrarian reform unit families, 32,165 or 9.3%; and commercial farmers 11,512 representing 3.3%. Average incomes have been measured or estimated for the traditional sector (average per capita U.S.$135, within a range of $83 to $260 depending on farm size); for the reform sector (average per capita $106); and the landless (average per capita $50 to $63).

In terms of the numbers of farms and the percentage of farm land available to each group (using the above definitions) it is found that the traditional farmers constitute 76.3% of the farm units and have control of 36% of the farm land; the agrarian reform group farms represent 0.5% of all farms and control 6.0% of all farm land; the commercial farm units constitute 5.9% and control 57.2% of the farm land.

LAND DISTRIBUTION BY FARM GROUP SIZES INCLUDING AGRARIAN REFORM GROUPS AND LANDLESS LABOR - 1974

GROUP SIZE (Has.)	No. of Farms	% of Total	Area	% of Total	No. of Families	% of Total
Landless Labor	0	0	0	0	119,433 1/	34.5
Less than 1 ha.	33,774	17.3	21,534	0.8	33,774	9.8
Total Landless group	33,774	17.3	21,534	0.8	153,207	44.3
From 1 to 35 has. 2/	149,104	76.3	955,862	36.0	149,104	43.1
Agrarian Reform Groups 3/	907	0.5	158,392	6.0	32,165	9.3
35 has. and up 2/	11,512	5.9	1,519,308	57.2	11,512	3.3
TOTAL	195,297	100.0	2,655,096	100.0	345,988	100.0

Sources: (1) 1974 Agricultural Census; (2) 1974 Population Census; and (3). Instituto Nacional Agrario

1/ Derived from the 1974 population census, by dividing rural population by 6 (averaged family size) and subtracting the number of farm families from the total. Includes employees and laborers on commercial farms, e.g., banana company plantations.

2/ Figures interpolated from Agricultural Census data for farms in the 20 to 50 hectare grouping.

3/ Agrarian Reform Groups as of September 1977.

As might be expected, the commercial farms produce most of the industrial, export-oriented items (bananas, sugar, cotton). The traditional and reform sectors produce the basic food crops, i.e., most of the corn, rice, sorghum and beans. Cattle and coffee are produced by both the commercial and traditional sub-sectors, but not by the reformed sub-sector. Since access to private banking credit appears to be related very closely to export products, one consequence of these relationships between farm size and type of crop is that the traditional farmer does not get credit from this source, except in the case of coffee. Agricultural credit from the public sector bank represents only a small percentage (22% in 1976) of total agricultural credit. Proportionately, in terms of coverage of each sub-sector though not in absolute terms, a large share of these funds go to the reformed sector. 1/ The net result is that the traditional sector has access to very little credit, except possibly from non-institutional sources.

Another significant distinction among the three sub-sectors concerns the provision of government services, e.g., extension, farmer training programs, access to machinery pools. While difficult to quantify, all observers agree that the bulk of these resources are devoted to assisting the reformed sector.

The net effect of these various factors on the food situation is not promising. While there have been no significant shortages to date (malnutrition is primarily a result of skewed income distribution rather than supply) with regard to two basic products, corn and beans, over the 1972-1975 period domestic demand was estimated to be growing at an annual rate of 4.1% and 3.7%, respectively. Production during that period increased at a rate of 0.3% and 2.3%, respectively.

The bulk of these basic grains (well over 50%) is produced by farms ranging in size from 3 to 35 hectares. This component of the traditional sector (53.8% of the farms in this category) uses only about 8% of the value of all inputs (fertilizer, improved seed, pesticides, etc.). Per hectare yields are low. There is little or no technical assistance and not much credit. Storage and marketing facilities available to these farms are also inadequate, giving rise to serious post-harvest losses. If future deficits of basic food grains are to be avoided, this group of farmers must be assisted to modernize their operations and their access to markets.

1/ Data on amounts loaned by sub-sector are not available. However, data on number of loans made in 1976 shows that the traditional sub-sector received 73.3% of the loans, corresponding to a coverage of 9.6% of this sub-sector. This compares with a coverage of 72.4% and 16.4% of the agrarian reform and commercial sub-sectors, respectively.

The net effect of the previously described factors of land base, credit, and technical assistance is even less favorable for the remaining sub-sector of the traditional farm group, i.e., the farmers with 1 to 3 hectares. They suffer the same constraints as the 3 to 35 hectare farms and they also use their land mostly for basic grains. Unless they can be assisted to shift to more profitable types of cultivation, and/or can have their land base improved via the agrarian reform process, they have no chance of rising out of the poverty category.

The third potential target group for AID assistance is agrarian reform group farm production units. This is the category on which most of current AID assistance is concentrated; it is also the group which is accorded highest priority by the GOH for public sector services. Consequently, in a relative sense, these units do receive technical assistance and do have access to credit. The constraint here is in the quality, timeliness, appropriateness, and continuity of the assistance. Managing a group farming enterprise is a complex endeavor, at best; when the "managers" are illiterate or semi-literate, have no previous experience with even simple bookkeeping, and have a tradition of producing for consumption rather than for profit, the complexities multiply. This sub-sector needs to have a tailor-made type of assistance, especially designed to deal with its very special problems and which covers the entire range of production, marketing and management factors, on an operational basis. This requirement, particularly for effective management of farm operations, is not being satisfied at present although a start has been made by addressing some aspects of the problem through the Farm Planning Advisory Group and the Agricultural Cooperatives Project.

The following section of this Assessment, "Overall Conclusions and Strategies for Developing the Agricultural Sector" summarizes the findings of an examination of interrelated factors that have a bearing on solutions to the above problems. These findings are couched in policy terms and, in some instances, present alternatives to current strategies for the GOH to consider.

The situation with regard to external assistance was also examined in some detail. Here it was concluded that, from a quantitative standpoint, external financing is not a constraint on development of the agricultural sector. It was also found that, excluding assistance to the forestry sub-sector which receives over 40% of total external assistance, over half of the remaining financing was for activities related to the agrarian reform sub-sector. Finally, it became apparent from study of this topic and the analysis of the Government's capacity in an organizational sense, that the GOH would be hard-pressed to absorb the available amount of external assistance in an efficient and effective manner.

Taking into account this combination of: (1) priority target groups, and the opportunities and constraints relating to them; (2) the broad range of policy/strategy issues--many of which are matters where outside

assistance is not called for; and (3) the overall external assistance situation, the question was posed of where AID assistance could be most usefully concentrated over the next 5 years or so.

The conclusion was that: (1) AID support in the area of Human Resources Development, Organizational Improvement, Small Farmer Infrastructure, and Intermediate Technology should be continued and expanded, but with significant changes in the composition of the activities under each of these headings; (2) that provision of new funds for credit programs should be held in abeyance pending reorganization of the National Development Bank; (3) that a major input in the area of agricultural research should be considered; and (4) that efforts to upgrade the nutritional status of the target group should be initiated. Running through all of these areas is an emphasis on improvement of delivery systems for providing services and other assistance to the target groups.

1. Human Resources Development - The lack of adequate numbers of properly trained and oriented personnel is probably the most serious limiting factor in improving the situation of the several target groups. There is simply no substitute for a critical mass of competent people in policy, planning, management, and technician training positions. Without such a cadre, supported by middle-level operational personnel, it is simply not possible to move substantial amounts of resources to target group beneficiaries in an effective fashion.

The assessment found that there has been considerable improvement in the supply/demand situation insofar as facilities for producing middle-level manpower was concerned. However, specialized personnel, it was found, would continue to be in short supply for some time. This translates into a need for out-of-country training, including post-graduate courses. AID has been assisting in this regard. It is believed that such assistance should continue and be expanded.

Over time, of course, there should be less dependence on out-of-country training and more use of in-country facilities to produce the specialized personnel needed for high level and other cadres. The assessment found that there were problems with the quality of instruction, especially at the University level. A.I.D. assistance to the National University's Agricultural School (CURLA) is desirable.

It was also found that the GOH and private sector entities were expending a considerable amount of enery on programs designed to reach rural women, but that the many agencies involved had no common focus for their effort; that the field workers were inadequately prepared for their task; and that there was little knowledge of what back-up support was or was not available. It is believed that AID could make a useful contribution here and that a relatively small amount of effort and resources might pay large dividends over the long term.

Two other components of the human resources development situation were examined; in-service training and farmer training. Both types of activity are in a lamentable state at present.

With regard to in-service training, the Ministry of Natural Resources is developing plans that may improve the situation for that agency. For the sector as a whole, however, this is not the case. It is not clear at this time whether a direct AID input would be useful, but it is believed that the possibility should be kept open.

Non-formal education programs for farmers are currently being undertaken by at least 11 public sector agencies and 3 private agencies. Many of these efforts are directed at the agrarian reform group farms. The result, as might be expected, is a great deal of confusion as to priorities, sequence of and relationship between the content of one program and another. It is not clear at this time whether a direct AID input would be useful, but again, it is believed that the possibility should be kept open.

2. Organizational Improvement - Institutional development is a term that does not currently enjoy the favor it did some years ago. Nevertheless, even if cadres are trained and the resources available, those human and other resources cannot be brought effectively to bear on improving the situation of target groups without suitable institutions through which to operate. In this connection, the Assessment found that over the past eight years, the organization of the public agricultural sector has evolved in response to crisis situations as they occurred, employing partial solutions, creating special agencies and/or program authorities to deal with specific problems. Throughout this period the institutional organization has not been systematically aligned with the needs of the National Development Plan nor with the realities of agricultural development. The sector is characterized by complex but inadequate mechanisms for coordination of programs and by operational plans which are ahead of the organizational capacity and human resources capabilities of the sector institutions. Also lacking is an effective sector-wide system for policy analysis, planning, budgeting and evaluation.

The GOH is conscious of the importance of the problem and, with AID assistance, has already taken some steps towards improving matters. The first was a major reorganization of the Ministry of Natural Resources which was the result of an AID-financed study three years ago and which is in the process of being implemented with AID assistance. The second was a parallel effort directed at a reorganization of the National Development Bank. Here the study phase, again financed by AID, is just terminating and the implementation phase is about to begin. It is crucial to the sector that this reorganization be implemented rapidly and completely. Third, an experimental attempt at providing sector-wide leadership in a collective fashion under the aegis of the Agricultural Policy Committee

is underway, again with AID assistance.

While all of the above are promising initiatives, a great deal remains to be done, and there will be a need for continuing external assistance for a long time. Specifically, it is believed that AID should continue and, where indicated, expand its assistance to:

a. Entities and units within agencies concerned with planning, budgeting and coordination at the sector-wide, individual agency and regional levels.

b. The reorganized National Development Bank (which is to be transformed into a National Agricultural Bank) in the administration of its credit programs.

In addition, there are several other priority areas for assistance in the field of organizational improvement which should be considered by AID. These are as follows:

a. The initiation of studies leading to a reorganization of the Agrarian Reform Agency (INA) along the same lines as the assistance previously provided to the MNR and currently to the BNF. Along with the MNR and the BNF, it constitutes one of the key agencies upon which development of the sector rests. Unless and until its operational policies and organizational arrangements for carrying out those policies are clarified and its execution ability is improved, its operations are not likely to have the desired effect on the development of the sector.

b. As was indicated earlier, both the agrarian reform group farm sub-sector and the traditional farmer sub-sector are in need of organizational arrangements through which needed services and inputs can be provided, and which are designed to cope with each category's special problems and opportunities. These arrangements, or delivery systems, must also be designed so that they can achieve impact in terms of greatly expanded coverage. In this connection, consideration should be given to the use of paid para-professionals and the training of volunteer campesinos. The Assessment has attempted to analyze this situation and has come to tentative conclusions as to the most feasible mechanisms to satisfy the need. If these conclusions are put into practice, external assistance will be required. AID should consider supplying help in this area.

c. The Assessment also found that a major constraint affecting all potential target groups was the inadequacy of marketing systems. On analyzing the nature of the constraint, it was found that there is no policy-oriented marketing entity in the Ministry of Natural Resources or elsewhere in the sector. It needs to be created. Also, as a consequence of the reorganization of the National Development Bank, a decree-law has been signed establishing a new National Marketing Institute designed initially to operate a grain price stabilization program. It needs assist-

ance. Third, there is need for a program to control post-harvest losses, which will involve coordinating the activities of many agencies and private sector enterprises concerned with storage, transport and marketing. Here again, organizational improvement will be the key to success. Fourth, in order to ameliorate the marketing constraint, development of vertically integrated production-processing-export possibilities is required. Creation of an organizational capacity to continue GOH focus on the problem is indicated.

Finally, there is a need to improve the effectiveness of key Honduran institutions involved in selected areas of water management.

3. Small Farmer Infrastructure - The Assessment found that lack of such infrastructure items as access roads and local storage and other marketing facilities were a serious constraint to target group development. It also found that such investment as is undertaken in this regard is not well coordinated with technical assistance, availability of inputs, credit, and other production factors. Finally, it found that planning for infrastructure investment is undertaken at the center, on a national basis, rather than from the bottom-up, at the regional or sub-regional level, with local participation of potential beneficiaries. Examining these interrelationships and taking into account the GOH's expressed desire to improve its regional planning, it was believed that it might be useful to introduce the concept of integrated agricultural infrastructure investment packages to be developed on a zonal basis as a major element in regional planning. It is also proposed that one way in which AID could assist in translating such a concept into a reality would be to participate in the financing of a fund against which regional offices could draw for approved investment packages which met pre-set criteria.

4. Nutrition Improvements on the Farm - Several attempts have been made in the past--and there are some minor on-going activities--designed to assist the small farmer in producing a more abundant and varied set of foods for his own use, e.g., the family vegetable garden. Other related programs, usually on a small scale, have involved chicken and rabbit production and similar activities. Many of these programs have had limited success because of the need for individual technical assistance and supplementary inputs. One possible supplementary action which might build on existing facilities and avoid some of the problems in previous projects would be to develop the tree nurseries that exist in each of the 7 regional offices of the MNR to a point where they could provide, on a grant basis, a suitable package of food tree seedlings to large numbers of small farmers. The costs would not be great; the implementation relatively simple; and the potential benefits quite large.

5. Agricultural Research - For any delivery system to produce results it has to have something to deliver. Properly oriented research can provide suitable technology packages for target group use. The GOH is attempting

to organize its agricultural research to this end. While the GOH will be receiving assistance in this area from non-AID sources, there is also a need for an AID input.

6. Technology Development Adaptation and Delivery - AID is already involved in financing development work in light capital technology for farming operations. Efforts in this area should be closely linked to agronomic and other agricultural research. There is a need to strengthen and expand the production and distribution elements of the program with the objective of achieving significant impact on the target group. Considerable attention is being given to alternative means of achieving this objective, but there is no agreed upon course of action as yet.

III. OVERALL CONCLUSIONS AND STRATEGIES FOR DEVELOPING THE AGRICULTURAL SECTOR

1. Objectives - The 1974-78 GOH Development Plan sets forth nine global objectives, 1/ the first four of which deal with social progress 2/ and the latter five with economic progress. 3/ The agricultural and livestock sub-sector, the fisheries sub-sector, and the forestry sub-sector, each have their own set of objectives. For the first two, the initial objective is to increase production. In the case of forestry, the first objective (since accomplished) is to acquire state control of forestry resources. There is, however, no indication that the order of listing is equivalent to priority. On the contrary, there is ample recognition, both in the Plan document and in government circles of the inherent interrelationships and inter-dependencies of the various objectives as well as of potential conflicts amongst them. The GOH does not, at this time, envisage any major changes in objectives in the new five year plan and none are recommended since they provide a suitable basis from which to consider strategy alternatives.

2. General Strategy Considerations - The central thrust of GOH strategy for the agricultural sector during the past four years, i.e., the principal consideration around which individual strategy decisions have been taken, has been implementation of the agrarian reform. This has come about as a response to political factors, but also corresponds to a strongly held belief that the present land tenure situation is the major impediment to economic and social development. For all practical purposes, and with the exception of special programs like COHDEFOR, the agrarian reform program is the sole instrument being used to promote rural employment, achieve increased production of basic grains, and diversify production into new crops, e.g., citrus and African palm. There has perhaps been in-

1/ Plan Nacional de Desarrollo 1974-78, Tomo I, pg. 33.

2/ Ibid: "To ensure each person a level of income adequate to basic needs; to progressively diminish the level of unemployment and under-employment; to improve the quality of life of the population, especially in rural areas; and to achieve a more equitable distribution of income and of the factors of production."

3/ Ibid: "To secure for the country the maximum benefit from the value added in the process of production; to rationalize the exploitation of natural resources so as to assure their perpetual and continuous use and to obtain from them the maximum benefit for the Honduran community; to transform the structure of production, diversifying same and progressively increasing in sustained fashion national output; to broaden and modernize industry so as to permit the transformation of exportable primary commodities into finished or semi-elaborated products; and to strengthen the position of the economy to withstand changes in the international market."

sufficient recognition of the potential increased productivity, employment creation and income distribution benefits that can be achieved through private farm operators, both large and small. There has also been a certain lack of realism concerning the time frame in which agrarian reform efforts can be expected to produce results in terms of production.

The current priority emphasis on the Agrarian Reform is appropriate and it appears that the pace of land affectation actions needs to be quickened if the initial goals are to be met. However, it also seems desirable to complement concern with this aspect of agricultural development with more consideration to the needs of the private sector, especially the small farm sub-sector, and to increased production when making specific strategy decisions which have implications for the use of national resources. What is recommended is a new emphasis and priority for the traditional small farm sub-sector, recognizing that there are other legitimate concerns in the sector which must be attended to while the agrarian reform process unfolds.

Throughout this assessment many new and revised strategies are discussed as well as many suggested improvement actions. Not all needs can be satisfied concurrently nor in the magnitudes implied. Priority for action and allocation of resources ideally can be made once comprehensive and specific strategy decisions are made. In practice strategy deliberations are modified by the availability and quality of resources.

It is clear from the assessment that two of the major constraints, institutional capacity and human resources, inhibit action in almost all areas needing improvement. Because of the relatively long lead time involved in making broad-based change in these areas, they warrant special attention.

3. Level and Composition of Public Investment in the Sector - 1976 marked a turning point in the importance given the agricultural sector in terms of both total government expenditures (29.9% of the total for that year compared to an average of 20.7% over the preceding four years) and in terms of investment (40.4% of total planned public investment for 1976-83 as compared to an average of 4.2% in the period 1965-75). To the extent that this increase is at the expense of road construction (the transport sector shows a decrease in planned investment from 45.3% during 1965-75 to 15.5% 1976-83), some adjustment may be warranted since a strong road program is crucial to agricultural development. However, in absolute terms, the planned investment in road construction is equal to the highest level of budget execution so far achieved. Thus, if construction capability is a limiting factor, the relative decrease may be prudent.

The composition of the planned investment in the agricultural sector also merits a word of caution. Apparently, only 2.3% of the total invest-

ment programme is for technology transfer and generation.[4/] Production development is allotted 54% of the planned investment. The results expected from the latter could be less than anticipated as a consequence of insufficient attention to factors related to the efficiency with which credit and other production inputs are utilized. This issue should be examined on an urgent basis.

4. Production Strategy - The existing, de facto production strategy may be summarized as follows: -

a. Assure the minimum necessary level to meet domestic consumption and industrial needs for basic grains (corn, sorghum, rice and beans), but not to produce for export with the possible exception of beans.

b. Develop import substitution production of such items as milk and vegetable oils.

c. Promote the maximum possible increase in and diversification of other food and fiber crops and of livestock for domestic use and for export.

d. Replant denuded pine forest areas, clear-cut old stands--where necessary, replacing them with new high quality stands, while maintaining overall output on a sustained yield basis and incorporating subsistence families living in forest areas into the forest exploitation system.

e. With regard to fisheries, continue with programs already initiated or about to begin, e.g., aquaculture for shrimp and fresh water fish, improvement of artesanal fishing and domestic marketing, but proceed slowly with major investment and exploitation, while initiating needed research, human resources and organization development.

As a general production strategy, the above is believed to be quite appropriate to the Honduran situation. There are ample opportunities to include the target group in activities or policies designed to carry out this strategy. However, one possible addition to the production strategy mix might be considered, i.e., improving the quantity and quality of production primarily for small farmer on-farm consumption, e.g., family gardens, fruit trees, swine, rabbit and poultry production, etc.

All the components of the production strategy suffer, in varying degrees, from common production-related deficiencies, e.g., inadequate research effort and transmission of research results via extension; insufficient access to credit and inputs, etc. However, there are a few

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4/ There are definitional problems in the available data which need to be resolved before further analysis can be productive.

major non-production type constraints which are specific to each component and deserving of special mention. In the case of basic grains, it is believed that the present practice of minimum price supports is inappropriate and could be desirably replaced by a price stabilization program. Also, a major effort needs to be made towards decreasing post-harvest losses, especially at the farm level.

In the case of import substitution, especially dairy production, marketing and to a lesser extent processing, are probably the most difficult constraints to overcome. While in some regions production per se is the problem, some of the potentially most productive areas for expanding milk output, e.g., Olancho, are impossibly far from processing plants at present. These same constraints also apply to increasing and diversifying other crops, where they are aggravated by an essentially negative--or at best passive--approach to private investment, especially foreign investment in such things as small agro-industry. The GOH's policy vis a vis private--including foreign--investment in a wide range of agricultural sector development activities needs to be clarified and publicized.

With regard to expansion and diversification of livestock, it is believed that in low altitude areas the major emphasis should be on dual purpose bovine development and that this should be coupled with suitable land use policies. Increased swine production also merits attention.

The strategy recommended for forestry production corresponds precisely to COHDEFOR's policy. The principal constraints to carrying it out are likely to be scarcity of financial and human resources. Steps are being taken to deal with the latter. For the former, even though heavy investment will be required over the next decade, it is likely that this can be obtained insofar as industrial and physical infrastructure requirements are concerned. However, the social investment requirements associated with incorporating the large number of families now found in mountain forest areas, into the forest exploitation system in such a way that they enhance basic forest productivity over the long run, are likely to be beyond COHDEFOR's capacity to finance.

This is particularly true because COHDEFOR is expected to generate profits for government use in other sectors of the economy. It is also worth noting that aggressive market development activity will be needed, both for sale of raw material not now utilized, i.e., small sizes and poorer qualities of lumber, and for finished products.

The strategy recommended for fisheries has its origin in three major constraints to the development of this sub-sector: (1) the need for more basic information, followed by control measures based on that information, about the ocean, coastal and inland resources. At present, it is not known whether these resources are over or under-used; (2) the lack of trained personnel. It is anticipated that the need for such personnel

will at least double over the next five years; and (3) the relatively large amount of financial resources which will be needed, both in support of research and in exploitation of the potential resources.

5. Strategy for Land Use - The facts about the current status of land use are well known. The situation may be summarized as one of:

a. Large areas of potential crop lands (40-50% of all agricultural land) are either currently inaccessible, devoted to extensive grazing, or underutilized due to lack of irrigation and drainage facilities;

b. Cropping by small farmers is to a considerable extent undertaken on slopes best suited for other uses. These small traditional farmers in a great many cases are suffering from a land productivity constraint: either they are on non-farming type land or they do not have enough land;

c. There are ample opportunities and real need--both social and economic--to improve the exploitation of the land;

d. The reasons for a sizeable amount of land not being properly exploited are many and complex and range from lack of access roads to land tenure, to culture and tradition, to floods, etc.

The GOH strategy for dealing with this situation appears to be a combination of:

a. Opening up new areas, e.g., Aguán and Olancho via a combination of investment in major trunk roads plus agrarian reform settlements;

b. Moving extensive livestock operations from state owned lands suitable for cropping, e.g., Olancho, to slope lands and replacing them with agrarian reform collective farms composed largely of landless laborers; and,

c. Undertaking major irrigation/drainage/flood control projects.

All of the above steps--with perhaps some caveats--are appropriate. The problem is that they do not appear to be producing enough change, fast enough. Also, they do not deal directly with a major aspect of the land use problem, i.e., the small farmer on the hillsides. Further study of the following alternatives for supplemental action would appear to be in order:

a. Attempting to further open up agricultural frontier areas, and encourage spontaneous, but regulated migration to these areas.

b. Accelerating the pace of settlement and adjudication of land in accordance with the provisions of the Agrarian Reform Law.

c. Accepting the fact that relatively large numbers of small holders will choose to stay where they are for the indefinite future, and for those whose holdings have economic potential develop major programs to transform their operations into viable economic units to the extent possible, e.g., place more emphasis on farm-to-market roads, including jeep trails; introduce high return crops suitable to the land base, e.g., fruit orchards, intensive dairying, horticulture; implement an aggressive soil and forest conservation program, e.g., terraces, diversion ditches, and provide necessary supporting services.

d. Also indicated is the type of action being studied by COHDEFOR, i.e., conversion of subsistence farmers now living in mountain forest areas into forestry workers and their resettlement, where necessary, on more suitable sites within the work areas.

6. Agrarian Reform Strategy - The Assessment finds that the present Agrarian Reform Law provides an adequate legal basis for achievement of GOH objectives and that it contains sufficient elements of flexibility to permit carrying out an effective program in this area. A revision of the law at this time is not recommended. There are, however, serious questions as to whether or not the operational strategy being followed is appropriate to achieve the purposes of the law. While effective data on which to make precise judgements is not available it appears that:

- Many families have been settled on marginal land.

- The pace of settlement is not sufficiently dynamic to reach the goals set by the GOH; it is barely keeping pace with the annual increase in rural families.

- The majority of the groups settled outside of the 7 "Concentrated Rural Development Projects" are not receiving the support necessary to transform their land into viable economic units, nor the assistance required to give them legal title to the property.

- INA efforts are concentrated in a few areas and are concerned largely with the operational aspects of production, which consumes a disproportionate share of its budget. This may lead to lack of management attention to land affectation matters.

- The per family cost of the major projects of INA makes replicability for the rest of the reform groups and for future groups highly unlikely.

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For analytical purposes, it is useful to examine the strategy issues that flow from the above under three headings: (a) the Concentrated Rural Development Projects, (b) the rest of the existing settlements, and (c) new settlements.

a. Concentrated Rural Development Projects - The 7 active projects (Aguán, La Masica, San Manuel, Guaymas, Puerto Arturo, San Bernardo, and Monjarás-Buena Vista) are not homogenous. Some are directed colonization efforts; others (at least at this stage of their development) approximate state farms managed by INA personnel; still others are attempts to consolidate and coordinate the activities of a group of cooperatives and/or asentamientos in a given zone. All together, they represent approximately 25% of the current beneficiaries of the agrarian reform, but are absorbing a disproportionate 73% of INA's 1978 budget.

The strategy issues concerning this aspect of the agrarian reform program can be summarized as:

- Whether or not the directed colonization and "state farm" type of settlement should be used for new areas.

- With regard to the existing projects, whether or not they should continue under the present type of management arrangements. Alternatives that can be considered are to transfer this over-all management responsibility to another public sector institution, existing or new; to create area development authorities; to set up second degree cooperatives for general management and support purposes, or in some other form to begin moving these enterprises away from public sector management. Should it be resolved to make changes, it is probably desirable to consider individual solutions for each case, rather than a uniform, across-the-board approach.

b. Other Existing Settlements - Basic to any consideration of strategy for improving the situation of these groups is the issue of whether to attempt dealing with them and their problems as though they constituted just one of many forms of economic enterprise, relating to each asentamiento individually in the same fashion as government relates to any privately owned medium-sized farm unit, or whether they must be conceived of as a special sub-sector, which requires special treatment and services, different from that provided to non-agrarian reform units. In the long run, it is politically and otherwise desirable that production units created under agrarian reform authority "graduate" to an equal treatment status, with all the consequent benefits and liabilities. For some time, there seems no reasonable alternative to thinking in terms of specially created organizational arrangements, credit treatment, etc., for these groups. Nevertheless, in setting up these "special" arrangements, it is important to keep in mind the longer term objective. For example, in creating reformed sector cooperatives of various degrees,

care should be taken to leave the door open for later affiliation with non-reform group cooperative federations.

In practice today, insofar as services from public sector agencies are concerned, the reformed sub-sector is dealt with as a preferred group. However, there is a great deal of overlap, duplication and inefficiency in the public sector services provided to the reform sector production units.

In addition to efforts to improve on the current systems for delivery of services to the reform sector, consideration should be given to experimenting with alternative ways to deliver services and provide institutional development support such as reform management units, each of which could provide continuous support and services for several assigned group farms; a grant program, perhaps coupled with credit financing of a "farm plan" whereby each group farm could hire its own farm-management advisor on a part-time basis; or as fully developed in Annex A, pages 40-49, to set up--along second degree cooperative lines or their equivalent--a completely separate and, to the extent feasible, a largely non-governmental system for servicing exclusively the needs of the reformed sector. A regional, decentralized approach is recommended. This system would have to be subsidized by government and it could be under government supervision; however, insofar as services to this sub-sector are concerned, it would free up human and institutional resources to increase and improve the services to the reform as well as the non-reform sub-sector.

Much of the technical assistance and credit provided to group farms appears to be directed at production increases related to specific crops. It would appear that the immediate and longer term institutional development needs of these reform groups might be better served by focusing assistance on actions to improve farm income and increased employment.

The question of credit, especially the issue of how to deal with asentamientos behind in their debt amortization to the BNF, must be faced squarely. Neither a strategy of across-the-board forgiveness nor one of cutting off credit to asentamientos in arrears is appropriate. The former action would encourage more of the same; the latter eliminates the possibility of repayment and makes future development of the asentamiento difficult, if not impossible. Instead, the strategy should be to examine each case of default individually, dealing with each particular situation essentially as one would with a private borrower, e.g., rolling over the debt where the default was occasioned by such problems as weather conditions and the potential for new production is good; putting the asentamiento into a form of receivership where repayment potential is present, but management cannot be trusted to produce; writing off the loan as a bad debt, invoking the INA aval, denying further credit and requiring INA to take appropriate measures where the situation is not viable; partial forgiveness coupled with invoking the INA aval, where future possi-

bilities are good, but where the composition and amount of the debt structure is excessive and/or inappropriate.

For new lending, there is a need for a realistic and well publicized set of ground rules, e.g., the degree to which farm plans (and what these must consist of) will be required; whether production credit will be provided for labor of farm unit members; if so, under what conditions and in what amounts. Obviously, careful and continuing supervision is essential, even after the policies and procedures are established.

The main point being made with regard to credit to the reformed subsector is that while special treatment and credit management is required, it should neither be one of open-handedness nor of overly stiff requirements. Also, even though there can be no guarantees in the normal sense, there should be the possibility of penalty for conscious and avoidable default.

c. New Settlements - There is no question about the need and desirability of continuing the process of agrarian reform. The issues are: at what rate, e.g., should the GOH be content with keeping pace with the net growth in the number of rural families--about 5,500 per year--which is what has been achieved on a net basis over the past 5 years, or should this rate be stepped up? If so, how much? Under what arrangements should new settlements be initiated, e.g., should there continue to be as much emphasis on collective farming of agrarian reform units; should some degree of basic on-farm infrastructure be provided on a grant basis; should food during the first crop year be provided as a donation? Should some sort of minimum size criteria be established and adhered to? Without contemplating any change in the law, there is need for formulation of an operational strategy and of criteria on how to apply it covering the above and other similar matters. Also needed is a time-phased, area specific plan of action for expropriation and reclamation of public land.

d. INA Organizational Reform - The assessment suggests that a review of the organizational and administrative systems of INA, similar to that performed for the MNR several years ago and more recently for the BNF, would lead to an administrative reorganization which could improve the efficiency of land redistribution, and provide better organizational support to beneficiary families.

7. Strategy for Development of Agricultural Sector Institutions - In addition to a trend towards regionalization, there are several other tendencies worthy of note: (a) responding to specific problems and attempting to avoid confronting administrative problems endemic in the executive branch by creating new institutions and institutional arrangements, e.g., COHBANA, COHDEFOR, CPA, COCO and the proposed IHMA; (b) establishing special project authorities outside of normal organizational control, e.g., PROMYF, (usually at the instigation of international agencies);

(c) establishing roles and objectives in development and operational plans which are ahead of the organizational capacity, management and coordination systems, and human resources capabilities of sector agencies.

These trends have led to a situation where policy is often fragmented, where coordination of programs involving several institutions is difficult, and where resources, both financial and human, are inefficiently used. If the trend persists, management of the sector will become increasingly difficult. In general, the highest levels of government are aware that many of the problems in the sector are a direct or indirect result of the conditions of its institutions, and their policy, planning and management systems and human resources. More specifically, government is aware of the need for a more efficient sector-wide system for policy analysis and execution; and of a system for sector-wide planning, programming, budgeting, and budget execution control. The recent decision to amplify the functions of the CPA and provide it with an adequate secretariat is an attempt to begin to meet these needs. It is understood that the GOH regards this device as experimental.

In addition to making every effort to ensure that the expanded and strengthened CPA fulfills the role for which it is intended, the institutional development strategy should provide for developing and improving planning, programming and management systems in each of the Agricultural sector agencies at the national and regional levels, and improving the capability of agency manpower to develop, design and manage programs and projects.

8. Centralization vs. Decentralization - The present strategy of the GOH is to decentralize the activities of public agricultural agencies. This is an appropriate strategy. In this regard, it is important that all agencies for which regional structures are appropriate should organize jurisdictions on the same or compatible spatial basis; the draft regionalization law prepared by CONSUPLANE should be acted upon.

There are several concepts which need to be revised and other actions taken if a decentralized system is to become fully functional:

a. There must be recognition that a decentralized approach does not mean that the initiative, planning, control of budget execution, etc., for all types of activities should rest with regional offices. There are certain types of programs, e.g., improved seed multiplication, research, and training where the activity undertaken in a given region is only one phase of a national program which cuts across regional lines and where greater control from the center may be more appropriate.

b. Conversely, there are many other activities, e.g., extension and machinery services, where the initiative, planning, control of budget execution, etc., should be at the regional level. However, for this type of planning and budgeting to be successful, there is a need to: (1) improve the procedures for and substance of national policy, planning and budgeting guidelines transmitted to regional offices; (2) strengthen the capacity of regional offices to do professional level planning and budgeting; (3) better define and then control the degree of flexibility that regional directors should have in executing approved programs and budgets; and (4) carefully coordinate the kinds and levels of authority delegated to the Regional Directors who make up the CAR so that decentralized execution of inter-institutional programs and projects can be accomplished efficiently.

c. The concept of sub-regional planning and related zonal concentrations within regions for agricultural and directly related investment purpose, i.e., the integrated package approach, should be introduced into regional programming in order to reap the benefits expected from decentralization.

d. Procedures need to be developed to assure that decentralization of operational responsibility does not unduly impede lines of contact and supervision on a technical level between Ministry headquarters personnel and the regions.

e. Finally, consideration should be given to methods for involving the target groups or their representatives in the regional planning, design, and project execution process to assure realism and improve chances for success. This could be accomplished by public hearings on plans in the affected localities, by participation of representatives in the process of drafting plans and projects; and by advisory committees to the regional directors and the CAR.

9. Strategy to Improve Delivery of Public Services

a. General Principles - This section deals primarily with extension and related matters. Other public services are discussed in other sections. However, the general principles for providing any kind of public service should first be examined. This principle, on which all strategies for delivery of public services should be based, is for the Government to provide those services which private enterprise cannot reasonably be expected to provide. For example, farmers cannot resolve the problem of contagious, epidemic disease such as foot and mouth disease. For this and other animal diseases and pest control services government intervention is required.

The quality of crop seeds, fertilizer, pesticides, animal semen and imported breeding stock should be subject to Government regulation and

control to assure farmers that they receive the quality being paid for. The actual importation of commodities or provision of services in connection with the use of the commodities should be a concern of private enterprise, except in the case of new technology where the Government should legitimately intervene as an innovator.

Since the risks of granting credits to the rural poor are perceived by commercial banks to be unacceptably high, Government credit institutions should be able to provide the credit needed to help this category of people to improve their productivity.

Soil and water conservation and the efficient use of renewable natural resources cross private property boundaries, and so requires the intervention of Government to ensure the use of these resources to future generations.

b. Special Agriculture Inputs and Technology Transfer - With respect to the delivery of special agricultural inputs and technology transfer, the assessment found that, although there has been a significant increase in the institutional ability of the MNR to deliver these services through the regionalization of the MNR, there is concern that this effort is not yet reflected in greater agricultural production and productivity. The effectiveness of the methodology in use by change agents is questioned as is the administrative support, training and guidance of extensionists.

A strategy response, currently emphasized by the Ministry of Natural Resources, is the creation of special crop production projects which establish a semi-autonomous extension unit at the regional level to introduce an improved technology for a specific commodity. This is combined with market research, testing of production research results, the provision of special lines of credit and marketing assistance. The primary objective seems to be to increase production of specific commodities to meet national production goals even though stated objectives are to educate small farmers and increase family income.

The crop specific strategy is based on the need for crop diversification at the National Level, but tends to emphasize one crop at the farm level. This method of technology transfer does not provide farmer education in the techniques of combining resources to produce several commodities in a way that will provide the highest net income at an acceptable level of risk.

An improved strategy for delivery of public sector services would include adjustments in the Regionalization Plan to clearly define functions and interrelationships of the various administrative, research, extension, planning and services units. Expanded training for agricultural extension agents is clearly necessary. A change in the technology transfer approach to organize the work of extensionists, promoters, and credit evaluators through agricultural service centers and an expanded use of

para-professional personnel should be tested as a means to promote farmer participation and more effective delivery of technology and the means to adopt it.

10. Investment in Infrastructure in the Sector - General points which relate to the strategy for investment in infrastructure have been touched upon in the context of earlier sections of this chapter. They merit some elaboration.

First, it is believed that benefit/cost relationships will improve if planning for agriculturally related, small infrastructure investment is undertaken as a derivative of regional planning (see section 8) with a small number of zones selected in a given region and integrated packages of such investments programmed for such zones. This is contrasted to the current practice of developing and assigning priorities to individual projects on a national level.

Secondly, as regards irrigation/drainage and flood control investment, several considerations need to be taken into account: (a) only about 1/3 of planned investment in this area has been realized in recent years; (b) the capacity of the MNR unit for developing small irrigation projects is only being utilized at about 50% of its potential; (c) there are problems concerning on-farm use of water generated under recent irrigation investment (approximately 10,000 hectares have been put under irrigation; only 1/3 of the area is applying the water). This suggests strongly that over the next five years the strategy should be to: (a) improve institutional and data gathering capacity, including integrated planning, preparation of farmers, and administrative efficiency; (b) revise policies and practices with regard to the organization and role of farmers in water districts; (c) develop and put into practice a new water law; (d) invest in on-farm use of available water; (e) increase the rate of establishment of small irrigation systems, slow down the initiation of major new projects, while continuing with feasibility studies; (f) give relatively more attention to investment in drainage than to a major new irrigation works since the benefit/cost relationship is likely to be greater.

Thirdly, there seems to be capacity (with some institutional arrangements) to increase the rate of construction of farm-to-market roads, and rural jeep trails. Attention, however, needs to be given to the problem of maintenance of this type of road.

Fourthly, with regard to marketing and storage infrastructure, the immediate emphasis should be on collection point facilities and on on-farm storage facilities.

11. Human Resource Development Strategy - This topic needs to be approached from two viewpoints: (1) the requirements for professional personnel and the training and facilities needed to produce that personnel; and (2) the education needs of the rural population, especially farmer training.

As concerns professional personnel, it appears that Honduran agricultural education institutions have the capability to produce--and are likely to meet the effective demand--over the next five years for the numbers of middle level and university level professionals for whom there will be jobs. However, there are serious problems of quality, especially at the University level. Also, there will be a continuing need for more highly specialized personnel than the Honduran educational institutions can provide. Thus, the strategy should be: (1) to continue and expand the program for out-of-country training, including post-graduate degree programs; and (2) to implement the plans for development of CURLA which were recently approved by the University Council.

There has been some limited use by the MNR and other agencies of para-professional paid personnel and of volunteer auxiliaries. If new methodologies are to be devised for expanding the coverage of government services to large numbers of traditional farmers and of group farms, those methodologies will probably have to be designed to provide for substantially increased use of these types of personnel. The selection and training of such personnel should be undertaken in relation to specific projects and programs, rather than across-the-board.

Attention also needs to be given to in-service training. The MNR has what appears to be acceptable plans for improving its program in this regard, but the same cannot be said for other sector institutions.

An area of particular interest is the preparation of extension agents and other professionals whose work relates in whole or in part to rural women, e.g., Clubes de Amas de Casa, and training of village level promoters. There are many agencies, public and private, involved in this type of activity, but they lack a common philosophy, a common set of goals, an understanding of what back-up facilities are available, etc. Consideration might be given to a training program, administered by the MNR which would be open to personnel from all entities, public and private, who are working with rural women. CURLA, which has a large enrollment of women, could be involved in research and preparation of course material and in the provision of instructional staff, supervisory follow-up personnel, etc.

The situation with regard to farmer training is very disturbing. No fewer than 11 GOH dependencies and 3 private organizations are active in this area. Large amounts of resources are being employed. While some

individual programs may be well conceived and operated, when looked at as a system the results are minimal. There is duplication, repetition, discontinuity of effort, irrelevance of subject matter and conflicts between delivery systems. Furthermore, a very large part of the effort (of all 11 agencies) is concentrated on one sub-sector, the beneficiaries of the Agrarian Reform, with the bulk of the rural population neglected. As a first step, the CPA should provide leadership to delineate topically, and geographically the areas of non-formal education activity to be performed by the several agencies in this field, including possibly the consolidation and re-assignment of some programs. The amount and sequence of training offered in a specific geographic area should be developed at the local level with participation by the end users in identification of the subject matter they wish to absorb.

Consideration should be given to capitalize on the apparently successful results of INFOP in farmer training. The current and potentially increased role of private sector institutions such as Campesino Federations, FACACH, ACPH should also be explored. Over the long run, considerations should be given to what role the UNAH may perform in this area, particularly in training trainers.

12. Provision of Credit - The strategy now being followed to satisfy the needs of medium and large size private farms and of commercial crop oriented cooperatives--i.e., a combination of rediscount lines from the Central Bank through the private banking system plus recourse to direct foreign credit sources, without intervention of the national banking system--appears to be working reasonably well. Also, there are indications that while production credit is generally available, the same may not be true for investment credit.

The difficulty and high cost of making large numbers of small loans to Agrarian Reform and traditional sector small farmers, effectively requires that the BNF rather than the private banking system carry the major responsibility to provide credit for these target groups. Presently, the Bank is in the process of undergoing a major reform which involves the shedding of many of its functions (e.g., the grain stabilization program, inputs marketing) so that it can concentrate its efforts on agricultural credit policy and operations. Several regional offices will be created to provide closer supervision of branches and to facilitate the decentralization of administrative and credit review procedures. Mobile units will also be created to promote the Bank's credit programs and to assist in the preparation of loan applications made in the field. A law was signed February 1978 to create a new national marketing institute that will remove responsibility for the grain price stabilization program from the BNF. There is, however, still a significant number of actions which are necessary pre-conditions to the Bank becoming a viable agency for development of the sector. These actions are known and agreed upon in principle. What is urgently required is implementation.

The credit strategy suggested with regard to the reformed sub-sector has already been discussed. However, one more point needs to be made. The government must be prepared to protect the capital of the BNF as regards credit going to this sub-sector. This could be done by trust fund or effective aval or capital contribution mechanisms which would counter-balance the excessive levels of risk which can exist in the initial stages of establishment of agrarian reform units. It is emphasized that such a policy should be accompanied by the kinds of credit management procedures described earlier, including also arrangements to collect on loans from harvest proceeds.

The sub-sector which presents the major problem is that of the small, independent farmer. Credit in appropriate amounts and on a timely basis is simply not reaching these people. Here, the strategy recommended has several discrete but complementary aspects:

a) The BNF must continue to play a major role and, in the context of the reorganization now contemplated, it should experiment further with such devices as simplified procedures and applications for loans, group lending and use of mobile units, operating from local agencies which go to the villages to receive and help prepare loan applications and later deliver funds to borrowers in the villages. Credit education for target group farmers to improve mutual understanding between clients and bank personnel is needed. Simplification of the bank application, approval, disbursement and collection procedures is essential to provide credit on a timely basis at acceptable cost. In particular, it is suggested that small loans, perhaps below the L 2,000 level, be disbursed in one payment in contrast to present practice which makes several disbursements, each one accompanied by an inspection visit. The Bank should be permitted to collect a service charge to cover the costs of operating efficiently with this sub-sector.

b) The array of institutional devices used to reach this sub-sector should be broadened. For example, selected cooperative federations such as FACACH should be encouraged to operate as credit wholesalers and given appropriate support, e.g., the BNF and/or other banks should provide funds to such entities in more or less automatic fashion, at a very small margin over the cost of the money to the lender and for relatively long periods.

c) Consideration should be given to the design of a program to encourage rural savings in order to achieve greater development through self-financing rather than exclusive reliance on credit.

d) The BNF should address seriously methods of extending credit to women for agricultural investments and production and for small household agro-industry development. Consequently, Bank policies that currently result in restricting credit to women directly, e.g., the requirement that loan applications have a male signator, should be eliminated.

e) The Central Bank should continue to experiment with potential private banking system involvement through its Small Farmer Credit Rediscount line and similar devices.

Finally, the subject of non-institutional credit needs to be studied to determine whether, and if the answer is affirmative, how the banking system can tap into these channels, so as to move more funds to the small farmer through the intermediaries now handling non-institutional credit. Such a study should cover both the lenders who deal directly with the small farmer, e.g., village merchants and truckers, and the lenders who provide financing to the truckers and other intermediaries.

13. Marketing and Pricing Strategy - As indicated earlier, marketing is a major constraint to the development of the sector. In developing a strategy to overcome this constraint, certain of the more general strategies discussed above should be kept in mind, i.e., the policy with regard to private investment, the role of the state in provision of services, and investment in infrastructure. With this caveat, it is believed that the current strategy to tackle marketing constraints on a product-by-product basis as one element of a systems approach is basically sound. There also appears to be a propitious environment for the use of cooperatives as instruments to develop marketing services. Advantage should be taken of this tendency and alternative methods should be the subject of active exploration. Also, it is believed that there should be experimentation with quasi-cooperative entities, e.g., collection points with cooling facilities for fluid milk pick-up.

Thought might also be given to developing pre-feasibility or even feasibility plans for site-specific small agro-industries and then attempting to find private investors with the requisite technological and marketing skills to execute the plans.

Third, some attention needs to be given to ways and means of making the traditional intermediaries, e.g., truckers, more efficient.

Finally, it is recommended that if the GOH wants to make a serious effort to deal with marketing constraints, it probably should establish a capability within the Government to accept the responsibility for overall policy formulation and for investigation, establishment of control norms and promotion activities related to this subject.

The situation with regard to the related subject of price policy and marketing of basic grains may be described as one in which: (a) the responsible agency, presently the Basic Grains Division of the BNF, and the Basic Grains Commission, attempts to not only manage a price stabilization program, but also one for support prices, neither of which is producing the desired results; (b) the program does not operate in the entire grains market, but limits its sales to BANASUPRO, public sector agencies,

non-profit entities and industrial users; (c) the management of the program is subjected to onerous controls and dependency on outside entities or other BNF departments, e.g., Banco Central for financial matters, central accounting department of BNF for management data; (d) neither the general public, the producers, nor the marketers understand the way in which the Basic Grains Commission arrives at its policy and action decisions. The net result is a program which in recent years has required heavy subsidy (mostly at the expense of BNF capital) and which is not reaching its objectives.

A long overdue first corrective step has been taken, i.e., to create an autonomous government marketing agency, the Instituto Hondureño de Mercadeo Agrícola (IHMA). In this connection, it is suggested that:

a) IHMA's purpose be fixed as primarily one of price stabilization of basic grains to ensure that there is an adequate supply of these products available at all times, whether from domestic production or imports. The rationale for this recommendation is that the Institute's present physical and--to a large extent--financial resources are adequate to operate a price stabilization program; sizeable increases in resources would be needed for effective operation of a price support program.

b) The operations to be executed by the IHMA should be designed to meet the following criteria: (i) the basis on which it buys and sells, imports or exports, sets its prices, etc., should be as "mechanistic" as possible (i.e., removed from subjective judgement) and should be widely publicized; (ii) it should operate in the entire basic grains market.

In order to perform efficiently as a price stabilization agency, it should have an administrative system which facilitates its commercial operations and provides maximum protection of grain in storage. It must have access to up-to-date and reliable information on crop forecasting and on the domestic and international demand/supply/price situation. It does not have to gather the data itself. Finally, it must be efficient in its physical operations, e.g., reduce spoilage, handling and transportation costs to a point where its operational costs are--as a minimum--no greater than those of private sector grain marketers. IHMA should also have the technical capacity to work with the private sector and other governmental entities in the planning, and to some extent, in the execution of post-harvest control programs.

Another major component of the marketing-price policy complex is the price control program being conducted by the Ministry of Economy under the authority of Decree Law 91. There are some indications that the manner in which this authority has been used may have favored intermediaries and consumers at the expense of the profit margins of producers and consequently could have contributed, at least for some products, to a stagnation in primary production levels. A study of the workings of the

program with a view to recommend desirable modifications in its orientation, application and administration is indicated.

14. Agricultural Inputs - Currently the GOH is the major producer and supplier of basic grain seed. Its productive capacity is not fully utilized, its quality control is not adequate and its distribution system does not work well. Except for citrus plants and banana plants there is no official production of other fruit plants, vegetable seed, grass seed, minor field crop seed or tree crop materials. Because of the importance of high quality seed and plant materials for farm production, priority action on a seed law is needed.

A strategy to expand and improve the production and distribution of quality seed and plant material seems called for. Such a strategy should concentrate on improvements in all agricultural seed and plant materials; consider use of new distribution channels such as the current commercial input suppliers and cooperatives; encourage and assist the development of a private sector seed industry; and find means to make improved food plants, such as bananas and plátanos, available to small farmers.

In the area of farm mechanization, the national program has not achieved its goals due primarily to its newness and limited organizational development. More serious, however, is the need for a national mechanization strategy which deals with the kind of mechanization needed for different levels of agricultural units, the services to be provided by the private and public sector and, most important, seeks to develop appropriate levels and kinds of machinery which will optimize labor and avoid labor displacement. This strategy should include establishment of effective linkages with the agricultural research program.

15. Research and Development Strategy - The GOH is in the early stages of establishing a research and development strategy. However, a strategy has not emerged which deals with all of the most important aspects of a research and development system, i.e., development and testing of new knowledge, adaptation of existing knowledge, dissemination/extension and feedback of results into the system. Some elements of a system are in their planning phases, in particular a farmer-oriented agricultural research program and a light capital technology program.

However, a key element in such a strategy, that of dissemination of research results and feedback is not yet well defined. Neither is there an explicit tie-in to the system which delivers inputs in the sector.

a. Research in new varieties, crops, cropping systems, etc. - Principally because there has not been a carefully defined policy and a lack of focus on priorities, the agricultural research/extension functions have not been responsive to the needs of agriculture in Honduras. Present

research activities concentrate on variety and agronomic trials, links with extension personnel are weak, and trained manpower tends to drift to other programs with more dynamic activity.

In response to this problem, the GOH recently decided to restructure and strengthen the national agricultural research program (PNIA). In this connection, it procured the services of the International Agricultural Development Services (IADS) to study and make recommendations concerning the program and its interrelationships with related national and international entities. The draft report of a study group composed of PNIA and IADS personnel proposes research priorities which: (1) focus primarily on small to medium farmers (both independent and agrarian reform); and (2) places continued emphasis on basic food grains with medium to long-run emphasis on vegetables, oil seed crops and livestock. It then recommends a research strategy, i.e., farmer-oriented, interdisciplinary research; strengthening the national research station network; a strong manpower development program; and exploitation of opportunities to link with other research and development institutions engaged in activities complementary to those of PNIA.

The report is useful, especially its recommendation for farmer-oriented, interdisciplinary research. The setting of priorities between basic food grains and other products (which has implications as to the composition of the multidisciplinary teams, back-up personnel, etc.) should be studied further. Also, it should be noted that the report is essentially a project proposal for what PNIA should do and what resources it needs, rather than an overall agricultural sector research strategy which examines and interrelates research activities, current and contemplated, between PNIA and other public sector entities, e.g., research on soil and water uses.

b. Light Capital Technology - A development, adaptation and testing program for light capital technology primarily concentrated on farm implements, mechanization and farm infrastructures is underway. Research in this element centers on analysis of constraints to optimizing farm productivity during the agricultural year for the small and group farms and includes economic and social aspects. Effort is also devoted to development of rural artisans and small manufacturing shops for production, repair and maintenance.

Although this is an appropriate approach, strong links are needed to the research program on the one hand, and to the system for dissemination/transfer of new knowledge and the inputs delivery systemson the other. Effort is needed in expanding this approach to deal directly with the areas of dissemination of knowledge, as well as production and distribution of farm implements and machinery.

c. Dissemination/Transfer of Technology - One missing element for a comprehensive research and development strategy is a strong technology transfer system and supporting delivery systems including delivery of:

- the knowledge about varieties, crops, cropping systems and methods
- the physical technology (inputs, tools and machinery)
- financing
- farm management methods.

As indicated throughout the assessment, the technology transfer system, principally the Extension Service and the inputs delivery systems, still lack comprehensivesss and a unifying philosophy. Much work needs to be done in this critical area where the government is in direct contact with the farmer.

Additional study is needed to carefully develop all of the elements of the delivery system: (1) dissemination/transfer of new knowledge with appropriate feedback mechanisms; and (2) delivery of the means for implementation, i.e., credit, seeds, tools, marketing, etc. Experimental organizational arrangements for such a system are discussed elsewhere.

d. At this time steps should be taken to accelerate the preparatory work for the crop and cropping systems research and to intensify and expand the program for developing Light Capital Technology. Such actions must be developed along with improved systems for dissemination of new knowledge and delivery of physical inputs since all of these elements are integral to a Research and Development Strategy in the sector.

16. Strategy for Control of Post-Harvest Losses - The subject of reducing post-harvest losses has been touched upon several times in preceding sections. Given the magnitude of the losses, e.g., perhaps 1/3 of the corn cultivated, action in this area is probably the fastest and most benefit/cost effective means to increase the amount of food, especially basic grains, available for domestic consumption. The GOH is well aware of the problem and the opportunity. A strategy for initiating work was set forth in a GIDA/ALC study dated June 1977. In general, the proposals in this document are sound and should be implemented. However, rather than creating a special project authority for the program, consideration should be given to entrusting the overall direction and coordination responsibility to an existing entity. The work plan should include involvement with research, extension and credit entities. Extension activities to help women understand how to prevent loss of food stored on the farm and in the home could be particularly productive. Also, the possibility should be explored of moving ahead more rapidly with elements of the program where little or no research is required, e.g., expansion of sub-regional level grain-drying and sacked storage facilities, while the necessary investigation of the most appropriate technology for on-farm preservation measures is undertaken.

IV. MACRO-ECONOMIC FRAMEWORK

The agricultural sector is extremely important to the total economy contributing about 33.0 percent of the GDP, 75 percent of the value of exports and 16 percent of the current income of the government.1/ Approximately 63.6 percent of the total population and 68.6 percent of the economically active people are dependent upon agriculture for their livelihood. Even though 68.6 percent of the population lives in rural areas and about 520,000 are classified as economically active, only 36.1 percent of those classified as unemployed are found in agriculture. Underemployment in agriculture, however, is estimated to vary from 15 to 70 percent, depending upon the season of the year. As a consequence, the sector shows the lowest index of labor productivity of any sector. Nevertheless, employment generation in the agricultural sector contributes significantly to employment in other sectors. Although the multiplier varies considerably depending upon the type of agriculture and level of production, it is estimated that one job created in agriculture can result in the generation of up to 6.7 jobs in other sectors of the economy, such as supply, transport, processing, marketing, etc.

The contribution of the agricultural sector to the economy was seriously affected by the hurricane of 1974. Banana exports, which previously constituted 30.2 percent of total exports and 40.3 percent of agricultural exports, were drastically reduced. The result was a negative average growth rate in agricultural exports during the 1972-76 period. There is considerable evidence of a shift of resources out of the agricultural sector to other sectors during this period. It is estimated that these transfers ranged from about U.S. $1.8 million in 1973 to $9.25 million in 1976. Some of the more important reasons for this shift are relatively low agricultural prices in relation to production costs, uncertainty with respect to the government's land tenancy policies and more attractive alternative opportunities for investment in other sectors. It is also likely that the 1974 hurricane accelerated capital transfers as many who incurred losses decided not to rebuild or reinvest in the sector.

Current indices of economic growth show Honduras in last place among all Central American countries. During the period 1972-76, real GDP for Honduras increased at an annual rate of only 2.4 percent, considerably below the population growth rate which was estimated to be between 2.8 and 3.2 percent. The GDP per capita remained about constant and per capita income decreased 0.7 percent. There are some indications that the agricultural sector halted its decline and turned the corner in 1976. Sector growth in 1976 over 1975 was 4.0 percent, the first positive growth in three years. 2/ Agricultural exports were up from U.S.$197.5

1/ The principal source of statistical information in this section is the Central Bank of Honduras, Department of Economic Studies.

2/ In constant 1966 prices.

million in 1975 to $297.5 million in 1976. This reflected the increased value of coffee and fish exports and a recuperation of the banana industry. The improvement shown by agriculture was in large part responsible for the achievement of a 6.0 percent increase in total GDP for 1976. 3/ This is the highest percentage increase in GDP in this decade.

The principal causes of the economic slow-down during the 1972-76 period can be identified as: 1) damage to the agricultural base caused by the 1974 hurricane and by periodic floods and droughts; 2) structural limitations resulting in a maldistribution of production resources and of incomes; and, 3) the high level of dependency of the economy upon the agricultural sector which results in this sector's performance having a very strong influence upon the other sectors of the economy.

The critical importance of agriculture as the principal basic sector in the economy dictates the need to stimulate the development of this sector in order to achieve overall development of the country. If economic development is to be accomplished, the agricultural sector must: 1) satisfy the domestic demand for food and for primary materials of agricultural origin for industry at prices that are reasonable in relation to incomes; 2) generate capital for the needs of the sector and for other sectors of the economy; 3) provide labor to the industrial and service sectors; 4) earn foreign exchange through exports and import substitution; and, 5) provide a market for industrial products.

Honduras' agricultural sector performance in terms of meeting food needs has been reasonably good. Even in disaster years, food exports have been sufficient to more than cover the cost of food imports. In terms of potential, however, the sector's contribution has been somewhat disappointing. The average rate of growth of the sector since 1960 has been lower than that of any other country in Central America. Until the late 1960's Honduras exported a considerable amount of corn and beans. More recently, several factors have combined to reduce grain exports while other food exports (e.g., bananas, coffee, beef, shellfish) were increasing. This trend toward the increased exportation of higher value commodities better suited to Honduras' production base is probably much better for the country in the long-term. Although considerable amounts of fats and oils and milk products are presently being imported, there is no question that the sector could supply the country's needs for food, fiber and primary materials for industry in both the short and long term.

Agricultural imports accounted for only 14.3 percent of total imports in 1972-76. Much of this consisted of agricultural machinery and farm chemicals, including fertilizer. During the period, total imports increased at an annual rate of 6.8 percent while agricultural imports increased by 4.1 percent annually. Total exports during the period increased at only 2.8 percent. The result has been a serious trade deficit each year since 1973. Although the balance of trade improved somewhat

3/ In constant 1966 prices.

in 1976 over the two previous years, the total deficit for the three years 1974-76 was U.S.$264.9 million. Priority must be given to increasing exports and reducing imports in order to reduce or stop the serious drain on Honduras' reserves and to improve her balance of payments position.

The external debt of the country increased considerably during the 1970-1976 period, and the ratio external debt/GNP more than doubled from 20.6% in 1970 to 44.4% in 1976. The ratio of the external debt service to exports increased from 4.7% in 1970 to 16.7% in 1976. A debt service/cost relationship equal to 20% of exports is considered by the World Bank the upper limit of a country's capability of indebtedness. This limit has a direct relationship to the export structure. If exports fluctuate widely in response to vulnerable markets this limit becomes more valid. A high coefficient implies a reduced capacity to import, and suggests caution in acquiring additional external debt. Furthermore, consideration needs to be given to the type of investment made over this period, since investments in infrastructure need a longer period to show any impact on GNP.

The importance of agriculture in the total economy declined during the 1972-76 period. The sector contributed 36.1 percent of GDP in 1972 and only 29.6 percent in 1976. It is still, however, the most important sector by a margin of nearly two to one. The importance of the various commodities within the sector merit some consideration because of the concentration on a few products. Bananas, coffee and corn generated 55.0 percent of the value added of all agricultural production (including livestock and forestry) in 1976. Livestock contributed 16.4 percent and forestry about 12.5 percent of the total. Thus, only five commodities generated nearly 84 percent of the total value added by the sector. Again, the importance of the agricultural sector to the total economy and the importance of agricultural commodities in the export picture dictates the critical need to further diversify production and exports.

The maldistribution and the general low level of incomes significantly affects agricultural development. In 1970-72 it was estimated that 79.8 percent of all families in the country had annual incomes of less than U.S.$1,000.00. Approximately 44.7 percent of the families had incomes of less than U.S.$250.00 annually. Rural incomes are considerably lower than average. Nearly 76.0 percent of the rural families have incomes of less than $500.00 annually. Low incomes are the principal cause of a serious nutritional problem. An estimated 50 percent of the population have incomes so low that caloric intake averages only about 70 percent of the minimum daily requirements and protein intake is only 55 percent of that recommended. Also, this very low income level permits practically no capital accumulation or investment to take place from personal resources. Neither does it permit sufficient domestic demand to stimulate the development of other sectors of the economy.

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The large number of Honduran families with extremely low incomes has important implications for agricultural development. First, a large part of the production for other than basic food crops must be produced for export because of the limited domestic demand. Secondly, any increase in production by small farmers will require considerable financial input from sources outside of agriculture. The GOH has recognized this need and has made significant changes in public sector investment priorities for the 1976-83 period compared with the 1960-75 period. It is expected that the level of total investment during the 1976-83 period will increase to more than U.S.$500 million annually, about 31.9 percent of the GDP. The public sector portion of this investment is expected to increase from about U.S.$30 million annually to $288.8 million, 4/ almost a ten-fold increase.

In addition to the increase in investment, significant changes have been made in investment priorities. The portion of the public sector investment budget allocated to agriculture is expected to increase to 40.4 percent for the 1976-83 period. It was only 4.2 percent of the total for 1965-75. In order to accomplish this large increase, public sector investment budget allocations are scheduled to increase by 27.1 percent per year during the period 1976-83. Private sector investment in agriculture is expected to increase at a much slower rate, about 4.4 percent per year. 5/ Within the sector, development and production programs will receive top priority. Forestry will receive second priority and irrigation and drainage works will get third priority.

The increased attention given to agriculture in the investment budget implies reduced relative priority to other sectors. The largest reduction is projected for the transportation sector (which includes roads). The proposed relative reduction, from 45.5% to 15.5% of total investment does not represent an absolute reduction and, in fact, its level remains almost at a constant at its highest amount ever. In order to better compare the levels of investment for transportation and agriculture sectors, real investment figures need to be analyzed. For the 1977-83 period, agriculture represents 12.8% of real investment while transportation accounts for 26.3%. This happens because planned investment in the agricultural sector includes a heavy component of transfers to the private sector via credit mechanisms.

4/ This amount is probably overstated due to the manner in which financial investment is defined, see Chapter V-F on Investment for further details. Also, since this overstatement regarding financial investment relates mostly to agricultural credit, the following figures on agricultural sector investment are also seriously inflated.

5/ This is a CONSUPLANE forecast. Since the average annual growth rate for the 15-year period 1960-1975 was 10.3%, performance of better than 4.4% annually can be expected for the 1977-83 period.

V. SECTOR RESOURCES AND CONSTRAINTS

V.A. AGRICULTURAL AND NATURAL RESOURCES

1. The Agricultural Production Base - Honduras has a total area of about 112,088 Km^2 or 11,208,800 has. The central and western parts of the country are characterized by rugged, mountainous terrain, with ridges and peaks ranging in altitude from 2,400 meters in the north to about 3,000 meters in the west. This area is interspersed with a number of small valleys most of which are relatively narrow with steep side slopes of more than 20%. The lower, flatter areas of the country with slopes under 20% include the northern (Atlantic) coastal plain, the extremely flat eastern Mosquitia region and the southern (Pacific) coastal plain. In addition, there are twenty major river valleys that connect with the three coastal plains and which contain about one million hectares of land suitable for cultivation. These more important valleys include the Sula and León Valleys in the North, the Aguán Valley in the Northeast, the Guayape-Patuca valley in the east central and the Nacaome-Choluteca valley in the south.

The climate is primarily tropical and sub-tropical in the lowlands and coastal areas and temperate at higher elevations. There is no freezing weather in any area. Rainfall patterns are extremely variable from one part of the country to another. Much of the country has distinct dry and rainy seasons. These seasons are less distinct along the north coast where rainfall averages nearly 3,000 m.m. per year. In that area the driest months, (March, April and May) average 100 mm. per month and the wettest months, (June through January) average 250 to 400 mm. per month. Here the climate is tropical and humid. The climate in the eastern part of the country is similar to that of the north coast except that the rainfall for the period December through May is somewhat less. Most of the interior of the country (except the area around Lake Yojoa, which has rainfall amounts similar to the north coast) has an annual rainfall ranging from about 900 to 1,800 mm. with very little rain (0 to 50 mm.) during the period December through April. The humidity is somewhat lower in this region and the temperature, due to higher elevations, is also lower. The south coast has a slightly higher average annual rainfall than the interior but with a longer dry season, beginning in November. Temperatures average a few degrees higher than the north coast. Humidity is lower than on the Atlantic coast but slightly higher than in the interior.

Average mean temperatures in the tropical coastal zones (up to about 600 meters) are around 26°C. In the temperate zones from 600 to 2,100 meters mean temperatures range from 16 to 24°C. Zones above 2,100 m. reportedly have temperatures which average less than 16°C.

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It should be noted that, because of the rugged, mountainous terrain, there are wide variations in rainfall in small micro-climate areas scattered within each of the general climate areas described above.

During an average year, the country's rivers discharge water into the Pacific and Caribbean Oceans at an average rate of 3,230 cubic meters/second (cumecs) (280 cumecs and 2,950 cumecs, respectively) for a total of over 100 billion cubic meters per year. Underground water potential is estimated at a safe yield of 290 cumecs. Currently, however, only some 40 cumecs of the available surface water is used for irrigation, practically no groundwater is used, just 5% of the available hydropower potential is utilized, and combined industrial and potable water use is minimal. The major river systems include the Sula in the north, the Aguán in the northeast, the Chamelecón in the west, the Guayape and Patuca in the east and the Choluteca in the south.

A number of the other agriculturally important valleys are served by lesser river or tributary systems (e.g., Leán, Comayagua, Morocelí, Jamastrán, La Masica, Zamorano, Talanga, Yoro, Siria). The river valleys comprise the bulk of the country's best and most readily exploitable agricultural lands.

While the supply of surface water is ample for the country as a whole, the spatial distribution is not uniform. Unfortunately, many of those zones with lower unit water yields correspond to areas of high population density and water demand. During the dry season, the rivers of Honduras discharge only about 40 cumecs but more than six times this amount during the rainy season. Some 87% of the discharge of the total annual flow rate occurs during the wet season. Furthermore, there are often sizeable fluctuations within the rainy period. Dry spells of a month or more can occur during the growing season for most rain-fed crops. A recent review of precipitation probabilities and distribution indicates that at 25 locations about the country, where five continuous years or more of recorded rainfall exists, the months of dependable (adequate) rainfall are insufficient for growing traditional consuption crops. 1/

Despite very low levels of waste water and sewage discharge into Honduran streams, these amounts become concentrated and hazardous during the extreme low flows of the dry season. Peak flows, on the other hand, tend to develop rapidly as rain input and surface runoff occur, bringing large sediment loads and floods as a consequence. Tons of soil are washed down from the higher erodable watersheds due to the removel of cover through uncontrolled fire, hillside migratory agriculture, grazing, and logging. The high peak flows annually threaten inundation and sedimentation of otherwise productive lowlands and can greatly reduce the

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1/ Hargreaves, G. "Increasing Field Crop Production in Honduras" prepared for the Water Resources Unit under GOH/AID Contract.

storage capacity and useful life of reservoirs and dams.

The best and most recent study of soils contains descriptions of the major types and areas. 2/ The best soils for agriculture are found in the northern and southern coastal plains and in the major river valleys. There are estimated to be about 18,000 Km^2 (1,800,000 has.) of valleys and coastal plains. The valley soils are alluvial, somewhat sandy near the rivers but giving way to clays away from the rivers. Most are probably deficient in nitrogen and many show the need for phosphorus, magnesium, manganese and sometimes other minor elements as well. Soils outside the valleys are generally shallow with deficiencies in nitrogen and phosphorus. The soils of the mountainous areas are not generally suitable for annual crops although many of these areas have potential for perennial crops and pastures.

Because of the soil and climatic conditions, the dominant natural vegetation is forest. Approximately 83% of the total land area is considered to be best suited for forest or grazing. Probably less than 60% is presently in forest, however. An estimated 60% of the present forested area is predominantly tropical broadleaf species. The other 40% is pine. There are also some substantial areas of savanna with grass and herbaceous species. Many of these areas have been converted to savanna through repeated burnings and the destruction of the pine seedlings.

It is extremely difficult to make reasonable estimates of land-use potential. Plath, whose estimate is probably still the best, drew upon the available data on soils, rainfall and temperature in deriving his estimates. 3/ Four basic land classes were defined: I- suitable for intensive cropping; II- suitable for extensive cropping; III- suitable for forestry; and IV- not responsive to intensive production practices and suitable only for very extensive use in livestock and forestry and as watershed protection. The resulting distribution of area in terms of use potential is as follows:

2/ V. Castellanos and C.S. Simmons, "Mapa General de Suelos", Ministry of Natural Resources, 1968. Published in Spanish in 1977.

3/ C.V. Plath, "Mapa de Uso Potencial de la Tierra", FAO, 1964; and "Uso Potencial de la Tierra de Honduras, Evaluación Basada en los Recursos Físicos", FAO (UNDP Report AT2234), 1967.

	Hectares	% of Total
I. Intensive Use		
Annual Crops	872,600	7.8
II. Extensive Use		
Annual Crops	149,500	1.3
Perennial Crops	867,000	7.8
III. Forest	6,162,700	55.2
II and III. Extensive Use Jointly with Forestry	103,700	0.9
IV. Very extensive use	3,017,300	27.0
	11,172,800	100.0

These estimates, although considered the best available, are necessarily based on limited information and are subject to adjustments as better data become available.

A comparison of the above estimates of land potential with available information on actual land use shows that only about one-third of the land suitable for annual crops is now used for that purpose. Only about 22 percent of the potential for perennial crops is being utilized. The situation is complicated further by the fact that much of the land in annual crops and perennial crops is suitable only for forestry or other very extensive use and should not be in these crops at all. This implies that an even higher percentage of the better lands is not being properly exploited. There are ample opportunities and a real need to improve the exploitation of the land base. A wide range of problems or other causes have combined to create the present situation. The most important of these may be the lack of access roads and other infrastructure in many of the areas with large amounts of the better agricultural lands. Other constraints include land tenure, culture and tradition, health problems in lowland areas, floods, etc. Some of these are presently being overcome in priority areas as the Honduran government is moving ahead in the development of the larger valley areas.

The constraints to expansion into many of the areas with higher quality land have resulted in a concentration of the farm population in areas of relatively low land quality. The population distribution is very uneven with population density of 42 to more than 50 persons per square kilometer in the south and less than five per Km.^{2} in three eastern departments. The large number of departments in the southeast and west all have more than 25 persons per Km.^{2} while most of those in the north have fewer than 15. The Western Region of the country has a population density of 1,000 persons per square kilometer of arable land. This high

concentration of the rural population in the mountainous areas with a relatively small percentage of the land suitable for cultivation has resulted in a small farm situation in which a high proportion of the farmers find it virtually impossible to rise above the poverty level. In the Department of Valle, for example, the mean farm size is only 3.7 hectares. Twelve departments have a mean farm size of less than five hectares. The small land base in all of these, on the average, is also of low quality with a high proportion of the cultivated crops on land that is really suitable only for forestry or other extensive use. In the country as a whole, only 31 percent of the land in farms was in annual or perennial crops in 1973-74.4/ Almost 50 percent of the portion in cultivated crops was in corn, beans and sorghum. These traditional crops are all of relatively low value when produced on marginal lands without fertilizer, pure seed or adequate pest control. An additional 14 percent of the cultivated land was in coffee, a high value crop.

The serious on-farm land constraint, and the problems of inaccessibility to inputs and markets, have been major factors in moving a large number of small Honduran farmers into concentration on the production of basic grain crops and into semi-subsistence operations.

2. Forestry Production Base - The value of exports of wood and wood products from Honduras is exceeded only by the value of exports of bananas and coffee. Forestry exports have expanded rapidly in response to increasing CACM and world demand since 1966 when the reported value totalled over $10.5 million. By 1976, according to the Corporación Hondureña de Desarrollo Forestal (COHDEFOR), the export value exceeded $42 million. The 1976 export production was 234 million board feet and production for domestic use, including lumber, plywood and firewood was estimated at over 47 million board feet. This figure does not include firewood and fence posts used by rural dwellers.

a. Land Base and Tree Species Resources - It has been estimated that about 17% of the country is in valleys and coastal plains. Most of the remainder is in mountains and steep slopes. Slopes from 20 to 60% are common. It is on these rougher lands that the majority of the 2.7 million hectares of pines are found, although some potential agricultural lands are covered with pine. Extended areas of scattered pine lands are suitable for limited cattle grazing. The 4.5 million hectares of hardwoods occupy rugged, better quality lands and also extend rather extensively into rich undeveloped or underdeveloped valleys. A considerable portion of the 2.2 million hectares of forest land not in forest or sparsely covered with forest is used for extensive grazing. Under sound conservation practices, the major portion

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4/ Censo Nacional Agropecuario - 1973-74, Dirección General de Estadística y Censos.

of this area can be returned to forest by natural regeneration. These data are based upon rough estimates from aerial photographs taken in the 1960's. Part of the current forestry development program involves making new pictures, utilizing infra-red photography to make possible a more accurate inventory of land and forest resources. Lands within the forest area that are suited to agriculture will be identified within the next few years from ongoing soil surveys. About 70% of the forest land in the country is owned or controlled by the government.

The hardwood forest is a complex mixture of over 100 species. Economic uses have been found for 34 of these. Mahogany and cedar are the only two being exported in any quantity. This has led to the practice of "high grading" of hardwood forest leaving little chance for quick regeneration of valuable species. The Canadian International Development Administration is assisting GOH to obtain a more complete inventory and soil analysis on the hardwood zones. The project also includes testing the physical characteristics in order to determine commercial uses for unclassified species.

There is general agreement that much of the estimated 50 million cubic meters of pine timber is old and generally poor for reproduction of denser stands of high quality. The GOH is, therefore, embarking on a liquidation policy rather than a sustained yield policy in some areas. The majority of the pine area, however, will be managed on a 40 year cycle sustained yield basis.

b. Institutional Framework - Sweeping changes in public policy for the forestry based sector were initiated in early 1974. On January 10 through Decree No. 103, the GOH created the Corporación Hondureña de Desarrollo Forestal (COHDEFOR), a semi-autonomous institution. The decree stipulates that the Corporation shall be governed by a Board of Directors headed by the Chief of State. Other members of the Board are the Secretary of Economy, Secretary of Natural Resources, Secretary of Treasury and the Executive Secretary of the Superior Council of Economic Planning.

The Corporation has control of all forest, public and private. Its mandate is to utilize, protect and conserve the nation's forests, to reforest denuded areas, and to establish sound systems of organization. It has the authority to utilize all forestry resources under any system it elects and can determine when the forest can be exploited. There is an obligation to pay private owners for their timber at a price fixed by the Corporation. Currently this is 40% of the value of the product for the owner and 60% for the Corporation. Industrialization or harvesting and manufacture of forest products by the Corporation may be through joint ventures, contracts with private sector or may be Corporation operated. All exporting and domestic wholesaling of wood products will be done by the Corporation. The Corporation can also form and operate commercial wood-using industries, grant credit or guarantees to

forest enterprises and can borrow money domestically or from foreign sources.

The Corporation can hire personnel and determine salary levels without regard to the Civil Service System. The only significant obligation to other government agencies is that its program must be in harmony with the National Development Plan. The Corporation must, however, generate its own funds and not participate in national budget allocations.

The Corporation is obligated to operate a Social Forest System for the large number of families that subsist in the nation's forested areas. It has the authority to determine, with the collaboration of INA, the extent and location of lands in forested zones suitable for agriculture and livestock. Article 8 of the Decree directs the Corporation to execute alone or with other agencies, works that are vital for the protection of watersheds.

The broad powers COHDEFOR exercises over the nation's extensive forested area leaves many unresolved problems between the Corporation and the rest of the agricultural sector. For example: management of the river basin systems; criteria for determining forest lands, grazing lands and agricultural lands; management of fish and wildlife in national forests and access plus exploitation of mineral resources. Failure to clarify these and other points can act as a serious constraint to development of some of the nation's most valuable resources. Although a precise and effective national policy on land and water use is not currently feasible given the current data base, a strategy in this area seems appropriate. As a minimum, decisions on land use made by INA and COHDEFOR and on water resources made by MNR, ENEE, SANAA should be closely coordinated to optimize the utilization of these resources to meet national economic and social purposes.

In order to more fully develop the export potential and satisfy the domestic requirements, including import substitution of carton and paper products, and generate sustained employment for large numbers of people from the target group, huge financial investments will have to be made over the next decade. Projects being implemented or planned include:

Construction of administrative facilities
Roads and access trails
Fire protection and disease control
Development of experiment stations and nurseries
Training at the National School of Forestry Sciences
Forest inventories and soil studies
Reforestation and aforestation
Social forest program through organized groups
Timber harvesting by existing and new mills

Plywood production
Operation of concentration yards
Turpentine and resin production
Construction of pulp and paper mill in the Department of Colón
Dry Kiln at La Ceiba

Other programs scheduled for study are:

Manufacture of wood chips for export
Fabricating furniture parts
Parquet flooring manufacture
Making moulding
Prefabrication of housing elements
Making laminated structural timbers
Manufacture of fiberboards
Manufacture of boxes

Further information concerning this complexity of projects and activities is found in Annex I.

Lack of trained manpower is a serious constraint facing COHDEFOR in its attempt to manage and develop Honduras' forest resources. It is doubtful if the Corporation itself fully realizes the magnitude of its manpower requirements over the next ten years. The agency is new and expanding rapidly and, therefore, has not fully focused on the problem. An immediate need has been expressed for approximately 200 more professional people. These should be foresters and wood utilization technicians. At present, professionals are being hired from the U.S., Belgium and Chile. The COHDEFOR staff numbers about 1,600 people, in all categories, that need upgrading badly. A number of employees are out of the country for advanced training. Officials would like to send more but they state that the best candidates cannot be spared from key jobs until some of the overseas trainees return.

COHDEFOR sponsors the National School of Forest Sciences at Siguatepeque. New facilities are being added to raise the school's capacity to 132 students with 45 to be graduated annually. Attempts are also being made to upgrade the forestry curriculum at National University in La Ceiba.

The Corporation is under considerable pressure to maximize earnings from the resource base available with the manpower available. The forest resource problem ranges from having to harvest scattered pines in large areas so regeneration can take place to not knowing quite how to most profitably handle the hardwoods. COHDEFOR has a difficult, but not impossible, task ahead. The industrial complex now envisioned will require large volumes of timber on a sustained basis. This means that they will have to carefully manage the harvesting of existing old

forest stocks so that new crops become available on schedule. Marketing of the products from the industrial complex will require a concerted promotional effort and a thorough understanding of the marketing systems. World outlook for continued increase in the demand for wood and wood products is poor.

3. Fisheries Production Base - The export of fish, mostly shrimp and lobster from both the Atlantic and Pacific sides, was the sixth most valuable foreign exchange earner for Honduras in 1976. All seafood exports were valued at $12.3 million, shrimp accounted for $7.7 million of the total, and lobster $4.5 million. About 74% of the 300 M.T. annual catch is shrimp and lobster. The remainder is white fish and small quantities of clams, oysters, crabs and conchs. There are an estimated 4,300 fishermen on both coasts. These artesanal fishermen use small boats or canoes and fish by primitive methods. Continuing efforts to organize them to use better methods and develop better landing facilities has resulted in the formation, to date, of eight cooperatives with 426 members. Included in the 4,300 are about 660 shrimp and lobster fishermen, who man the 206 boat fleet. In 1975 the fleet had 120 Honduran boats, 80 North American boats, three Nicaraguan boats and three Jamaican boats. The proportion of the fleet belonging to Honduran fishermen increased from 72 boats in 1972 to 120 boats in 1975. Data on the fish from inland lakes, rivers and streams is sketchy. Attempts to establish shrimp farms, catfish farms and small farm ponds have met with only limited success to date.

GOH support to and control of the fisheries industry is through the Department of Fisheries in the Ministry of Natural Resources.

At present, the Department is understaffed, underequipped and underfinanced for the magnitude and importance of their mandate. The staff includes eleven marine and general biologists, twelve inspectors, nine extension specialists (working principally with cooperatives), and fifteen support personnel. The Directorate estimates that within the near future the staff should be increased by nine additional biologists, 12 new inspectors, 9 new extensionists and 15 more support personnel.

The Department is short of adequately trained personnel in all sectors of its operation. To help overcome this problem, the Japanese Government is assisting in the creation of a Marine Technology School. AID is assisting with participant training and technical assistance. A forthcoming IDB project will also have a training component. During the training period (3 or 4 years) the Department will be hard-pressed to cope with ongoing programs.

Surveys and investigations are needed on a wide range of subjects in order for the Fisheries Directorate to make sound technical decisions and recommend rational policy decisions to high level officials. Some of these are:

a. What will be the expected increased net economic benefit if the GOH adopts a 200 mile fishing limit thus increasing fishing area from 1,296 Km^2 to 180,000 Km^2?

b. Determine river populations and catch of edible fish as well as the economics of restocking.

c. Continue pond culture studies of shrimp and macrobrachium through joint ventures, if possible.

d. Continue studies in pond cultures of fresh water fish and adapt to small farmer use.

e. Develop locally adapted technology for oyster culture to be done by artisans.

f. Carry out icthyological studies of commercial species in rivers and oceans.

The GOH has already initiated actions toward working out solutions to a number of problems in the development of its fisheries resources. A Marine Technology School is being established; a program for developing the artisan sector is forthcoming; a project is underway to develop shrimp and fresh water fish culture; and a new fisheries law has been drafted. Continued technical development, financial backing and rational policy guidance can develop the industry into a key subsector of the Honduran economy. For more detailed information on Honduran fisheries see Annex J.

V.B. HUMAN RESOURCES

1. Introduction - This chapter describes the human resource base of rural Honduras, both at the farm level and in the institutions intended to serve the agricultural sector. Further, it outlines the activities designed to improve the human resource base, analyzes the supply and demand for technically prepared people and identifies some possible priorities for future action.

The 1974 census indicated that 68.9% of the Honduran population lives in rural areas. CONSUPLANE's 1976 survey of non-formal rural education indicated that 50.3% of the rural population was illiterate. Through ambitious and continuing building programs, the GOH raised the national percentage of school-age children enrolled in school from about 60% in the mid 60's to about 91% by 1974. Unfortunately, according to USAID's Rural Education Sector Assessment, by 1976 the rate had fallen to 89%. Worse, attendance is much lower than enrollment which is still lower in rural areas than in the nation as a whole. Moreover, most rural primary schools are incomplete, i.e., they offer less than six years of primary education and a large number of children over-age in grade occupy rural classroom space. As a result the average educational level is less than the equivalent of a second grade education and there is minimal advancement through the system. Nationally, out of each 1,000 first grade entrants only 106 will complete six grades, 35 will finish high school and one will complete a university degree. As might be expected, the attrition rate is relatively higher in rural areas.

Thus, the rural population produces few people prepared to meet its development needs. The innate technical abilities of rural people are given little chance to develop and there are few from which to select for advanced training in rural or agricultural skills that are needed for development beyond present levels.

2. Farmer Training - Formal education provides a minimal first link in a chain of learning to cope with the rural environment. The link is weak and will strengthen only slowly. The question of farmer training, the transfer of information rural people to enable them to improve their decision-making, productivity and incomes, must be approached almost independently from the formal system. Farmer training must stand on its own, without depending even on basic literacy in its target group.

Non-formal education (a guided, voluntary adult learning process intended to instill specific skills related to adult needs) has been the principal response in recent years to the failure of traditional information systems, including the extension system, to deliver information to rural people in a coherent, useful form. The need to transfer infor-

mation quickly and directly to the population has made informal education perhaps a bit too popular. Non-formal education efforts have so many sources, purposes, approaches, priorities and actors that they defy classification short of a separate and exhaustive study. No fewer than 11 GOH dependencies and three private organizations offer basic, non-formal education. There is little, if any, coordination between these programs, most of which offer literacy, general education, vocational and technical training or community development training.

The principal activities are described in Annex L, which includes a section of a 1976 CONSUPLANE survey of national non-formal training programs. The programs listed in Annex L are concerned, wholly or in part, with farmer training. They are:

a. The Program of Human Resources and the Extension Service of the MNR, with a budget of L. 7,093,528 in 1976 for extension and farmer training to improve production.

b. INA's training of farmers in matters related to settlement and collective farming, with a budget of L. 197,868.

INA's farmer training and organizational promotion activity is the responsibility of PROCCARA, (Department of Campesino Training and Promotion) which coordinates community training and promotion activities with the training courses in its three Campesino Training Centers. INA has 90 promoters to service 1,088 settlements and plans to add 30 more this year to serve an additional 384 settlements. One promoter may serve four or five groups in the area of concentration (primarily the Bajo Aguán) and 15 or 20 groups elsewhere. About one-third of the settlements receive no promoter attention at all. Field studies performed for this assessment indicate that promoters are making little contribution to organizational support outside the area of concentration. Interviews indicate that training by promotors has recently been vague or unrelated to the problems of the group. Such training is not put into practice. This weakness may stem from a high turnover of personnel, inadequate initial training, and deficient in-service training of promotors, 95% of whom are recent secondary school graduates without specialized training.

With the recent integration of the Department of Promotion with PROCCARA, the Division of Training has three sections: Social Promotion; Technical Administration; and Technical Production. Rather than rely on its own inadequate staff, PROCCARA plans to contract training services from INFOP and DIFOCOOP and to utilize FAO technical assistance.

c. DIFOCOOP, (Directorate of Cooperative Promotion) is the autonomous entity of the GOH with the responsibility to assist in the formation of cooperatives and to conduct subsequent educational and oper-

ational programs. It is charged with implementation of the Cooperative Law, including inspection and auditing of cooperatives. While its primary training responsibility lies in the area of cooperative formation, designing administrative and management procedures for newly formed cooperatives and training members in their implementation, its efforts have also been extended to farmer training in technical areas such as crops, livestock, forestry and fishery. However, DIFOCOOP funds are limited. Its budget in 1977 was L. 1,893,100, to sustain its staff of 112 and its projects.

The requirement for farmer training in the reformed sector centers on the need to develop a capacity to administer cooperative enterprises. Organizational and administrative weaknesses are at the base of other problems, such as loan delinquency. There is, however, little experience or institutional structure to support this sort of training, to analyze, plan or experiment with various forms or to standardize administrative and accounting procedures. PROCCARA, INFOP, and DIFOCOOP each have different approaches, all unrelated to organizational structures utilized by ANACH, UNC, and FECORAH.

d. The Farmer Training Program of the National Institute for Professional Training (INFOP), has a budget of L. 3,526,111. Not all of this budget goes for farmer training, but in 1977 more than 3,800 farmers were trained, indicating that a substantial portion of the total INFOP budget is dedicated to farmer training to improve production. Technical courses developed by INFOP number 50. Consultation with farmers is used to select the subject matter to be taught.

e. The National Welfare Board (JNBS) has a budget of L. 10,200,000 to train community (including rural community) groups in community development, improvement of production and organization of community services. JNBS also supplies inputs, primarily seeds to groups being trained.

f. The National Evangelical Development and Emergency Committee (CEDEN) provides training in health, agricultural production and community leadership training in 50 rural communities on a budget of L. 1,510,115.00.

g. The ACPH (Acción Cultural Popular Hondureña) closely allied with UNC, provides farmer training in literacy, accelerated primary education, agricultural production and community and political development on a small budget of L. 77,718.00.

CONSUPLANE has identified four major problems with farmer training efforts: (1) a generalized lack of coordination among programs leads to duplication of effort, loss of time, concentration of activities among a limited target group, inefficient use of available resources, and confusion in the target group; (2) the lack of an integrated approach re-

sults in delivery of information in a disaggregated form (thus limiting its utility); (3) failure of the training to respond to the needs and aspirations of the target population. (In many cases, the content definition is poor and imprecise, having been designed "at a desk" and delivered with little prior consultation. It is thus unrelated to community needs); and (4) lack of reliable statistical feed-back which would permit an evaluation of effectiveness and consequent adjustments. To these weaknesses should be added: (1) the lack of linkages between training and input delivery mechanisms such as the credit system; (2) the lack of follow-up technical-assistance to reinforce training through practical application; (3) the concentration of most of the major training resources in the reform sector, leaving the great majority of farmers without formal access to information; and (4) the relative scarcity of training efforts aimed at women in general.

3. Women in Development - Annex M contains a description of the role of women in the agricultural sector. Women contribute significantly to the various economic activities of the family and influence directly the quality of life. They are directly involved in the marketing of most products and in the production of several important crops including coffee, tobacco, cotton and garden crops as well as the production and handling of poultry, milk, cheese and eggs.

Training programs specifically affecting women include:

a. The MNR's Division of Home Economics (a part of the extension service) provides training in horticulture, small animal production, tree crops, and ornamental plant production to 750 women through 43 Housewives Clubs. The program has one National Supervisor, two Regional Supervisors and 25 Promoters. Each promoter is assigned to one of the 85 extension offices and has at least a high school diploma but receives no specialized training for these jobs.

b. The JNBS promotes child feeding programs and provides seed and technical assistance in gardening; it also sponsors sewing and canning projects.

c. In 1977 INA's training arm, PROCCARA, organized a program to increase women's income in the reform sector. Working through housewives clubs PROCCARA offers training in vegetable production, food preservation, sewing and other subjects including health.

d. INFOP concentrated exclusively on training men until 1977 when, in collaboration with INA, it promoted training for women and older children in the Bajo Aguán. Plans exist to extend this training to other areas in 1978. INFOP has also trained female ANACH promoters.

e. COHDEFOR with FAO is sponsoring both women and men laborers in a soil conservation and crop diversification program.

f. Private sector efforts to train rural women have been mounted by ANACH, CARE, CEDEN, CARITAS, CDF/SCF (Save the Children Foundation), usually on a small scale for limited purposes. ANACH has a significant outreach capability with 25 campesino women promoters and 210 affiliated housewives clubs.

Most of the weaknesses that are found to affect non-formal training in general also affect the training of women. Moreover, though thousands of women belong to housewives clubs, the resources that are brought to bear on their problems through these organizations are minimal when compared to those dedicated to the training of men. On their own as individuals or in groups, women generally do not qualify for credit, a fact which tends to blunt the impact of information transfers. Agricultural Education institutions have not yet focused on the problems of women nor have they dedicated any resources to development of courses of study which would better qualify women to deal with the problems that concern them most directly. Women are not allowed to enter most vocational agricultural schools because the schools are single purpose boarding schools without facilities for women. CURLA's student body, however, is about 30% women studying for the Ingeniero Agrónomo or Ingeniero Forestal degree. As yet there is no specialized course of study for women.

4. Demand and Supply for Trained Personnel

a. General - Two separate studies were performed to provide information for this assessment of the supply and demand situation related to trained personnel in the Agricultural Sector. 1/ In formulating estimates of supply and demand for a five year period, researchers were confronted with a series of imponderables--policy decisions yet to be made regarding investments, programs, and personnel levels and the unpredictability of the actual output of educational institutions, the number of graduates who will be available for public service and the number to be selected for additional training. Despite the unknown, serious attempts were made to estimate by type and quantity the effective demand for agricultural technicians needed to sustain agricultural development over the next five to fifteen years and to identify the source

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1/ "Escuelas Agrícolas de Honduras, Oferta y Demanda de Recursos Humanos a Nivel Medio Superior;" José L. Martínez P., Tegucigalpa, December 1977 (USAID BACKGROUND Documents).

"Estimación de la Demanda de Personal Estratégico de Nivel Medio y Superior para la Evolución del Sector Agropecuario;" Ive de Barreiros, Tegucigalpa, 1977 (USAID BACKGROUND Documents).

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of such technicians.

b. Demand estimates are based on a careful examination of the projects that GOH agricultural sector institutions hope to finance and implement in the period 1979-1983 and on the assumptions that: (1) those programs will be approved and financed; and (2) that the programs will be implemented by the same entities that provided estimates of personnel requirements. There may be some bureaucratic competition implicit in the estimates since the sector is being restructured and lines of responsibility have not been established firmly. As a result, some institutions may be planning to take a larger role in some programs than they will actually be accorded. In addition, there may be a tendency on the part of some institutions to prefer the services of people with agricultural training when, in fact, other disciplines might be more appropriate. In other words, there is, on the one hand, a tendency to underestimate the demand by omitting several possible programs or institutions and, on the other hand, there may be a tendency to overestimate demand by being too optimistic about the future or programs now on the drawing boards or about the role a particular institution may play in those programs. On balance, however, given the fact that no consideration has been given to the need to train faculty for Honduran agricultural and forestry schools and no reliable estimates are available for demand in the private sector, it is believed that demand for people trained in agricultural disciplines has been substantially underestimated. Therefore, an attempt has been made in this chapter to compensate by adding in demand for faculty and an allowance for unspecified demand. (The basic public and private sector demand is detailed in Annex N).

For the period 1979-1983, a total of an additional 917 technicians in agriculture, veterinary medicine and forestry are needed to support major public sector programs. Of these, 631 are basic agricultural professionals, 86 are veterinarians and 200 are foresters. Basic technicians are classified as unspecialized Ingenieros Agrónomos or below. In addition, a need for 164 specialists with some post-graduate training has been identified in the public sector and 114 replacements will be needed. Not included in the following estimates of specialized agricultural personnel requirements are 138 complementary specialists, persons with non-agricultural educational backgrounds whose skills are needed in the sector. These include economists, administrators and engineers as detailed in Annex N. The best available estimate of total effective demand for agriculturists for the next five years can be expressed as follows:

PUBLIC SECTOR

Ingenieros Agrónomos	212
Agrónomos	240
Bachilleres Agrícolas	179
Profesionales Forestales	200
Médicos Veterinarios	86
Especialistas Post-agropecuarios	164
Reposición 2/	114
Sub-Total	1195
Educational Faculty 3/	75
Private Sector	81
Other 4/	100
TOTAL	1451

c. Supply

(1) Professional Agricultural Education - Public and private sector institutions draw professionals trained in agriculture from six agricultural educational schools in Honduras. Professional positions not requiring a technical agricultural background are filled from the regular educational system.

i. The John F. Kennedy Agricultural School has produced 200 Peritos Agrónomos (students having completed six years of primary education and three years at JFK) in the period from 1968 to the present and will have produced 300 by 1980. Beginning in 1978 all entrants will have nine years of general education and then will complete four years at JFK to become Técnicos Agrícolas or Pecuarios, degrees intended to be final, enabling JFK graduates to assume professional roles. JFK's output should be on the order of 45-55 technicians per year after 1981.

ii. The National Agricultural School (ENA), produced 434 Peritos Agrónomos by 1966 when its curriculum and entrance requirements changed to produce Bachilleres Agrícolas (education roughly equivalent to that of the Técnico Agrícola). ENA has produced 398 graduates in that category. Beginning in 1978 the entrance requirement was raised to a high school diploma (Bachillerato) and three year graduates will have the title of Agronomist. It is expected that ENA will graduate between 70 and 90 Agronomists annually beginning in 1980.

iii. The National Forestry School (ESNACIFOR), administered by

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2/ Replacements (level unspecified)
3/ USAID Estimate (all post-graduates)
4/ Allowance for Unspecified Demand, Public and Private Sector (level unspecified)

COHDEFOR requires a Bachillerato for entrants and offers a vocational degree exclusively in Forestry. The school has graduated 230 foresters to date. There will be 35 Honduran graduates this year.

iv. The Panamerican Agricultural School (EAP), is an international school located in Honduras and has served as a model for purely Honduran vocational and technical schools. EAP produces agronomists in a three year course. Honduran graduates to date number 230 and about 35 per year can be expected in the future. The level of preparation is such that graduates require one or two years to obtain a B.S. degree in the United States or Mexico.

v. The Menonite Vocational Institute, accepts primary school graduates and provides four vocational courses of three years' duration. Studies include agriculture, auto-mechanics, home economics, and carpentry. The school can be expected to graduate 10 Peritos Agrónomos annually.

vi. CURLA (Centro Universitario del Litoral Atlántico), is the agricultural campus of the National University (UNAH). It accepts all qualified applicants without regard to year of graduation or nationality. With a campus capacity of 400, CURLA has 928 students and expects 1,400 in 1978. About 80% are enrolled in Agronomy. A forestry curriculum is offered leading to an Ingeniero Forestal degree. The CURLA Faculty is 80% foreign because of a shortage of qualified Honduran Professors in Agricultural disciplines.

CURLA's physical plant is inadequate for the level of graduate it was intended to produce. Laboratory facilities and equipment are lacking. Classroom space is in short supply. Living quarters are not available to most students and faculty. Lacking proper laboratories and a library, with only a very limited research capacity and without demonstration fields and model irrigation facilities, CURLA offers its students little in the way of practical education at present. Even though faculty quality has been maintained by the use of foreign professors, present operating circumstances cast doubt on the value of CURLA's diploma. However, CURLA seems to be turning a corner. There have been a few young Hondurans who have obtained graduate degrees and returned to the faculty. They have developed a realistic plan for upgrading the school (see Annex P). The plan has been approved by the University Council. If resources can be found, the time is right for a major step in improving the quality of this institution.

The foregoing institutions have produced some 1,400 technicians of various levels. A complete survey of the public sector shows that it now employs about 698 of them. A partial survey of the private sector revealed 234 working there. Another 100 are currently training abroad, leaving some 300 whose status is in doubt. Some have probably found jobs outside the sector or have begun to farm family lands. Others may have departed the country.

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The group is relatively young so that few can be assumed to have died. Nevertheless, they are no longer part of the pool of available technicians.

By the end of 1982, the three agricultural vocational schools can be expected to have graduated 811 additional technicians. It is expected that about 229 of them will go on to higher studies and that 23 will work outside the sector. A total of 577 will be available for work in the sector. In the same time period CURLA's output of Ingenieros Agrónomos will be around 244 and 69 Bachelors of Science, Masters or PhD's will have returned from abroad with specialized training. There should be about 175 forestry graduates from ESNACIFOR and perhaps an equal number of Ingenieros Forestales available from CURLA. By 1981 the rate of production of all the vocational schools and Universities will be as follows:

EDUCATION	LEVEL (Total Years Education of Graduates	TITLE	GRADUATES/YEAR by 1980/81
JFK	13 years	Técnico Agrícola/ Pecuario	45 - 55
ENA	15 years 1/	Bachilleres Agrícolas	70 - 90 2/
National Forestry School	15 years	Dasónomo	35
Menonite School	10 years	Perito Agrónomo	10
EAP	15 years	Agrónomo	35
CURLA	16 +	Ing. Agrónomo	70
		Ing. Forestal	70
		TOTAL	335 - 365

SOURCE: Derived from "Escuelas Agrícolas de Honduras, Oferta y Demanda de Recursos Humanos a Nivel Medio y Superior." José L. Martínez P., December 1977.

1/ Beginning 1978

2/ Beginning 1980

No attempt has been made to evaluate the quality of graduate agricultural technicians. Generally, however, an Ingeniero Agrónomo would be prepared to pursue post-graduate studies outside the country while the Bachiller Agrícola, the Agrónomo and the Técnico would require one or more years of general and specialized studies to reach the Ingeniero level. The average Ingeniero Agrónomo would generally be unqualified to identify, design, and direct agricultural research efforts, but could be expected to apply his knowledge to direction of extension efforts, teaching, farm management and similar activities. A graduate of ESNACIFOR school would require additional training to reach the B.S. level or could apply his knowledge directly in the field.

Since there are no graduate level studies available, all University Faculty members in the field of agriculture must be either recruited or trained abroad. Moreover, there are currently no opportunities to study several critical disciplines at the undergraduate level in Honduras. Missing from the curricula are Agricultural Engineering, Home Economics, Agricultural Economics, Food Sciences and several other important disciplines, many of which CURLA has attempted to include in its development plan.

d. Comparison of Supply and Demand - The chart below attempts to summarize available estimates of supply and demand and to compare them in a way which will illustrate the policy decisions required to allocate resources efficiently. There will be a demand for 1,451 agricultural school graduates and a supply of 1,469. However, it is expected that about 323 agricultural technicians will be involved in additional training which will remove them from the work force for periods as long as four years (in the case of Doctoral Candidates) or as short as six months (for training at CIMMYT, CIAT or in other special courses). The 323 will be selected directly from the work force and from new graduates. In either case, their training will leave a position unfilled for varying periods of time.

In raw numbers, over the next four or five years, the supply of people with training in agriculture would seem to be nearly equal to the demand. However, the composition of the supply falls far short of meeting the demand for specialized technicians. A fundamental policy decision will have to be made as to the number of graduates to be selected for further training abroad where their services would not be available for as long as four years and the number to be hired immediately upon graduation to take up positions in the system. The issue is whether to use human recources now or to invest in them for greater returns at a later date. At one extreme, immediate use of all human resources as they become available implies deferral of the development of a strong institutional capacity to sustain development and a concomitant reliance on foreign talent. It would also imply the use of less qualified personnel in development programs and consequent lower returns on investments. At the other

	DEMAND (1978-1983)					SUPPLY (1977-1982)		
	PUBLIC	PRIVATE	FACULTIES	OTHER	TOTAL	Available for Hiring	Destined for Additional Training	TOTAL
Ing. Agrónomo and Below	631 +100 a) 731	70		80	881	777	273	1,050
Post. Grad. Specialist	164 + 88 b) + 14 a) 266	11	75	10	362	69		69
Foresters c)	200			10	210	300	50	350
	1,197	81	75	100	1,453	1,146	323	1,469

a) Replacements
b) Veterinarians
c) Includes CURLA and ESNACIFOR graduates

extreme, large investments in training abroad implies accelerated institutional development, the absence of some of the basic technicians needed for current programs or the deferral of such programs until qualified technicians are available. The proper choice probably lies between the two extremes with somewhat greater weight being given to longer term institutional requirements and the need to achieve the self-sustaining growth which depends on qualified technicians, specialists, teachers, researchers and leaders.

e. Para-Technicians - One means to make available technical talent stretch farther and to reach individual farmers and farmer groups not now served may be the utilization of large numbers of para-professionals both in communities as unpaid volunteer promoters and in institutions as paid auxiliaries. These modes are already in use experimentally in the MNR, where the central focus of farmer training has become the formation of volunteer agricultural promoters. Though most professional extensionists have not responded positively to the idea and the training offered volunteer promoters and other campesino leaders has been limited mostly to social motivation, there are some areas where good results are being obtained. In Choluteca there are eight groups with active promoters and approximately 15 promoters meet with the agency extensionist periodically, providing a link with the farmers. Though motivation is high, there is some confusion in the farm groups as to the role of the promoter, possibly as a result of their being selected by the extensionist, without consultation with the group concerned.

Plans are afoot to correct this weakness by beginning the promoter selection process during the course of training of campesino groups wherein their role is decided by the group. The groups would select the promoters from their own ranks and these would receive technical training in the crops of interest to the groups. Ideally, promoters would become officers of the groups and be information sources, organizers of experiments, and consultants to extensionists providing feed-back on results of group efforts. They may also serve to help introduce other forms of organizations such as 4-H and women groups. In 1978 PRH will train 550 promoters in six courses of one week duration. Longer courses, e.g., 3 weeks, with more farming content, may be desirable.

5. In-Service Training - A means available to sector institutions to upgrade on-board personnel is in-service training, developing specific areas of knowledge and skills for specific programs and purposes related to institutional goals. Within the MNR, the Human Resources Program (PRH) is responsible for this activity.

The PRH has maintained only a minimal in-service training program over the last two years but plans to expand its training of MNR personnel beginning in 1978. This training concentrates on new, socially oriented

extension methodology, administration and management, but will also include technical subjects. Much more technical training has been provided by the Agricultural Rehabilitation and Diversification Project (PREDIA) sponsored by UNDP/FAO. This training, though performed under the auspices of the MNR has not been coordinated with or related to PRH activities or other MNR activities.

In general, the PRH seems to be isolated from the training needs of the MNR or has difficulty identifying those needs and responding to them. For example, the principal activity of PRH in 1977 was secretarial training, while badly needed orientation for new extensionists went unattended. In fairness to PRH, it should be noted until early 1978 the National Extension Service lacked an adequate central direction and that a clear concept of the extension effort is still needed to serve as a basis for the design of a training plan. As a result, the programmed courses of the PRH are very general in nature. A need exists to give more specific technical courses responding to specific needs and interests. The apathy of MNR personnel and of regional directors toward the courses of the PRH is caused, in part, by the failure to respond to what are felt to be their real needs.

Another area which is lacking is the systematic provision of printed materials to extensionists and other personnel so that they can update themselves through their own reading. The PRH might well set in motion a professional journal or make sure that regional and agency libraries have enough reference materials. In general, the PRH is not making available printed materials either to campesinos or to its personnel.

Since the MNR employs more than a third (1,509 of 4,038) of employees in the public sector and even higher proportion of the total of the trained agriculturists, its ability to upgrade its staff through in-service training is critical, particularly in a period of scarcity of specialists needed for specific programs. Other sector institutions have a narrower range of activities, depend less on agriculturally trained staff and employ fewer people. Much of their staff can be selected from outside the sector and can be trained quickly on the job for specific functions. While there is a continuing need to improve staff skills in these other institutions, the need can usually be met through experience, in-house training, by hiring new and better qualified people or by long-term training without sacrificing on-going programs.

As a case in point, the National Development Bank's in-service training needs recently were examined in depth by IICA5/ in preparation for an IDB

5/ "Análisis de la Capacitación del Personal del Banco Nacional de Fomento y Formulación de un Programa Permanente de Capacitación," Lic. María Elena de Rojas; IICA Office in Honduras, August 1977.

loan. A sample of more than one-third (320) of the Bank's personnel was selected for the study and the need for additional training of Bank personnel was indicated clearly. In the sample, 78% of the staff was under the age of forty, 46% under thirty. Forty-three percent of them had less than five years' working experience and this, the largest group, averaged only 2.5 years.

Among the relatively young staff of the Bank, 93% have completed at least secondary education in various fields and hold degrees such as Perito Agrónomo and Bachillerato. University Degrees are held by 10% of the staff.

The IICA study presented a comprehensive program (presently lacking) for in-service training of Bank personnel to compensate for their lack of professional training and relative inexperience. The training effort, to be financed by IDB and the Bank, was divided into two programs. Program "A" was designed as a broad-gauged, across-the-board training program for officials and support personnel over a period of 30 months at a cost of $484,733. Program "B" was designed to meet training needs at a higher level on a permanent basis. With the implementation of these programs it would appear that the Bank is on its way to resolution of its in-service training problems; assuming that its institutional objectives are clearly defined and reasonably stable over time.

There is a clear need for comprehensive training related to institutional goals throughout the sector. One major obstacle to such programs has been the absence of clearly defined institutional goals which training should serve. Some institutions (INA especially) have had a high rate of turnover in personnel and abrupt shifts in operational procedures which have combined to create a significant gap between the tasks at hand and the ability of training programs to meet the need. Programs tailored to institutional needs must, in some cases, await the definition of those needs.

6. Scholarship Programs - The PRH has been the operative unit for selecting candidates for university-level training within the country and abroad and maintaining a record as well as a follow-up of recipients of scholarships both while they are in training and afterwards.

The definition of a need for a particular specialist originates in the various national programs or in the regional office of the MNR. These requests are presented to the regional scholarship committee, then to the internal committee for scholarships of the MNR, and finally to the scholarship committee of the agricultural sector dependent on the COCO. The PRH has a significant participation in these committee proceedings since the secretary of the internal committee for scholarships in the MNR, is the technical assistant of PRH and the Director of the PRH is a committee member. If a particular position is judged necessary

and feasible according to the priorities of the committee, the scholarship is approved and opened for public competition. The candidates generally present themselves to the Director of PRH and the selection of candidates is made by the PRH. The PRH will be in a position to develop a general human resources formation plan to identify medium and long-term needs, and candidates and especially to establish minimal requirements for selection of the candidate, the university and the area of specialization.

There appears to be a certain dissatisfaction with the present functioning of the system of awarding scholarships from the point of view of the PRH. The PRH observes that at times not enough qualified aspirants present themselves for competition and that there is doubt about the effectiveness of the training abroad. This situation militates against building a truly professional staff in the sector. Some applicants who are interested in a particular career complain that there is little long-range planning regarding scholarship openings. They claim never to know when there may be a scholarship available in that field. Consequently, whenever scholarships are open, given the candidate's general desire to improve their position and the administrator's need to send off a batch of candidates, candidates take advantage of the opportunity to get a degree and enter a higher salary category, regardless of their real desires for a specific specialty.

Annex O contains a detailed listing, by specialty, of the kinds of training needed for the immediate future as perceived by institutions in the agricultural sector. Obviously, given the need to husband scarce human resources, all of the necessary training cannot begin immediately, but must be programmed and prioritized over a four or five year period. The list should also be expanded to provide for University and Vocational School faculty development, as well as in-country education for recent vocational school graduates. Interinstitutional consultation should be close and continuous before decisions are taken at the COCO level.

The list, containing 302 potential scholarships mostly for training abroad, could represent a first attempt at creating a comprehensive picture of the specialized human resource requirements for the next 10-15 years. No attempt has been made to define priorities or identify a possible schedule. The list simply represents a point of departure for consideration subject to policy guidance. It suggests training 73 specialists in agronomy, e.g., soils scientists, parasitologists; five in statistics; seven in veterinary medicine; seven in marketing; 14 in information systems; seven in general economics; 11 in agricultural economics; 48 in various branches of engineering; 43 in planning and development; 12 in business administration; 22 in social sciences; and 53 in specialized sciences, such as genetics, botany, zoology and chemistry. To the list should be added the requirements for University and Vocational School faculty development, especially in the fields of

home economics and agricultural engineering, food science, hydrology, irrigation, and other sciences such as physics, chemistry, biology, zoology and entomology.

7. Conclusions

a. Professional Development - From the present until 1981/82 Honduran Agricultural Education Institutions will be producing technicians in the numbers, but not with the breadth and depth of technical preparation, required to meet projected public sector needs. Few of these graduates will be available to the private sector until 1982 when fully functioning schools will produce graduates well in excess of numerical demand. The problem narrows down to three elements: (1) diversity -the need to secure a wider variety of technical specialties; (2) quality -the need to secure an increasingly better prepared graduate from all institutions; and (3) women, and the need to incorporate them into the mainstream of development.

(1) Diversity - To broaden the field of indigenous expertise to include the wider variety of disciplines required for self-sustaining development in Honduras, several activities are already underway or have been identified. Training abroad at the post-graduate level are some 100 Honduran technicians. Most of these can be expected to return to take up key positions in the public sector. However, this activity should be accelerated as soon as possible to cover the special requirements listed in Annex O and, more importantly, to greatly accelerate the pace of CURLA and ESNACIFOR Faculty development.

At the same time, the CURLA development plan outlined in Annex P should be fully developed and implemented immediately to provide the physical and administrative environment needed for the full utilization of the upgraded faculty.

(2) Quality - The quality and level of Honduran agricultural technicians is on the rise. All except the Menonite Schools soon will have graduated their last Peritos Agrónomos and will have begun to produce better prepared mid-level technicians with a variety of titles. The interests of quality could be furthered by the gradual development of closer ties between CURLA and the technical and vocational schools. Consultation on course content could make some credits from ENA, JFK and other schools transferable to CURLA and applicable to an Ingeniero Agrónomo degree, providing avenues for upward mobility and improving the quality of vocational school students and graduate technicians in the working world. CURLA and ESNACIFOR could eventually provide correspondence courses which could be applied toward a degree. The creation of such linkages should be viewed as a long term effort which can begin soon but which cannot be expected to be fully operative for several years. Short term development needs and institutional frictions will

probably impede the process, but, in the long run, the agricultural education system should be united for the common good.

With an upgraded faculty and physical plant, CURLA could, in addition, offer special intensive courses in specialized fields according to projected program needs in the public sector. Some of these courses should eventually be designed to count toward the Ingeniero Agrónomo degree.

(3) Women - Living in the rural environment encompasses much more than forestry and agriculture. The home, the school and other community institutions as well as many elements of economic importance in the rural environment are influenced by women. A serious oversight has been the exclusion of subjects of particular interest to women such as Home Economics and Food Technology from the curricula of CURLA. In the reorganization of CURLA it would be advisable to develop the faculty and the physical plant needed for these and other subjects. Subsequently, a special effort should be made to move such subject matter more substantially into outreach systems, employing women as a primary, integral vehicle for change. Moreover, the interests of the agricultural sector and of women could be well served by making room for women in the vocational agricultural schools of Honduras, and the EPA where research and development in light capital technology, much of which will directly affect women, will be carried out.

b. Campesino Training - The problems confronting the various efforts to implement systems for campesino training are nearly as serious as the problems that training is intended to alleviate. This training is needed desperately; it is receiving widespread attention and it is, in its present forms, a highly wasteful and inefficient non-system. The basic deficiencies of the collectivity of non-formal training efforts that result in wasted effort are: duplication, repetition, discontinuity of efforts, irrelevance of subject matter resulting in apathy or even antipathy among the recipients, and conflicts between delivery systems. A signal failure of the total effort lies in the fact that it has neglected its largest, potentially most responsive audience -the non-reformed sector.

(1) Coordinating Mechanisms - There is a crushing need to establish policies for, and to coordinate the efforts of, all government agencies involved in the business of farmer training and collectively spending scarce resources somewhere in excess of $5.0 million a year in the effort. The functions of a national policy-making body should be to delineate topically, geographically, and by social grouping the legitimate areas of non-formal education activity to be performed by the several actors in the field. At the regional level, an administrative body should be designated to coordinate the sequence of training offered

in specific geographical areas and to specific groups and be able to insist on the participation of campesinos in the identification of the subject matter they wish to absorb. Additionally, there is a need for technical backstopping of training efforts, for evaluation, and for ensuring follow-up by appropriate field agents, coordinating for example the credit and extension functions with training, and vice-versa.

The CPA should be able, after commissioning the necessary studies, to provide the framework for coordination, both nationally and regionally. There will also be needed a technical entity which has the capability to respond to, and to resolve, technical and conceptual problems in the research, design, content, and presentation of learning packages, not only in social, organizational and technical agricultural subjects but also in environmental sanitation, literacy, nutrition and other topics related to rural development now included in farmer training activities.

V.C. INSTITUTIONAL RESOURCES AND CONSTRAINTS IN THE PUBLIC AGRICULTURAL SECTOR

1. Introduction - Over the past three years there have been numerous descriptive and analytical studies of the public agricultural sector institutions in Honduras. This chapter summarizes the conclusions of many of these studies about the most important institutional resource problems. Its focus is on structural and systems constraints within the sector.

The term institutional resources is meant here to include policy, organization, systems of management, administration, and budgeting. All analyses agree that amongst the major constraints to development of the sector are its absorptive capacity and the systems for programming, distributing, managing and effective utilization of finances.

2. Sector Policy

a. Policy Structure - Until the establishment of the Comisión Política Agrícola (CPA)1/ in February 1977, the only mechanisms for the establishment of policy in the agricultural sector were the National Development Plan 1974-78 and the annual sector operational plan, both coordinated and formulated by the National Planning Council (CONSUPLANE).

Four of the agricultural organizations - Banco Nacional de Fomento (BNF), Corporación Hondureña del Banano (COHBANA), Instituto Hondureño del Café (IHCAFE), Dirección de Fomento Cooperativo (DIFOCOOP), and Corporación Hondureña de Desarrollo Forestal (COHDEFOR) are semi-independent agencies of the government with their own boards of directors. The National Agrarian Institute (INA), also a semi-independent agency, has no equivalent policy development or deliberative structure and reports directly to the Chief of State who is its presiding officer. (See Chart No. 1 following).

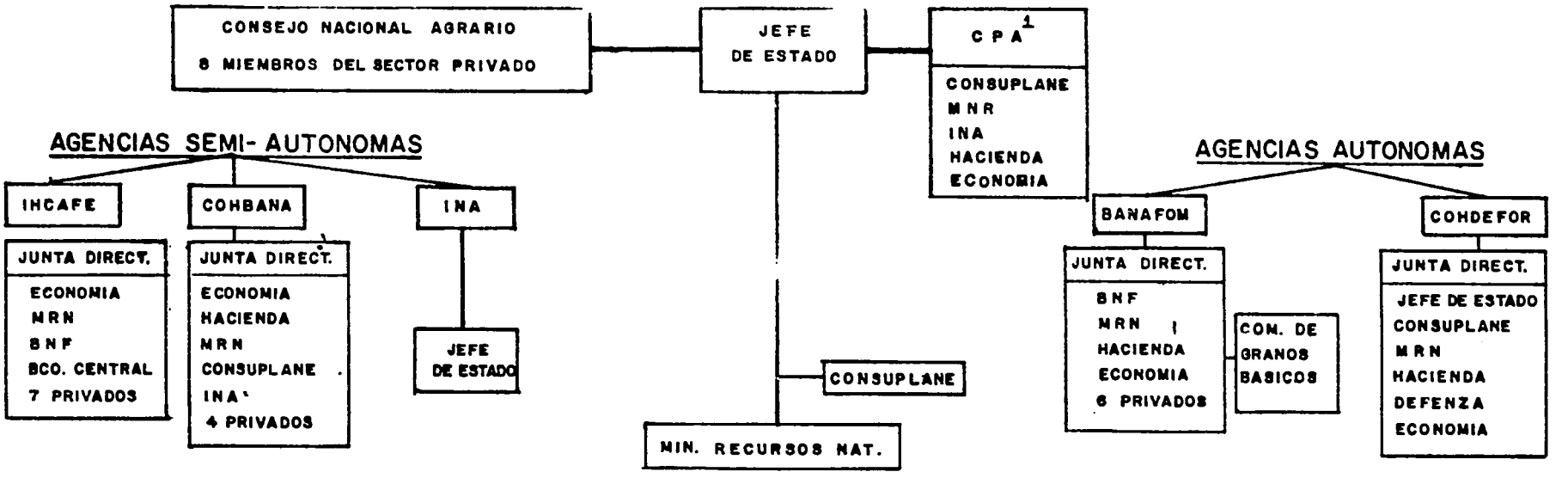
The difficulty of getting a consensus on policy issues or getting coherent deliberations of policy is apparent given the inconsistency of membership and leadership in these key agricultural sector agencies. (See Chart No. 2 following).

The Minister of Natural Resources, whose charter includes all agricultural sector functions, does not preside in any of the policy organizations, only the sector Coordinating Committee (COCO).

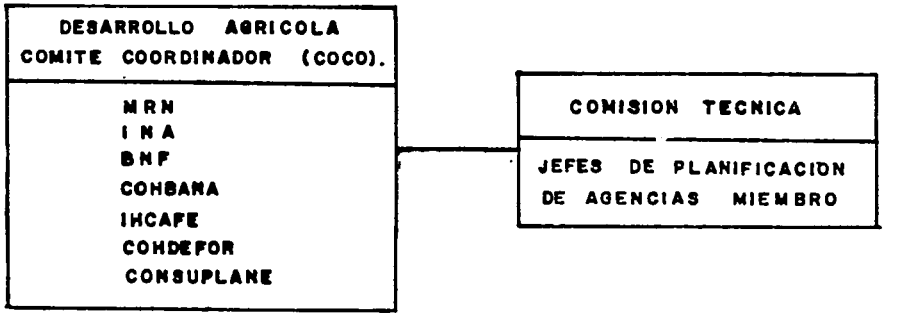
1/ See Section 3 for brief description of all organizations referred to in this report.

ESTRUCTURA DE POLITICA Y COORDINACION EN EL SECTOR AGRICOLA

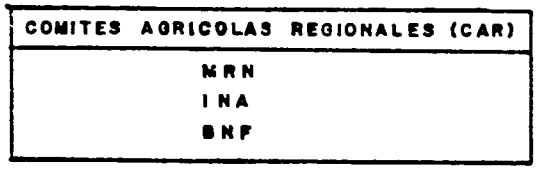
POLITICA NACIONAL



COORDINACION NACIONAL



COORDINACION REGIONAL



1 COOMISION POLITICA AGRICOLA
* OFICIAL QUE PRESIDE

LINEAMIENTOS DE POLITICA Y COORDINACION EN ORGANIZACIONES DEL SECTOR AGRICOLA

INDICE CRUZADO DE MIEMBROS

ORGANIZACIONES / MIEMBROS	POLITICA						COORDINACION	
			JUNTA DIRECTIVA					
	CPA[1]	INA	BANAFON	COHBANA	IHCAFE	COHDEFOR	CoCo[2]	NIVEL REGIONAL CAR[3]
JEFE DE ESTADO		X*				X*		
M.N.R.	X		X	X	X	X	X*	X
ECONOMIA			X	X*	X*	X		
CONSUPLANE	X*			X		X	X	
HACIENDA	X		X	X		X		
INA	X			X			X	X
BANAFON			X*		X		X	X
COHDEFOR							X	
COHBANA							X	
IHCAFE							X	
DEFENSA						X		
BANCO CENTRAL					X			

*FUNCIONARIO PRINCIPAL

1 COMISION POLITICA AGRICOLA

2 COMITE DE COORDINACION DE DESARROLLO AGRICOLA

3 COMITE AGRICOLAS REGIONALES.

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When COCO was established in 1975 as a requirement of the AID Sector Loan (025) to insure effective coordination, it was hoped by some that COCO would provide some leadership to the sector, not only in coordination of plans and programs, but that it might serve as a vehicle for identification and analysis of policy issues. However, because of the need for unanimity in its decisions and recommendations; the need for the key members to refer questions to the various policy-making boards of directors to whom they are accountable; the independence of INA with its policy-making reserved to the Chief of State, it is understandable that there has not often been agreement on or resolution of issues. COCO's coordination function has been difficult to implement because it has no effective means for oversight of the execution of plans nor any power to correct deficiencies.

The recent expansion of the role of the CPA to deal with policy and programs for the entire sector is a very important improvement which can bring more order to the policy-making structure. However, it initially has had to concentrate most of its attention on land reform problems and projects.

The CPA has recently dealt with some broader questions such as a proposal to restructure the agricultural sector and a draft law for the proposed Marketing Institute. Otherwise, the major focus of attention is on urgent financing and coordination problems of specific programs and projects. As the newly expanded Technical Secretariat of the CPA begins its work, it should concentrate on building an explicit system by which policy level problems can be identified, analyzed and resolved; and designing a structure and system for dealing with inter-institutional operational and coordination problems on a day-to-day basis. As this development progresses, the CPA can increasingly turn its attention to the solution of important policy issues and planning problems which, in many ways, have been the cause of the urgent operational problems.

There is a need at this time for an effective policy analysis capability to support the CPA. There are numerous policy questions of significance for the agricultural development plan. However, there is no substantial body of analytical talent available in the agricultural sector to do the necessary policy analysis staff work except the Sector Planning Office in the MNR which is occupied fully in project development and internal management functions.

The recently expanded Technical Secretariat will play an important role in assuring that there is adequate analytical support for decision making. However, it cannot carry out the analyses themselves in most instances, but should assist in developing the analysis capability in the planning offices of the sector agencies and organize that capability into an effective system-wide network.

or sector-wide policy, it is difficult for government agencies to analyze and evaluate needs to decentralize and modes of decentralization.

A policy is needed which incorporates development criteria as well as efficiency and benefit/cost relationship criteria to judge proposed decentralization actions. It should also include a requirement for coordination of decentralization planning, since decentralization by one agency may not be desirable if other collaborating agencies do not decentralize compatible authorities.

The above examples of policy needs are underscored by the fact that within the agricultural sector there is not a systematic way to bring policy problems to the surface, analyze alternative approaches and consequences and decide what the policy should be. There is neither an organization in the GOH which has both the role and the analytical capability to make policy, nor is there an effective institutional method to assure that policy decisions are implemented.

In sum, the many separate institutions with independent policy structures and the inconsistency of the membership of the boards of directors has resulted in fragmented views of policy issues and created barriers to developing effective, integrated and mutually supportive policies. The recently established CPA is intended to become an important factor in developing and unifying sector-wide policy. The need at this time is for a clearly defined system for policy development, promulgation and evaluation in the sector. The Technical Secretariat of the CPA needs to carefully develop both a policy system and its analytical support as well as a system for dealing with interpretation of policy and resolution of policy disputes which arise during implementation.

3. Sector Organization, Coordination, Management and Delivery of Services

a. Sector Organization - The public agricultural institutions are as follows:

(1) The BNF (Banco Nacional de Fomento)- Established in 1950 as the National Development Bank, an autonomous credit and banking agency for industrial and agricultural development, has, in the course of time, been assigned new or expanded functions:

i. Responsibility to implement the policies of a Basic Grains Commision - to establish marketing policy and prices;

ii. grain storage and marketing;

iii. retail sales of inputs (fertilizer, seeds, agricultural

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chemicals and farm implements);

iv. retail sales of basic consumer commodities, (BANASUPRO);

v. provide credit to the reform groups and coops.

More detailed descriptions of the BNF and its present status can be found in Chapter VI-D of the Assessment.

The BNF was assigned these functions because it is an autonomous institution with a flexible administrative and management structure and at the time there were no other government institutions which had the capabilities to perform the work.

A number of recent studies have indicated that as a result of its varied responsibilities, its losses in the grain purchasing business, its extension of credit to the reform sector and its legal requirement to remain self-sufficient, the Bank has been unable to effectively carry out its charter. In addition, the Bank's capital has been seriously eroded. The BNF has proposed a plan for reorganization and a new legal basis which would:

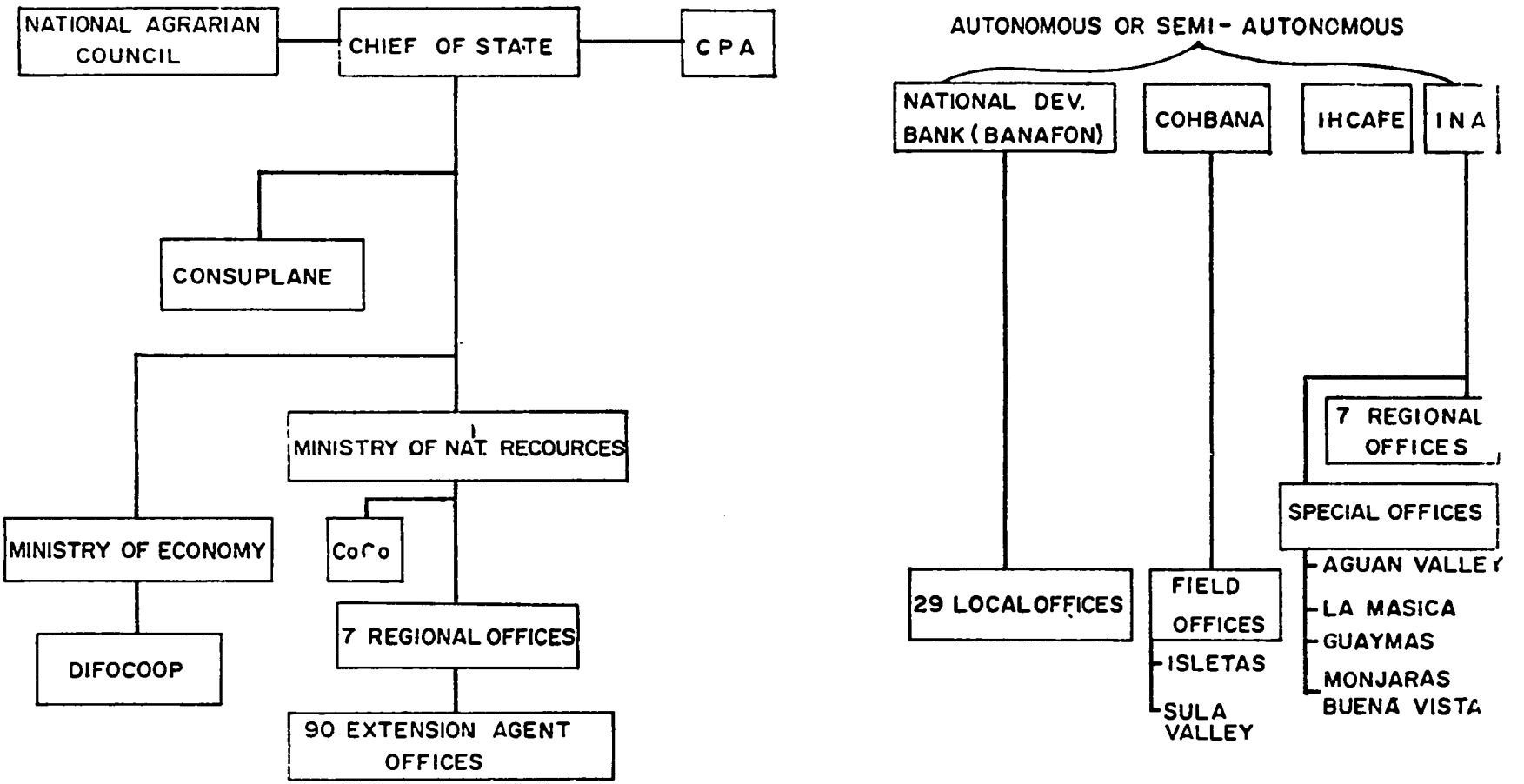
- limit the BNF to agricultural development and credit functions;
- transfer industrial development and credit functions to the Corporation for National Industrial Development (CONADI);
- establish a semi-autonomous Agricultural Marketing Institute (IHMA) to carry out grain marketing and storage, grain price stabilization and other marketing functions; the agricultural input sales operations may also be attached on a temporary basis to the Institute;
- transfer retail sales of consumer commodities (BANASUPRO) to the Ministry of Economy.

(2) MNR (Ministry of Natural Resources) - Originally established in 1954, the MNR has responsibility in agricultural development, mines, hydrocarbons and renewable natural resources (Fisheries, Wildlife, and Environmental Protection). Its staff in 1973 numbered 500. Since 1973 it has been assigned an important role to provide extension and other technical services to the agrarian reform sector. Since then the MNR has:

- organized a sizeable, competent staff in sector analysis and planning;
- established seven regional offices;

CHART # 3

AGRICULTURAL PUBLIC SECTOR ORGANIZATIONS



DECENTRALIZED

COHDEFOR = an autonomous agency for forests is not shown

- expanded its services to the reform sector.

In 1974 the responsibility for the forestry management and development function was transferred to an autonomous Corporación Hondureña de Desarrollo Forestal (COHDEFOR).

The MNR role in agricultural development has grown to the extent that it no longer seems prudent for its responsibilities to include such diverse functions as mines, hydrocarbons and wildlife.

(3) INA (Instituto Nacional Agrario) - INA was established in 1961 as a semi-autonomous land reform agency reporting to the Chief of State. It was a small and relatively ineffective organization until 1973 when it was revitalized by a new Agrarian Reform Law, Decree Law No. 8. Its current authority stems from Decree Law 170 of January 1975.

INA staff and funding authority has been greatly expanded since. At the present time INA, in addition to its land reform and social promotion functions, is also responsible for 7 agricultural development projects in several valleys. It has authority to perform all major agricultural development functions and, to a lesser extent, credit, research and marketing.

(4) COHBANA (Corporación Nacional del Banano) - This autonomous corporation was established in 1975 to increase national participation in production, international transport and marketing of bananas. It provides assistance to independent small and large owners, coops and groups on banana lands as well as managing banana projects in the Aguán and Sula Valleys on land turned over to the GOH reform program. It provides the following agricultural development services:

- credit (administered under a fiduciary fund by BNF);
- farm management;
- technical assistance in all phases of production;
- seed production;
- capital improvements;
- marketing.

COHBANA is supposed to become self-sustaining from revenues generated by a surcharge on production under its control. COHBANA is linked to the Ministry of Economy. In January 1978, the Comisión Política Agrícola (CPA) was charged with the responsibility to identify new sources of

funding for this organization and to seek opportunities to expand its role in agricultural development.

(5) IHCAFE (Instituto Hondureño del Café) - This autonomous institute, linked to the Ministry of Economy, was established in 1970 to provide assistance to small coffee farmers and coops. It carries out the following agricultural development functions: research, technical assistance, sales of fertilizer and seed, road construction, coop promotion, crop diversification, marketing information and regulation of export marketing.

(6) DIFOCOOP (Dirección General de Fomento Cooperativo)- Organized as a decentralized unit of the Ministry of Economy, DIFOCOOP is responsible for the legalization of cooperatives, oversight of the legal requirements for operation of such coops and for training and development programs relating to cooperative development. Its functions relate to all coops but the agricultural sector coops constitute a significant number.

(7) Sector-wide organizations:

i. CONSUPLANE (Consejo Superior de Planificación Económica) - This organization is responsible for national planning and has a section devoted to the agricultural sector. It coordinates the development and preparation of the National Development Plan, the Annual Agricultural Operating Plan, reviews the sector budget, coordinates external technical assistance and evaluates programs and projects.

ii. National Agrarian Council - Composed of 8 private citizens, it advises the Chief of State on the legal aspects of agrarian reform.

iii. Comisión de Política Agrícola (CPA) - This commission was formed in February 1977 by the Chief of State, who presides. The Coordinator of the CPA is the Executive Secretary of CONSUPLANE who acts in the absence of the Chief of State. The other members of the CPA are the Ministers of Natural Resources, Finance and Public Credit, Economy and the Executive Director of INA. Its functions broadly cover the entire agriculture sector:

- Assist the Chief of State in matters of agricultural development policy and in executing the Agrarian Reform Law;

- design and submit to the Chief of State organizational proposals for the development of the Aguán Valley and other zones in the country;

- receive reports from INA on expropriation of land and recommend decisions to the Chief of State;

- develop proposals for the administrative reform of the public agricultural sector;

- define priorities for the assignment of technical and financial resources to specific agricultural development programs and projects.

The establishment of this Commission was motivated by a general concern within the GOH and several reports which focused on the fragmentation of services to agriculture within the public sector, the many separate policy-making organizations, and the limited frame of reference and effectiveness of the Agricultural Development Coordinating Committee (COCO) to coordinate plans and operations and resolve policy differences.

Its charter was recently expanded (Jan. 1978) to allow it to function as a collective executive for the entire agricultural sector on an experimental basis (See 2.B above).

iv. COCO (Comité de Coordinación de Desarrollo Agropecuario) - The COCO was established in March 1975. It is headed by the Minister of Natural Resources and composed of the heads of CONSUPLANE, BNF, INA, CONDEFOR, IHCAFE, COHBANA, DIFOCOOP and a representative of the Ministry of Finance.

Its primary function is to coordinate the execution of interinstitutional plans and programs contained in the National Development Plan, coordinate, harmonize and evaluate the annual operational plans of the sector. Its decisions and recommendations must be unanimous.

The recent decisions to expand the Comisión de Política Agrícola (see above) makes the continued existence of the COCO in its present form appear unnecessary. However, careful consideration should be given to evaluating those areas where COCO has been particularly useful and effective such as coordination of externally funded interinstitutional loans and grants, a forum for announcing new policies or procedures, and for acting as a focal point for review and discussion of studies, analyses, etc.

v. The Technical Commission of COCO - is made up of the planning chiefs of the agricultural sector agencies and is headed by the Chief of the Ministry of Natural Resources' Sector Planning Office. It functions as the staff arm of COCO, conducting studies and recommending actions related to the functions of the parent organization.

vi. CAR (Comité Agrícola Regional) - These seven regional arms of the COCO are made up of the regional directors of the Ministry of Natural Resources and INA and the directors of one or more local offices of the BNF. Organized in April 1977, they are expected to coordinate

CHART #4

COMPARISON OF FUNCTIONS WITHIN THE AGRICULTURE SECTOR

FUNCTIONS	MNR	I N A (PROJECTS)	B N F	COHBANA	IHCAFE	DIFOCOOP	INFOP
RESEARCH	X				X		
CAPITAL IMPROVEMENTS		X		X	X		
SEED PRODUCTION	X	X		X	X		
INPUT SALES		X	X		X		
MARKETING			X	X	X		
CREDIT			X	X			
MACHINERY	X	X			X		
POOLS							
TECHNICAL ASSISTANCE	X	X		X	X		
HUMAN RESOURCES - FARMER TRAINING							
1) SOCIAL PROMOTION	X	X					
2) ORGANIZATION PROMOTION (COOPS, etc...)		X			X	X	
3) TECHNICAL/ PRODUCTION AND MANAGEMENT TRAINING.	X	X		X		X	X

CHART # 5

COMPARISON OF MANPOWER USE IN THE AGRICULTURE SECTOR

FUNCTIONS	M N R	I N A (PROJECTS)	B N F	COHBANA	IHCAFE	DIFOCOOP	INFOP
AGRONOMIST	X	X	X	X	X	X	X
ENGINEERS CIVIL	X	X	X	X	X		
INDUSTRIAL				X			X
MECHANICAL							X
ECONOMIST	X	X	X	X	X	X	X
LEGAL		X					
SOCIAL WORKERS	X	X			X	X	
TEACHERS	X	X	X	X	X	X	X
BUSINESS ADMINISTRATION			X	X		X	X
VETERINARIANS	X						
ANIMAL HUSBANDRY	X						
SOCIOLOGIST	X	X					

actions at the regional level.

The Problems of Organization, Functions and Projects - The following charts illustrate overlapping assignments, the duplication of functions and technical manpower, and the fragmented jurisdictions of the key agricultural sector agencies.

Many of the agencies are performing the same or similar tasks and using the same kinds of technicians. There is competition between the MNR and INA to provide technical assistance, to carry out social development programs and to provide other services at the local level. Competition for certain kinds of personnel, particularly agronomists, also occurs among INA, MNR, Dirección de Fomento Cooperativo and Instituto Nacional de Formación Profesional.

The following chart is a schematic diagram which attempts to show all the different potential functions performed and services delivered to Reform and Non-Reform areas in the Aguán Valley. In the Aguán Valley the main INA "Project Area" is in the area of the town of Tocoa and the COHBANA "Project Area" is in the Isletas district about 40 Kms. away.

COHBANA is responsible for assistance in banana production; INA assists on African Palm and citrus crops and, MNR helps on grain production, all in the same area. In one case, INA helped organize a cooperative to grow bamboo in the Isletas area, but could not deliver the technical assistance; COHBANA had to intercede and bring in technical help.

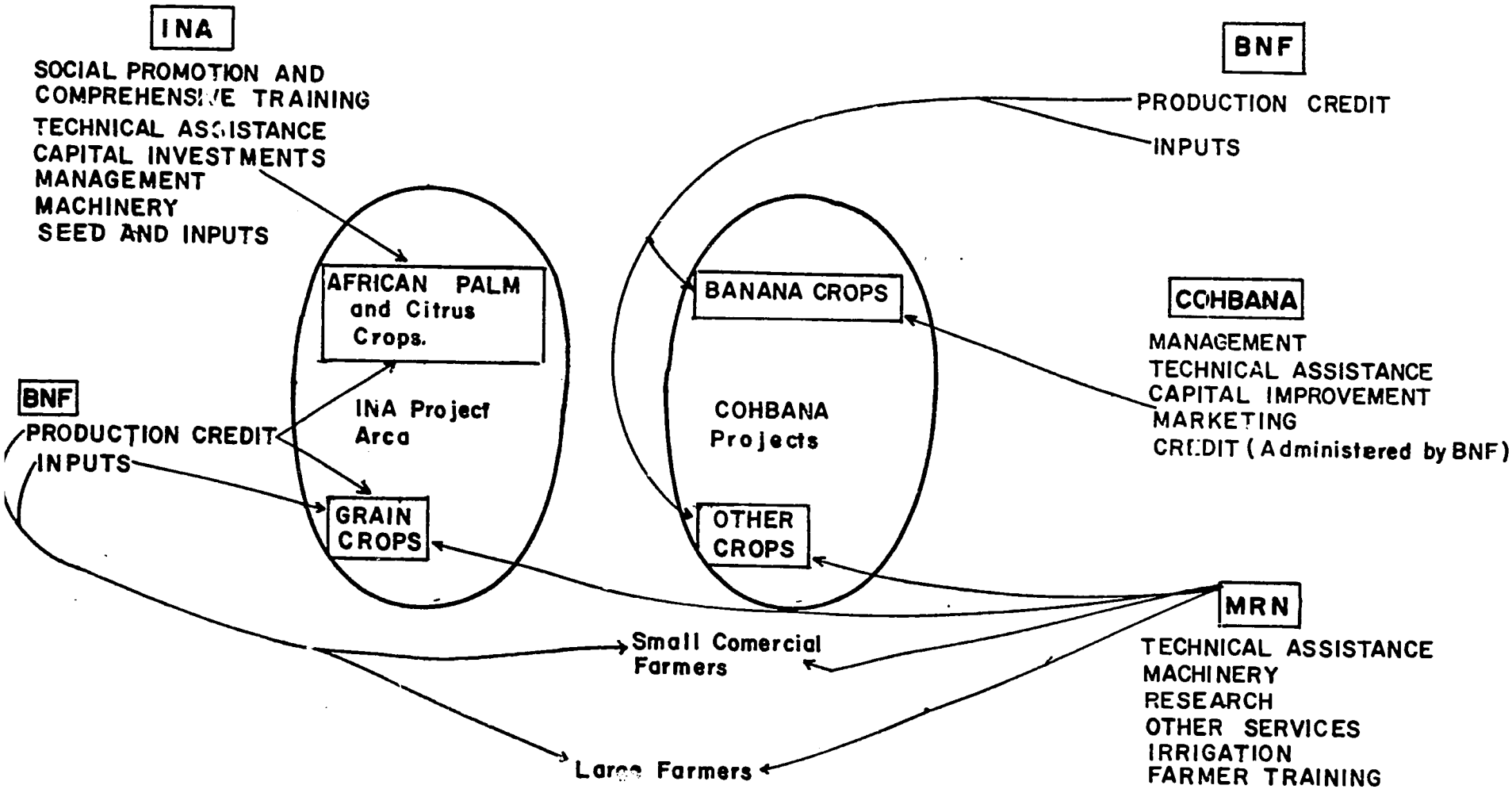
Many of the cooperatives in the Tocoa area grow African Palm, citrus and grains and must rely on both INA and MNR for technical help. Seeds and inputs are provided by INA for the palm and citrus as well as capital improvements, such as land leveling and drainage. BNF provides credit for production and family maintenance as well as seeds and inputs for the grain production. MNR provides extension services for the grains.

The above is descriptive of how crop specific projects and the complex organization of services may create severe problems of not only coordination of assistance but also crop planning and investment planning for the individual farm group.

The difficulty of coordinating resources and programs among the major agriculture agencies is obvious. The potential for misdirection of key resources in an area and the need for close coordination and flexible readjustments are critical. When these considerations are coupled with the fact that individual agency operating program and resource plans can be and are changed without reference to the other affected agencies; and that policies and authorities of each agency are different and at times contradictory, it becomes clear that serious

CHART # 6

DELIVERY OF SERVICES TO THE AGUAN VALLEY



consideration must be given to establishing a single authority and decision-making structure at least at the regional level.

Within the key agricultural agencies there are many structural, functional and authority problems which call for action. In the MNR its four-year effort in decentralization and establishment of regional offices and expanded local offices has not been completed. The responsibilities and authorities of its regional offices have not yet been well defined. Some regional directors all but ignore the policy and operational requirements of some national programs, such as extension and human resource development. At times they transfer funds between programs and revise program schedules without regard to the approved budget and operational plan, and without consultation with either the national headquarters program directors or budget office. Often they do not consult their own regional program directors.

The MNR should carefully delineate the appropriate division of authorities and responsibilities between the national program offices and the planning and budget office on the one hand and the Regional Offices and programs on the other. Regional directors must not only be responsible and accountable for carrying out approved national level plans and programs within the guidelines and standards established by the MNR, but they should have reasonably adequate and flexible authority to achieve the goals for their regions.

For the past four years, INA's organization has been in a constant state of flux. This is at least partially due to the rapid change of top management personnel. Other important factors are the continual urgent operational demands which the Aguán Valley and other projects place on the time and talents of the INA management structure. This has resulted in a shift of personnel and other resources from other programs. As a result, the organization responds in less than a systematic manner to development projects and its more important functions such as land affectation, and campesino organization and social development do not get the level of management attention needed. The organizational emphasis is thereby distorted in favor of the demands of its development projects and orderly planning and development of programs and institutional resources suffers accordingly. Consideration should be given to conducting a major organizational study of INA. The objectives would be to achieve balance among its various functions, to improve its organizational stability and to develop improved internal management systems and capability and improved utilization of resources.

Another substantial problem involves five agencies in the sector, i.e., which agency is responsible for interpreting the national plan and strategy for achieving both production and social goals and subsequently determining which crops are to be promoted and the appropriate technology for each such crop.

At the present time, there is no consistency in assistance to farmers in crop choice, technology and in the content of the training that is provided by MNR extensionists, MNR human resource training programs, INA agronomists and PROCCARA training programs, INFOP trainers, BNF agronomists and DIFOCOOP programs.

Immediate consideration should be given to assigning the responsibility and authority to MNR to interpret the national goals and translate them into appropriate crop production technology and other non-crop farm activities which produce income and employment such as livestock, tree crops, etc.

In conclusion, the current fragmented agriculture sector organization; duplicative functions, duplicative and competitive manpower structure; uncoordinated agency policies; ineffective coordination of operations and lack of flexible authority and operational resources in the field, are inhibiting effective and efficient delivery of development services to the agricultural sector.

The fairly new regional structure of INA and the Ministry of Natural Resources and the prospect that BNF will soon establish a regional structure, coupled with the new Comité Agrícola Regional (CAR) should improve the coordination of services in the field. However, effective authority is needed at the operational level to harmonize plans and insure coordinated delivery of services and interinstitutional efforts.

Increasing pressure from external financing agencies to further fragment the agricultural sector into more vertical projects is a serious problem, and a potential drain on resources. This problem will only be resolved over the long run by improving the internal effectiveness and responsiveness of the sector agencies in the management of its projects.

Concern for the organizational problems in the sector is not lacking. Many efforts have been undertaken in the recent past which have resulted in improvements within agencies and in better coordinating mechanisms. The overall improvement in the organization and functions within the entire agricultural sector needs a focus of effort. Given its role in the sector, the CPA should take on the responsibility to periodically review the sector organizations in order to minimize or eliminate duplicative and overlapping functions, responsibilities, programs, etc. The CPA should also consider and review current policy and criteria for establishing semi and autonomous agencies, and clarify which kinds of functions and roles are more appropriately reserved to the central government.

b. Planning, Budgeting, Management, Coordination and Administrative Systems

(1) Planning, Budgeting and Management Systems - The organization and capacity of the public agricultural sector in planning, management and coordination has been improved in the last 3 or 4 years. However, the capacity at the national level could be better utilized. The planning that has been done has had limited impact on the accomplishment of results. At the local level, national plans are not well understood. Approved plans which require collaboration of several agencies are sometimes ignored by participating agencies or revised without adequate consultation.

Planning within the sector so far has been focused at a national and somewhat generalized view of the needs and conditions in agriculture. A perceptive vision of the real world and problems that have to be dealt with adequately at the local and regional level is not reflected in the national level plans. Regional offices need to have strengthened planning staffs and a planning process which not only attempts to achieve effective coordination of available institutional resources, but, more importanly, is capable of bringing to both the national and regional plans realism in terms of actual conditions and needs at the local level, potential productive capacity of natural and population resources and zones of development potential based on hard data and competent analyses. Such a planning process could be used as a vehicle to involve participation of local farmers, groups and coops, thus not only adding more relevance to planning and programming efforts, but establishing a mechanism for communication and dialogue with the clients of government services.

One possible device for improving this situation would be for the CPA to provide leadership in establishing a sector-wide "regional planning development and assistance group" including representatives of INA and MNR. It would serve in a support relationship and help to develop regional planning capability and processes; assist in adjusting and readjusting the regional and national plans to the existing situation at the local level and to the global and inter-regional objectives at the national level.

Existing coordinating organizations at the national and regional levels are largely ineffective and cannot resolve disputes.

The recently established CPA is an important mechanism to consider disputes and coordination problems. It needs to build its capability to resolve issues which involve conflicting interests of the participants. There is also a need for clear-cut responsibility to be assigned and a system designed to assure that sector-wide and inter-institutional efforts are coordinated and results are evaluated.

Programming and budgeting of resources in the agricultural sector is mainly focused at the project level and not in terms of objectives

or goals. In addition, each agency develops and defends its own budget independently of other key agencies. The only overview of the agricultural sector resources is found in the agricultural sector office of CONSUPLANE and in the Dirección General del Presupuesto, Ministry of Finance, neither of which have the staff nor necessary detailed information to effectively program resources in an integrated manner. Nor should these organizations fill the sector planning and programming vacuum if the executive agencies in agriculture are to develop into wholly responsive and responsible organizations.

Although planning and design of projects have improved substantially in the MNR recently, system management, execution, review and evaluation need improvement. Other agricultural agencies manage their projects in an unsystematic and sometimes ad hoc manner.

The vacuum in management of projects is being filled by the Office of Budget Management which recently established a Project Control System and is applying critical path methods to some 25 projects in the public sector on an experimental basis. This development, if pursued to its logical conclusion, could lead to management control of projects by the Office of Budget Management and would jeopardize the orderly maturing of the executive agencies in the sector.

Middle and lower level management throughout the public sector agencies is still a major bottleneck in effective program execution. Most supervisors and middle management personnel lack quality technical training in their fields as well as basic understanding of how to manage their programs, operations and resources. At these levels most sector agencies lack explicit systems, guidance and procedures for operational programs and for planning, programming, budgeting and administration. Support units charged with these responsibilities typically operate without benefit of written procedures and operating manuals. As a result, operating officials learn how these important systems can work in their support largely through trial and error. With a relatively high turnover rate of technical/operating personnel, it is understandable that few operating officials have effective management control of their resources and programs.

(2) Administrative Systems - Many of the studies in the last few years have concluded that the agricultural sector is plagued by slow, cumbersome and overburdened administrative and paperwork systems for personnel, procurement, purchasing, fund allocation, refinancing of rotating funds, voucher processing, operating expenses, etc. Excessive centralization of approval for all such actions as well as lack of simple procedures and guidance for such systems is also a continuing problem.

Most of the problems that reduce the operational effectiveness of the Ministry of Natural Resources, in particular, are caused by complex and centralized systems in Hacienda and Servicio Civil for financial management, allocation of resources, personnel appointments, procurement and contracting.

The semi-autonomous agencies, by virtue of their status, are only subject to national procurement and contracting policies. As such, they have wide latitude of action and authority in financial, personnel and procurement actions. However, the central offices of these agencies continue to exercise control over all personnel actions, as well as procurement of major items and contracting.

Another factor which influences management performance in the field is the lack of authority to assure operational coordination and to resolve policy and guidance differences among MNR, BNF and INA.

Given these constraints on the delivery of services to the sector at the regional and local level, field personnel cannot be held accountable for their performance.

Although there have been recent efforts to carry out internal procedural improvements, to delegate greater authority to regional and local offices, to provide rotating funds for operating expenses and other such actions, there are still serious problems in these systems which cause not only inefficiencies, but also breakdowns in continuity of operations, late delivery of time-critical inputs, failures of projects, loss of transportation and equipment for lack of maintenance, inability to cope with emergencies, and ineffective use of limited manpower resources.

Many sector organizations are already established as autonomous, semi-autonomous or decentralized agencies and there was a recent effort to decentralize the MNR research and mechanization programs. There are also many other projects such as the IDB-financed corn and bean project in Danlí and the Aguán Valley Project, which represent semi-autonomous projects within the MNR and INA, respectively. A recent proposal by the IBRD to finance a project in the Juticalpa area proposes two alternative project management organizations which, in effect, would be semi-autonomous within the MNR.

This profileration of agencies and projects stretches thin limited executive manpower; creates competition among organizations for the same small technical manpower pool; increases the array of coordination and control mechanisms; dissipates the authority of the agency head; and seriously reduces the ability of the government to control the agricultural development program.

At the present time there is only one Agricultural Sector organization which is a centralized component of the central government, the Ministry of Natural Resources (MNR). The role of this organization within the sector has been weakened by the splintering of the sector functions and programs, assigning them to INA or, establishing new autonomous institutions, i.e., COHBANA and COHDEFOR. In addition, the MNR is burdened by responsibility for mines and hydrocarbons, fisheries and wildlife which are not well related to its important agricultural development role. The Ministry of Natural Resources has a very limited role and effect on policy and coordi-

nation of the sector and its share of the total sector-wide budget represents approximately 20 percent.

Many observers and key officials have stated that the justification for establishing autonomous and semi-autonomous agencies is mainly to free up those organizations from the fiscal, procurement, personnel and other managerial constraints of the central government. Those actions have, in turn, resulted in reducing the executive authority of the central government over its agricultural program. A serious effort is needed at the national level to reduce the constraints that led to this condition.

In conclusion, the organization and capacity of the public agricultural sector in planning, management and coordination have improved substantially in the last 3 or 4 years. However, the capacity at the national level could be better utilized. The planning that has been done has had limited effect on the accomplishment of results. Programming and budgeting of resources is carried out by each sector organization in an almost independent manner and is largely focused at the project level. Agency programs should clearly and directly support the objectives of the national plan.

An integrated sector-wide planning, budgeting and management system is needed. This should be developed by the CPA. It should have clear guidance, responsibilities, and the authority necessary to assure that interinstitutional plans and budgets are executed and managed well.

The generally unsystematic management of projects needs to be improved. The recently expanded capability in project management of the Office of Budget Management could be best used to assist the executive agencies in the agriculture sector to train project managers and provide advice and assistance to improve their managerial capability.

National level management and administrative constraints particularly affect the three principal agencies, the Ministry of Natural Resources, the National Agrarian Institute and the National Development Bank and reduce their ability to operate with optimum efficiency. These constraints appear also to have been a main cause for the establishment of the many autonomous agencies in the sector.

CONSUPLANE and the National Committee for Administrative Reform should consider an aggressive effort to bring about needed reforms in national level laws, regulations, etc. in government administration which especially hinder the effectiveness of the executive agencies in the agricultural sector.

Within the sector agencies there is a need for explicit systems, guidance and procedures for operational programs and for planning, and management functions. Planning, budget, administration and systems analysis staffs of the sector agencies need to be strengthened and expanded as do each of their regional offices. The CPA should provide guidance to this

effort and the Office of Budget Management should use its substantial skills in this area to provide technical assistance, training, advice and guidance.

The CPA should spearhead an effort to develop a planning process at the regional level which focuses on local development potential, effectively involves farmers as participants, and is used to adjust national and regional plans to local realities.

V.D. INSTITUTIONAL RESOURCES: CAMPESINO ASSOCIATIONS AND OTHER NON-PROFIT ORGANIZATIONS

1. General Description of Organizations - The current pattern of ampesino, cooperative and quasi-cooperative organizations related to he agricultural sector of Honduras is complex. The following is a unctional listing of the groups involved. (See Annex A for detailed escription of each).

Functional Listing of Campesino Cooperative
and
Quasi-Cooperative Organizations Related to
The Agricultural Sector

ote: An asterick (*) indicates that an organization serving the tra-itional sector may also be serving, to a modest extent, some reform roups. A dagger (+) indicates members of the Confederation of Cooper-tives.

a. Organizations Serving Primarily Agrarian Reform Groups

Campesino Organizations and Sponsors	Support Organizations	Productive Units
ANACH	ANACH Plan Cooperativo	Subseccionales of ANACH
UNC	CONCORDE (FUNDHESA, APCH, and PPA)	Ligas Campesinos of UNC
FECORAH		Cooperativas de FECORAH
UNCA	CONCORDE (FUNDHESA, APCH, PPA and Pre-Federation of Servicios Múltiples)	Cooperativas and Ligas Campesinas of UNA Independent Cooperatives
		Empresas Asociativas de Campesinos Independent Reform Groups without personería jurídica

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b. Organizations Serving Primarily Traditional Groups

Confederations, Federations and Sponsors	Cooperatives and Associations	Productive Units
CONFEDERATION OF HOND. COOPS (Including Institute for Coop. Education & Research)		
+ FEHCOCAL (Coffee)	*Coffee Cooperatives	Individual farmers
+ FACACH (Credit Unions)	Credit Unions	
+ FECOAGROH (Gen'l Agric.)	Agricultural Coops	A few group farms (some within and others outside agrarian reform)
+ FENACOCAL (Sugar)	Sugar Cooperatives	
INCAFE	Coffee Producer Committees	
COHDEFOR DIFOCOOP	Forestry Coops	
+ FECAFOR	Forestry Coops	
* PRE-FEDERACION DE SERVICIOS MULTIPLES	*Consumer Cooperatives	
	*Cotton and other special product coops.	

The reform sector is the most extensively organized in the sense that each reform group is organized as a cooperative or quasi-cooperative (Subseccional of ANACH, Liga Campesina of UNC, Empresa Asociativa de Campesinos under the agrarian reform law, or simply "asentamientos"). Over two-thirds of the groups are affiliated with national campesino organizations, which in order of size are ANACH, UNC and FECORAH. The campesino organizations, especially ANACH and UNC, have been primarily concerned with campaigning for land reform. Since most of their groups now have land, their current emphasis is on obtaining Governmental economic support for these groups. ANACH has a small supplementary Plan Cooperativo of its own for economic support to its groups; UNC groups receive some support through another Christian Democrat organization -- CONCORDE. With the exception of a very few reform groups that belong to

cotton and coffee cooperatives, none is affiliated with or receives support from national or local cooperative movements providing economic services. 1/

In the traditional sector, small farmers, with few exceptions, are served neither by Government extension services nor by agricultural cooperatives. The major exception is the coffee producer, about one-sixth of whom are served by effective coffee cooperatives and some others through extension services and producers' associations sponsored by IHCAFE. FECOAGROH, the general agricultural federation, has few members and is largely inactive. Cooperativas de Ahorro y Crédito (credit unions) have few farmer members and usually no agricultural services, though special projects to provide services to several hundred small farmers have been recently organized. A few thousand small farmers are served by consumer goods cooperatives, which also have a few agricultural projects. Over 3,000 small forestry workers (many of whom are also farmers) have been effectively organized into cooperatives by DIFOCOOP and COHDEFOR.

Larger farmers are primarily served by AGA's (Associations of Ranchers and Farmers), united in a national federation (FENAGH), which represent their interests but do not operate as cooperatives. They are also served, to some extent, by cooperatives for special products such as coffee and cotton.

2. Impact of the Organizations

a. Impact on Development of the Reform Sector - In the organization and administration of group farms, the reform groups have received most of their support directly from GOH agencies. Only two non-governmental agencies have been involved in the Reform Sector: ANACH, especially through its Technical Department and associated Plan Cooperativo; and CONCORDE, especially through its Programa para la Promoción Agrícola (PPA), administered by Honduran Popular Cultural Action (ACPH), which also serves the UND. These programs are described in Annex A. Neither has had major impact of a permanent nature. They were created prior to 1973, before the large scale creation of reform farms took place under the authority of Decree No. 8 and have not had the resources to deal with the increase in the number of groups and the size of their needs. Neither have they as yet, found a way to complement rather than essentially duplicate the more extensive and heavily financed state programs.

b. Impact on Individual Farmers - The impact of cooperatives on the 149,000 individual farmers of Honduras can be summed up in two sentences: A number of specific groups of farmers are being served well

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1/ FECORAH is organized as a second-degree cooperative, but performs basically only in a representational role for its affiliates.

with a range of agricultural services that they need and want. The majority of individual farmers, however, are not members of cooperatives providing agricultural services, nor is there any cooperative organization in the country with an extensive program of organizing and serving them.

The organizations that are rendering significant services to particular groups of producers are almost all organized along specific commodity lines -- mostly export oriented. For coffee, the producer cooperatives united under FEHCOCAL (Honduran Federation of Cooperatives of Coffee Growers) reach 6,000 farms (16% of coffee growers). It does a good job in marketing and in providing technical assistance, inputs, and help in obtaining credit to its members, the majority of whom are medium-size producers with holdings ranging from 3 to 9 hectares. FEHCOCAL works closely with APROCAFE (the private coffee promotion organization) and IHCAFE (the Government coffee institute) in such matters as developing new cooperatives and small informal associations of producers, and constructing new coffee processing facilities. Thus, the coffee cooperatives are part of a larger system involving the total process of coffee production, processing, marketing and promotion. For cotton, the situation is very similar to coffee. Other cooperatives dealing with small groups of farmers and concerned with such products as sugar cane and animal feeds also appear to be effective.

As indicated earlier, the great majority of campesinos farming individually in Honduras do not have the support of any cooperative. Indeed, these campesinos--which constitute the majority of the rural population--have practically no support from any quarter whatsoever. Very few of them receive any technical assistance or have access to credit from any institutional source. In short, they are the large campesino majority that is almost totally left out of any agricultural program, public or private, undertaken in Honduras.

The question, then, is less one of describing the impact of programs upon the small, independent farmer than of discussing the reasons why they have been left out of the process of rural organization. Let it be said at the outset that we do not proceed with the a priori proposition that their lack of organization and outside support places them in the worst of all possible positions. There may be some advantage to being unorganized and unassisted than to be poorly organized and poorly assisted. Indeed, a recent survey indicates that a slight majority of the independent campesinos (in the North, South and Olancho, where the survey was taken), responded negatively to an inquiry as to whether they would like to join cooperatives. This stands in marked contrast to most Latin American countries in which interest in joining cooperatives is almost universal.

It is hard to avoid the conclusion that the relatively unenthusiastic attitude towards cooperatives on the part of the unaffiliated Honduran

campesinos is a reflection of generally negative past experiences that some have had with cooperatives and the general neglect that the cooperative movement has shown toward them. The most ambitious effort to organize a broad-based cooperative movement of independent campesino producers was FECOAGROH. FECOAGROH raised expectations among the campesinos and in attempting to fulfill them, become insolvent. An agricultural federation that is insolvent and provides no services can hardly provide a pole of attraction. The experience of small farmers with credit unions has likewise been largely negative. Some early credit unions organized by the Catholic clergy and others with slender skills in the organization of agricultural cooperatives and little financial backing raised expectations that could not be fulfilled and most such cooperatives have collapsed. While FACACH has provided leadership in creating a viable credit union movement, it has generally avoided recruiting the independent small farmer even in its rural (pueblo) cooperatives. Thus, the average individual small farmer has no vision of a cooperative which is of people of his kind with an interest in him or a program that will be of benefit for him. So far as direct experience or hearsay can teach him, the cooperative movement is for other people but not for him. The cooperative movement has simply passed him by.

What is true of the attitude of the average campesino has its counterpart in the attitudes of Government officials concerned with rural development. In most developing countries, Governments seek to encourage small producers to affiliate in cooperatives or other groups so that they can work with them more effectively in providing technical assistance and other services and support. In Honduras, however, the urgency of dealing with the much smaller but politically more visible agrarian reform sector has resulted in little attention being given to the problems of the small independent producer (outside specialized fields such as coffee mentioned above). No doubt the attitudes of Honduran Government officials are also colored by impressions of the past inabilities of rural cooperatives to serve the broad constituency of small farmers.

There are, however, a few small programs that are beginning to bring some benefits to limited numbers of small producers. The most significant of these is that of FACACH, which has begun cauticusly to establish pilot programs to work with small producers. While only a few hundred farmers have been involved to date, the results have been encouraging.

In the final analysis, the small independent farm sector of Honduras is too large and important to be neglected. The inability of the State to reach and provide useful support to small farmers on an individual basis is beyond dispute. The development of some form of small farmer organization, whether the word cooperative is used or not, is not simply one alternative. There is no other way to go. What is needed are newer, more imaginative and more sustained efforts to develop viable organizational structures and programs.

3. Possibilities for Improved Organizational and Support Systems

a. The Agrarian Reform Sector - There has been no quantitative lack of effort to make group farming work, but rather deficiencies in the continuity, coordination, purpose and quality of the total effort being made. The basic need is for effective management, both within the reform groups themselves and with regard to the support services that are needed by the groups.

When problems are observed in the functioning of reform groups, the solution is all too frequently to design new courses to train either the campesinos or the people working with the campesinos. However, courses are not designed to adequately meet training needs nor is there systematic follow-up work done on the courses. For example, courses given in accounting are often too complex for campesino needs and are without follow-up visits to ensure proper application of what was learned. There is a program of multi-year farm development planning, which will usually require substantial long and short term credit. Unless such planning is married to an organized system of farm management assistance, however, the risks of loan defaults can be very high.

One possible organizational change which has potential for improving management internal to the farms and externally in the support provided to them is the creation of Reform Group Zonal Centers, which would replace the current pattern of services and visits now provided by INA, MNR, DIFOCOOP and other government agencies. A discussion of this technique and a description of how it could function is found in Chapter VI-A on Agrarian Reform.

b. Traditional Small Farmer Sector - In Honduras, as in other countries with dense population in rural areas, there is no effective way in which small farmers can be reached and assisted on an individual basis. To attempt to do so would require the expansion of extension services beyond any practicable limits. Further, if credit were to be supplied on a broad scale, both costs and risks would be excessive.

There are very limited opportunities to organize and reach small independent farmers through existing cooperative organizations. The existing agricultural federation (FECOAGROH) is not viable.

There are, however, limited but advantageous opportunities for reaching some farmers through two strong existing cooperative federations--FEHCOCAL, the Federation of Coffee Cooperatives, and FACACH, the Federation of Credit Unions. The DIFOCOOP/COHDEFOR forestry cooperative program also provides such opportunity.

FEHCOCAL is interested in developing its program to encourage farmers in coffee areas to increase productivity rather than to expand the areas

unproductively dedicated to coffee. As a complement to this, it desires to assist producers to diversify into other products. The pursuit of this objective, which is shared by IHCAFE, makes economic sense. Progress toward its achievement should expand both the gross value of national agricultural production as well as the aggregate incomes of farmers. FEHCOCAL would need additional resources for this program.

FACACH has supported a number of small agricultural projects through numerous cooperatives in such fields as basic grain production. Statistical data on some of these projects indicate that they have achieved higher productivity while obtaining good results in credit recuperability. To continue a program such as this, FACACH requires long-term financing for the orderly development of this program; it desires and needs the lowest possible interest rate in order to provide accompanying technical assistance.

COHDEFOR and DIFOCOOP have made good progress in developing forestry cooperatives that provide significant income to campesinos, often in areas of limited employment opportunities. They are interested in expanding cooperative development not only in forestry but also agroforestal activities such as cacao, apiculture, and controlled grazing in forest lands.

In addition to these limited possibilities of further development of existing cooperative programs, it may be desirable to establish a new cooperative system that will organize and reach the bulk of small individual farmers. The best model for such a system would be the establishment of regional cooperatives with personería jurídica. These would work with farmers in the aldeas through more simply structured local farmer associations. The aldea level associations would provide the group structure not only for the operation of the cooperative program but also for the provision of related extension services provided or financed by Government.

The precise design of a regional cooperative program for small independent producers requires, of course, a specific project study. However, the following are features that are suggested: (a) a savings for autofinancing and to control and diversify credit risks; (b) programs of input supply and marketing assistance; (c) programs of technical assistance balanced among basic grains, a manageable number of diversified crop and animals; (d) substantial use of village level paraprofessionals; (e) avoidance of village level bookkeeping and stockkeeping through mobile units that combine functions of savings and credit and input supply. A fuller description is found in Annex A.

V.E. PHYSICAL INFRASTRUCTURE

There have been a number of studies of the physical infrastructure in Honduras. Together these have examined the various components of infrastructure (irrigation, drainage, roads, grain storage facilities, transport, communications and electricity), evaluated the present adequacy of the system and recommended various priorities for development and investment programs. The basic purpose for all of these studies was to rationalize the investment in rural infrastructure in accordance with agricultural development potential and priorities. Three of these provide the basis for most subsequent appraisals or evaluations. These are: the FAO/IBRD Irrigation Report of 1970; the Tripartite Report of 1975; and the Plan Maestro Vial (PMV) which was only recently completed.

These three studies deal with various components of the infrastructure system. All of them tend to criticize the present system of planning and implementation. Each proposes somewhat different remedies. First, the PMV proposes the selection of priority valleys on the basis of a benefit/cost relationship, and to fulfill the basic infrastructure requirements for specified development objectives in each valley in accordance with this priority. Secondly, the FAO/IBRD and Tripartite studies temper the requirements by a judgement of absorptive capacity. In effect, they propose to slow down financial investment somewhat while developing the capability of the people and the institutions to more efficiently implement the infrastructure programs and to more effectively utilize the results, especially in irrigation.

A third approach to the problem of limited infrastructure in potentially important and already settled agricultural areas is probably better suited to the needs and the capability of the GOH. This is the "integrated package" approach based on regional and sub-regional planning and zonal concentration within regions for agricultural and directly related investment purposes. Under this concept, regions in the planning process, would identify priority zones or areas where investments in infrastructure would result in a high benefit/cost return to target groups, in terms of agricultural production over the medium and short term. Integrated packages would be developed which would spell out the needs in terms of infrastructure components (roads, irrigation, drainage, etc.), availability of production inputs (credit, seeds, fertilizer, etc.) and the marketing system (transport, storage, buyers, etc.). This integrated approach fits in well with the present regional organizational structure of the MNR because the preliminary planning would be done at the regional level and would be more likely to reach the people. Such a program based on the needs of people is likely to be much more viable politically than one based upon the development of sparsely inhabited areas.

Leaving aside the question of how planning should be carried out, it is useful to look at the present status of the various infrastructure components in making judgements concerning investment policies and program direction.

1. Irrigation

a. Present and Potential Uses - Among the primary and potential uses of Honduras' water resources are irrigation, hydroelectric power production and potable and industrial water supply. Brief mention has already been made in Chapter VA above of the relatively low levels of utilization for all of these purposes. Only the agricultural use will be discussed here.

Roughly 1,000,000 has. of first and second class land suitable for the production of annual crops exists within the country. Only about 50,000 has. are under irrigation, including 35,000 has. in bananas for export. Nearly 5,000 has. are in private hands and planted to sugar cane and other export crops. The Ministry of Natural Resources (MNR), through its small irrigation project program, maintains a number of small irrigation works which has brought approximately 10,000 has. under irrigation. However, only about one-third of this land is currently irrigated primarily due to the inefficient irrigation methods employed by the farmers, poor design and administrative problems, poor land preparation and inadequate drainage.

The MNR hopes to bring an additional 100,000 has. under irrigation within the next ten years. Such a goal is overly optimistic in view of: (1) the limitations on the ability to complete the necessary studies, financial and contractual negotiations and the construction for such a massive program and (2) the limitations on farmers' ability to utilize the water effectively once the projects are finished.

Following is the present status of the principal water projects in the study or development stage:

Comayagua - The IBRD has taken the position that the tenancy problems must be resolved, an acceptable law and regulations governing the use of water must be adopted and implemented, and an organization capable of managing the project must be established and adequately staffed, before it will be willing to finance any expansion. The Federal Republic of Germany and the CABEI have been approached for financing but it is unlikely that significant assistance will be given until the basic problems are solved.

Choluteca - Tests of sub-surface water indicate that there is a serious problem of salt water intrusion. The most recent study of the area by JICA (the Japanese International Cooperation Agency) proposes a multi-purpose hydroelectric, irrigation and flood control project for the Choluteca River basin that could cost several hundred million dollars.

There is a need for a major development of surface irrigation to support the additional 15,000 hectares of sugar cane required to supply a new mill now nearing completion. An attractive feature of the project is the fact that asentamientos have been organized to grow cane for the mill. This would be a good cash crop for hundreds of small farmers in the region. There has been no clear decision as to how the water resources of the valley will be best utilized; however, and it may be several years before the various studies are completed and the necessary decisions made.

Guayape - In the Guayape, CIDA is studying an irrigation system and the IBRD an integrated program of production and credit. Asentamientos have been established in the region that will profit from the proposed 10,000 has. project. This project has all the elements necessary to give it a high priority. It may be ready for implementation in 1978-1979.

Sula - A study of integrated development for the Sula Valley is being financed by BID. This flood-control/irrigation project should receive high priority. The GOH should make sure that the project includes studies of the Guaymas area where an estimated 50,000 hectares can be improved by adequate drainage.

Quimistán - A feasibility study for 3,000 has. is being completed but tenancy problems will make it difficult to get financing from international institutions. The Florida and La Entrada projects are still at the pre-feasibility stage and have a fairly low priority.

Bajo Aguán - The Bajo Aguán is receiving major assistance from BID. Some irrigation is included in the present program but it encompasses only a fraction of the irrigation potential of the valley.

In addition to the large projects mentioned above the Irrigation Department is involved in the construction of small irrigation works. Its present capacity is 600 to 1000 hectares added to small irrigation projects each year. Department staff supervise the work which is carried out under contract by private Honduran companies. These companies have a capacity to do 2000 to 2500 hectares per year but there are insufficient supervisory staff to permit any expansion of the program. A total of 8,885 hectares is scheduled to be brought under irrigation in the 1977-84 period at a cost of Lps. 19,348,407, about Lps. 2,200 per hectare. The addition of 3 or 4 supervisors would permit the program to be doubled. This should be done.

Eleven technicians of the Irrigation Department have been sent to the U.S. for specialized training in the engineering and production aspects of irrigation development. This must be a continuing effort in order to meet the personnel needs.

b. Problems and Constraints - The Ley General de Aguas (General Water Law) has not yet been approved although there are indications that it may become law before the end of this year.

The country clearly needs to increase the availability and variety of qualified personnel through every means possible, including establishing new curricula and training courses, providing more scholarships, and in the short run, contracting expertise from abroad.

The availability of climatic, hydrologic, topographic, sedimentation, soils, geologic and other basic information is essential to the conduct of comprehensive and detailed water resource planning, development and management. By-and-large, this information is lacking. In some important basins, climate and stream flow data have not been collected. In some instances, irrigation projects are planned and constructed with only visual observations on minimum stream flow. Generally, no sedimentation data are available to allow for the design of diversion and sediment control devices.

In order to successfully develop and expand water-related projects, a large number of managers, specialists, technicians and trained laborers/users is needed at all levels throughout the entire range of water use and management activities. Special emphasis needs to be given to training the farmer in the practical aspects of on-farm water use.

Soils information is available but primarily at a reconnaissance level. Detailed land classification must be a part of pre-feasibility and feasibility studies for all projects.

Climatic and rainfall data have been gathered and analyzed for those stations with five or more years of available records (114 sites). Given the large number of micro-climatic zones in the country, an expanded and improved network is essential to sound project planning and development.

Stream-flow data have been analyzed for 48 gauging stations with 5 or more years of records. However, this analysis has not been published due to the large number of errors encountered in the the basic data.

Groundwater resources have not been inventoried despite the fact that this resource appears to have considerable potential. Geologic data generally is limited and requires that further steps be taken to obtain it.

The Natural Resources Inventory component of the National Cadastral Program is in the process of supplying more detailed topographic data. The capacity to conduct more intensive studies on a project-by-project basis required strengthening.

In planning for the development and use of Honduras' water resources, utmost consideration should be given to achieving the broadest possible impact from a given water investment. Currently, the seven key public sector water-related agencies (ENEE, SANAA, MNR, COHDEFOR, Ministry of Public Health, SECOPT, INA) tend to plan and carry out their projects unilaterally with little or no interagency consultation or joint multiple-use planning. Coordination between private sector water activities and the public sector is even more tenuous. Obviously there are times when, with a relatively small additional investment, (e.g., in design modifications on a dam intended for hydropower production), large additional returns to society can be obtained through better flood control, irrigation, etc. A comprehensive planning perspective is required to fully assess the upstream and downstream effects associated with any given project to avoid costly mistakes and to derive the greatest utility possible.

The problems of coordinating and rationalizing the services of the large number of agencies dealing with water use and management have been underscored in the preceding discussion. The same type of problem exists among various programs within the MNR itself. The Water Resources Unit is charged with planning, setting up and operating the physical infrastructure for irrigation works. The extension service is supposed to train the users in on-farm irrigation practices. The mechanization service is responsible for land cultivation. Leveling and preparation is generally not provided. Agricultural research should be providing irrigated crop recommendations. To date, there appears to be little joint planning, programming and integrated delivery of these various services.

A.I.D. is grant-funding through the MNR a project aimed at (1) identifying the major problems and constraints affecting water resources development in Honduras; (2) developing a five-year plan for addressing some of the critical problem areas, and (3) training of up to fifteen participants in water use and management at a U.S. university plus up to 100 participants through in-country short courses. A Project Paper for follow-on loan financing is in preparation for submission to AID/W in 1978.

The proposed loan will provide more funds over a five-year period for institution-building, training, basic data system strengthening and pilot undertakings in irrigation, drainage, flood-control and watershed protection. The basic thrust of the program is an attempt to increase the capacity of Honduran institutions to plan, technically evaluate and implement/manage comprehensive water projects. The present analysis confirms the wisdom of this approach.

2. Roads

General Priorities - The GOH priorities with respect to roads (not necessarily in order of listing) are:

(a) To complete the basic road network.

(b) To construct the roads needed for the two major development projects, the forestry paper and pulp development project, and El Cajón hydroelectric project.

(c) To construct the roads needed for an intensification of agricultural development.

The following trunk roads will receive priority:

Tegucigalpa-Talanga-Catacamas
La Ceiba-Juticalpa-Descrombres-Sabá
Progreso-Santa Rita-Yoro
Corocito-San Esteban-Corocito-
Puerto Castilla, La Unión-La Guatamame

Their estimated investment cost for the 1977-83 period is Lps. 242.9 million.

Access Roads - Projects programmed by CONSUPLANE for the 1977-83 period that meet the criteria for access or farm roads are:

Emergency roads, frontier with El Salvador

Access roads to coffee zones

Technical assistance, studies and construction of labor intensive roads

Studies, construction and supervision of access roads to asentamientos

The total cost of these during this period is estimated to be Lps. 19.3 million.

A program to construct an additional 2,500 Kms. in access roads is being formulated by the Ministry of Public Works. These will be similar in design to the USAID-financed roads and should be similar in cost. They will be no more than about 20 Kms. in length and principally intended to connect isolated farm areas to the nearest secondary roads.

The basis for selecting the areas for access road construction should be changed to conform to the integrated package approach. Once a decision is made as to which regional or sub-regional areas are to be given priority, an appropriate access road project should be designed for each one. The access roads should be designed jointly with, and as an integral part of, the other infrastructure components planned for

the areas and must be directly supportive of specific production programs.

There has been varied experience with labor-intensive road construction in Honduras. Experience under two different programs have shown that construction costs average approximately Lps. 10,000 per kilometer. Experience also shows, however, that roads constructed with labor-intensive technology on level terrain require more maintenance and have a shorter useful life than those constructed with machinery. Hand labor has proven much more competitive with machinery in mountain areas in other countries.

Food-for-work programs in road construction appear to offer possibilities for converting redundant labor into capital at a low financial cost as well as insignificant economic cost (the opportunity cost of this labor being close to zero at the time they are employed). COHAAT calculates a financial cost of Lps. 2.43 per man/day. The 1977 program includes 104 Kms. of road construction and improvement in the Choluteca Valley and 94 Kms. in Nacaome/Pespire. In the Choluteca Valley, where IBRD technical assistance provides training and supervision, the experience is good and performance is high. The experience with programs operated by some municipalities has been discouraging. The general conclusion is that engineering and supervision is essential to successful implementation.

The Engineering and other faculties of the University of Honduras represent a potential resource for an expanded labor-intensive rural works program. Upper-classmen and graduate students under the guidance of a few professional engineers, can provide engineering design and the lower class students can provide supervision and inspection. A corps of para-professionals could be very effective in expanding the labor-intensive and food-for-work programs and in bringing the quality of the works to an acceptable level. A program of 200-300 Kms. a year of labor intensive access roads plus other rural works should be programmed. Some of the larger municipalities in the country also build access roads to nearby villages with municipal tax money. This effort should be encouraged and coordinated with other infrastructure programs.

3. Grain Storage - The grain storage situation is discussed under marketing in Section VI-E below.

4. Other Supporting Infrastructure: Ports, Airports, and Railroad; Communications and Electric Power

These remaining infrastructure systems are much less critical in planning for agricultural development than those discussed above for one of two reasons: (a) they are developed or are being developed adequately and place no constraint on agricultural development, or (b) they are inadequate but this will not affect significantly the pace of agricultural

development in the next 5-10 years. The components of the transportation system discussed here fall into the first category. Communications and electric power fall in the second.

Ports, Airports and Railroad - The ports of the country are in place (including Puerto Castilla). They will continue to be improved and their capacity for receiving and dispatching goods will continue to increase. No new ports will be constructed, nor are they needed. For potentially productive regions of the country that do not have good access to ports, the solution is not more ports but improved road communications with the existing ports. This will be accomplished when the priority areas are connected to the basic road network through an adequate system of secondary and feeder roads.

The dispersion of airfields throughout the country was a result of the lack of roads when, as recently as 30 years ago, the basic system for internal transportation was a combination of plane and burro. With the construction of an adequate road system well on the way, the plane is no longer of any significance as a transporter of agricultural inputs or products, although it retains some importance for personal transportation between farms and urban areas.

One possible area of concern is the shipment by air of farm products to international markets. Air freighting beef to Venezuela and cut flowers and ornamental plants to the United States are definite possibilities at this time. These possibilities will grow as the agricultural sector is developed. At such time as these possibilities mature, whatever facilities are needed at the international airports must be provided. At this time and in the near future, the only problem that can be anticipated is the availability of planes and reasonable air freight rates. In the future, refrigerated or freezer storage space at one or more airports may be needed. Planning for these should be related to the production programs that will be implemented as the priority areas are developed.

The railroad is the most economic form of transportation for the fruit companies, carrying produce from the fields to the ports. It may also make sense to extend the track in the Aguán Valley to serve the asentamientos producing African palm and citrus for export, connecting the production area and processing facilities to Puerto Castilla. A feasibility study should be undertaken to determine whether this should be done.

Communications and Electric Power - The principal means of communication within rural areas and between rural and urban areas is the national telegraph. The national radio is also used to transmit important messages to and from rural areas. This will not change appreciably in the next 5-10 years. The main priorities in tele-

communication for the near future are to improve urban and international service. This is understandable given the inadequacies of these present systems. The rural areas will begin to receive increased attention during the 1980-85 period.

Planning for rural telecommunications systems, to date, has been restricted largely to the Aguán Valley and the Islas de la Bahía. As in the case of other infrastructure components, it should be related to the development of the priority areas. As soon as the sequence of development of the priority areas is determined, planning for the installation of appropriate telecommunications services should start.

As in the case of telecommunications, electricity will facilitate agricultural development, and it will certainly improve the quality of life of the rural population, but it is not as essential as some of the other infrastructure components at this stage of development at least on any across-the-board basis. Consideration may have to be given in certain areas to providing electricity for processing and other agro-industrial plants.

VI. PRODUCTION FACTORS AND CONSTRAINTS

VI. A. AGRARIAN REFORM

GOH programs designed to provide landless families with the basic factor of production, i.e., land, date back to 1951. Between then and 1961 it is estimated that 35-40,000 hectares were distributed to 2,300-2,500 families, mostly in the form of individual plots. In 1961-62 the first agrarian reform law was enacted and the National Institute (INA) established. Resistance to expropriation of latifundia, however, immmediately stiffened. Though some group farms were organized, largely in the South, the main thrust of INA's program was shifted to the development of a colonization project in the Bajo Aguán.

Strong campesino organization and agitation, continuing waves of land invasions, and ultimately a campesino march on Tegucigalpa, led to a military takeover of the Government in 1972. This was followed by issuance of Decree No. 8 on December 26, 1972, which permitted temporary distribution of land on an emergency basis; announcement on January 1, 1974 by President López of a comprehensive agrarian reform program with a goal to distribute 600,000 hectares to 100,000 peasant families organized in groups; 1/and promulgation, effective January 14, 1975, of comprehensive agrarian reform legislation (Decree Law 170). The land to be distributed was to consist of unutilized and underutilized private lands, to be expropriated against compensation, as well as Government lands.

The program was ambitious and, if realized, would have provided land for about half of the estimated 240,000 families 2/ that were either landless or farming on less than five hectares.

As of September 1977, the total number of agrarian reform groups established was 907 with 32,165 members holding 159,392 hectares. (See Annex B for full description). Most of these groups were being given organizational, technical assistance and credit support by the Government.

1/ Later modified and restated as a goal of 120,000 families to be settled on 600,000 hectares during the five year period 1974-78.

2/ A precise calculation is impossible. Used here is the estimate of 350,000 labor force members, (farmers with less than 5 hectares plus landless farm workers, net of fruit company employees) contained in para. 1.33 of Vol. I of IBRD-IDB-AID Agric./Rural Sector Survey, August 1975, divided by 1.5 to give the number of families. A FAO study in 1976, using different criteria indicated that there were 150,000 families without land or with insufficient land.

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This summary assessment of the agrarian reform program will focus attention on the two major issues of agrarian reform policy that now confront the Government:

(1) What further action should be taken in land distribution to meet the continuing needs of a rapidly growing rural population?

(2) What further measures should be taken to achieve economic viability of the farm undertakings of the reform beneficiaries?

Land Distribution in Relation to Goals and Needs - The total number of families settled on land under the Agrarian Reform program is probably in the 50-60,000 range. However, abandonment has been high. A recent study for two regions, covering the period 1972-76, showed a 40% desertion rate. 3/ On a net basis, during the five years since Decree No. 8, it is estimated that approximately 24,000 families 4/ have been settled on 125,000 hectares. This represents 22% of the goal of 120,000 families and 20% of the goal of 600,000 hectares set for the end of 1978. It is, therefore, clear that there will be a large shortfall in meeting the original goal by the end of 1978. Further, the rate of net settlement since Decree No. 8 has been less than 5,500 families annually. This is just about equal to the annual increase in Honduran rural population (excluding immigration to urban areas.) Thus, it is not likely that the program has on a national basis had any significant net effect in reducing the extent of minifundia or landlessness as it existed five years ago. The rate of progress in land settlement also appears to be slowing. Most of the progress was made in the first rush of activity immediately following Decree No. 8.

3/ Abandonment has been particularly high in the Bajo Aguán, among other reasons because of distance from the settler's original homes. In other areas, however, it has been substantial due to the limited economic success of many asentamientos, lack of adaptability of some individuals to cooperative farming, personal conflicts and other reasons. There are signs that rates of abandonment are levelling off. However, the process has been helpful in reducing membership in many asentamientos with very limited land relative to membership so that the average land/beneficiary family ratio has reached the average of 5 hectares per family proposed by Government policy.

4/ This number is estimated at about 20% less than total membership enrolled in reform groups in September 1977 for two reasons: (1) several thousand of the members were legally settled prior to Decree No. 8; (2) many families have more than one member — e.g., sons 16 and over and some women, especially in Isletas.

About 25% of the affected land area (37,135) is in colonization projects principally in the Bajo Aguán. This is an area with inadequate infrastructure and services. Other studies indicate that land affected was far from infrastructure and facilities, e.g., a PROCCARA study states that at the beginning of 1975, 56 percent of the existing groups were located between 15 and 40 kilometers from the closest principal road or paved highway and an A.I.D. study in 1976 indicates that only 80% of the groups had access to a road of any kind. Other studies indicate that most of the land affected by Decree 8 was unused national land and land which was occupied by campesinos. Only 18.9% was private land. Since Decree 170 much of the land adjudicated was idle banana company land. Of the approximately 65,000 hectares affected from January 1975 to September 1976, 59,000 was Fruit Company land. The PROCCARA study also indicates that an "important part" of the land incorporated under Decree 8 had steep grades susceptible to erosion and in general of deficient texture and structure. The study concluded that the land adjudicated under Decree 8 was predominantly marginal with more than 15% grade.

Though land reform has barely kept pace with the needs of population growth, it has at least temporarily reduced the intensity of demand for land. The groups that were most vocal and aggressive in seeking land have in most cases been benefitted at least initially, and most of the attention of the campesino organizations has been turned to the practical problems of providing economic and technical support to already settled groups.

The demographic pressures for land reform, however, almost certainly will rebuild at a rapid rate. Over the next decade there should be growth in rural population (net of urban migration) of 60-75,000 families. This must inexorably lead to further division of land into minifundia and rapid growth in the number of underemployed and landless workers.

If these demographic pressures are to be alleviated, the pace of land reform must be stepped up to a rate which not only matches but exceeds that of the past five years, and/or other measures undertaken, e.g., expansion of the social forestry system.

Regardless of the rate of increase in new settlements, a series of issues with respect to the reduction of desertion rates and improvement of cost effectiveness should be examined. Some of these are: How should new settlements be promoted, e.g., via more directed colonization or via promotion of spontaneous colonization with minimum assistance? Under what arrangements should new settlements be initiated, e.g., collective units? Should some degree of basic on-farm infrastructure be provided on a grant basis? Should food during the first crop year be provided as a donation? Should some sort of minimum size criteria be established and adhered to?

Efficiency of Reform Group Operations - The policy of the Government is to encourage and stimulate reform groups to operate their farms on a group basis either in their entirety or at least with respect to their principal cash crops. This policy was based on a number of considerations. In the first place it was considered that early agrarian reform projects involving distribution of land to individual farmers were not cost effective. It was difficult to provide support to new farmers on an individual basis and the recuperation rate on loans made to them was low. Further, over the course of time there was a tendency to divide plots and thus create more minifundia. Finally, it was believed that group farming would be more efficient and thus provide greater benefits to the recipients and to the national economy and be easier for the Government to support with technical assistance and credit. The Government policy was supported by the campesino organizations, which shared the same views and also recognized the value of group farming in maintaining the cohesiveness and loyalty of their constituent groups. In consequence, about 90% of the asentamientos have been engaged wholly or significantly in group farming operations.

In view of the newness of the group farms, it is premature to pass judgement on their ultimate economic viability and cost effectiveness. However, the evidence to date is mixed and makes clear that some significant improvements must be made if generally satisfactory results are to be achieved.

For purpose of discussion, the group farms can be divided into three categories: (a) banana plantations; (b) groups principally dedicating their land to other permanent crops; and (c) all others.

The banana producing groups, which chiefly occupy land formerly used by foreign companies, appear to be economically viable. The earnings and fringe benefits of their members are superior to those of the rural population generally, although less than those of employees of the banana companies. These groups are relatively responsive to technical assistance from COHBANA, and able to meet their financial commitments with minimal risk to the State. COHBANA considers that there are opportunities to develop significant additional groups of this kind, both in the Aguán and Sula Valleys. The relative success of groups of this type suggests that the Government should give priority attention to their development.

The groups (chiefly in Bajo Aguán and Guaymas) engaged in extensive plantings of African palm, citrus and other permanent crops are most difficult to evaluate since there is not yet significant production. The costs of development have been high, and the degree of success encountered in dealing with production, processing and marketing problems remains to be seen. Clearly the progress of these projects should be evaluated carefully and continuously to determine the feasibility of additional projects of this type on a cost-efficient basis.

These generally unencouraging results are offset to some extent by the fact that the members of these groups do, for the most part, consider themselves better off than before they joined the reform group. This is clear evidence that the groups are largely composed of individuals who were previously in very poor circumstances.

The causes of the apparent poor performance of most reform groups to date are varied. Hurricanes, floods and droughts have contributed. Indeed, in some cases the natural risks on some reform lands may be so high as to make imprudent the pattern of farming (choice of crop and level of inputs used) followed. In other cases, there was poor management. While poor management may often be the fault of the group itself, in considerable measure it is a reflection of the adequacy of the technical support provided by Government for groups whose management experience is known to be weak. In many cases, loans were made on an unbusinesslike basis to farm units against inadequate evidence of ability to repay out of harvests or to purchase machinery that could not be efficiently used or adequately maintained. The heavy concentration of the groups in production of basic grains and the failure of BANAFOM to purchase grains at announced support prices was another factor.

For the future, it would be desirable to give careful attention to the development of more effective systems of assisting these reform groups to develop their enterprises and achieve economic viability.

A basic problem in achieving more satisfactory results in these collective farms is that Government programs to provide support are not well coordinated. All of the elements have been present: organizational assistance has been provided by INA and DIFOCOOP; extensionists have been provided by MNR; credit has been provided by BANAFOM; training courses have been offered by these organizations as well as INFOP and others. However, the sum of the parts does not add up to the continuing assistance in farm organization, planning and operation that the groups need. To resolve this problem, a farm planning advisory group was established in May 1977 to focus the efforts of GOH personnel on helping the leaders of agrarian reform group farms to design investment and farm management plans which would make the most effective use of available resources to achieve the best possible net income consistent with acceptable risk. The plan then serves not only as the basis for a credit application, but also a time-table for technical consultants.

Another solution that should be seriously studied is the establishment of zonal centers, each headed by a farm management technician supported by adequate staff (including at least an agronomist, accountant and para-professional assistant) charged with working in an integrated manner with up to 20 reform groups to provide continuing support for planning and management of their economic programs. (See Annex B for

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fuller details). Such centers would replace the existing support system rather than add another layer of costs. They could be organized as a reform farm management service operated by a Government agency or, alternatively, as second degree cooperatives or quasi-cooperatives responsible to the reform groups themselves and with technicians supplied or subsidized by Government under agreed conditions.

In any event, it would appear essential that the support system be so organized as to pro effective, continuing and coordinated assistance to reform groups ing the following key aspects to group farm development and operation.

1. Multi-year farm development planning.
2. Annual farm plans.
3. Timely application for credit and sound management of credit.
4. Technical assistance in farm operations.
5. Supply of inputs.
6. Marketing
7. Accounting and financial management.
8. Matching of specific training needs with training opportunities.

Neither ANACH nor the UNC wish their groups to be organized either as empresas asociativas or as cooperatives because they fear this would subject their groups to greater Government control and weaken the relationship between the groups and the parent campesino organizations. INA has accepted this point of view to the extent of agreeing that the groups can organize according to their wishes. BNF has also agreed to lend to the ANACH or UNC groups under the cover of the legal identity of ANACH and UNC without requiring independent legal identity of each group.

While the present situation is workable, it would be clearly desirable if some of the complexities could be eliminated by developing a simpler legal system that would facilitate the operation of all of the groups and their ability to work together in regional and zonal associations.

It would be useful to amend the cooperative law to make explicit provision for agrarian reform cooperatives, both in the form of base units and zonal cooperatives of second degree. If this were done in consultation with the campesino organizations so as to explicitly recognize the group's rights to maintain their affiliation with such organizations, it might be possible to achieve a more rational and effective legal system for reform group operation.

VI.B. AGRICULTURAL RESEARCH

The Government of Honduras, recognizing the need to expand and upgrade the agricultural research program, recently completed a partial study of the research situation and a preliminary report of recommendations for improvement of the research stations and the formation of interdisciplinary teams for each region. The study did not cover research facilities and programs which are under the direction of other entities both within and without MNR, but which are separate from the research department of the operational directorate of the MNR. The work was carried out by members of the National Program for Agricultural Research (PNIA) in collaboration with a team of experts provided by the International Agricultural Research Services (IADS). The following excerpt of the analysis is a summary of the preliminary report, "Agricultural Research in Honduras."

1. Current Research Operations - The Ministry of Natural Resources (MNR) is presently operating six experiment stations. One each in four of the six priority areas selected for development operations under the Plan Maestro Vial de Honduras. Two others are located in key production areas--one at La Esperanza, Intibucá for the improvement of production of cool season fruits and vegetables and another near Danlí at the threshold to a rapidly developing area in the Jamastrán Valley.

PNIA currently has 39 technical staff including four PhD's 3,M.S., 1 B.S., 24 Ing. Agr. and 7 agrónomos. Six (including all the PhD's) are based in Tegucigalpa while the rest are at the experiment stations. At least four persons are expected to return from studies in 1978-1 PhD., 2 M.S., 1 Ing. Agr. Two others with M.S. may also join PNIA in 1978.

All of the PNIA research presently is crop oriented and principally directed to basic food grains. Smaller programs are being developed for oilseed crops, vegetable crops, and cropping systems. Crop research generally consists of varietal testing and selection, some breeding, and some work on agronomic practices.

Disciplinary support of crop improvement research is very limited. Despite their importance, there is very little research on soil and water management, either within or outside PNIA, with the possible exception of the international export-oriented companies. There is no socio-economic research being carried out by PNIA and farmer contacts and interactions with extension are very limited. There do exist, however, opportunities for interaction between the national research program and EAP, INA,CURLA, COHBANA, IHCAFE and SIATSA, as well as the appropriate international centers.

The report concludes that present research has several important strengths and weaknesses as follows:

Decentralization of program implementation and budget control encourages small self-contained regional programs rather than coordinated national efforts.

There is a reasonably good network of experiment stations although some deficiencies remain in their development.

- Staff is limited both in terms of numbers and training.

- PNIA is almost exclusively basic food grains and experiment station oriented, lacking farm research, disciplinary research, horticultural research, animal science and socio-economics.

- Useful linkages have been established between PNIA and various international research organizations. Domestic relations among planning and institutions concerned with agricultural credit, inputs, and marketing should be improved.

The report indicates that the analysis points to four basic factors or elements of strategy that must receive attention. These are: (1) a farmer-focused integrated multidisciplinary approach to research and technology transfer; (2) a national experiment station network; (3) manpower development; and (4) linkages with domestic and external institutions.

2. Programs Proposed by PNIA/IADS Study

a. Multidisciplinary Approach - This farming systems approach has been selected as the one most nearly responding to the multiplicity of factors that influence small farmer decisions in the complex situation under which they operate. To date, improvements on traditional Honduran farming systems, per se, have been few, because previous agricultural research has usually ignored their inherent complexity and stability. To face this farming reality, agricultural research will use a multidisciplinary approach, taking into consideration the farmer's financial, social, and cultural situation and their effect on his traditional farming system. Sufficient flexibility will be maintained in this approach to recognize and react to the research needs of the different farming systems that exist, e.g., the traditional farmer, group farms, small commercial farms. This approach is considered more effective for research programs limited in manpower and funds.

The new PNIA research program will focus primarily on the small and medium farmer, both independent and in the agrarian reform sub-sector. Short-term priority will be given to research on basic grains with medium to long-term emphasis to include livestock, oilseed crops and vegetables.

The multidisciplinary approach will be applied at two levels:

(1) Farming Systems Approach - A holistic farm-based and oriented effort. Research will be carried out on a regional or sub-regional basis by multidisciplinary farming systems teams. Their approach will include selection of the target groups and geographic areas of concentration, collection of agro-socioeconomic data, selection of improved systems components, technical validation, farmer evaluation and evaluation of acceptability. In effect, this will test a variety of improved practices in the farmer's setting, evaluate their validity under his conditions taking all related factors into consideration and determine the farmer's willingness to utilize them on his farm.

(2) Farming Systems Components Research - As the work of the Farm Systems Teams progresses, they will identify components of the farming systems that need further research (e.g., varieties, fertilizer levels, pest control problems). Some of this can be done in the farm setting, but some will have to be carried out on the research station by technical support specialists trained in the appropriate disciplines.

The report concludes that the implementation of such a program leads to a number of basic considerations in relation to the current agricultural research program. These include:

- Implementation will be a gradual process due to a shortage of manpower and to inexperience in this approach under Honduran conditions.

- Staff development will be critical, both in reinforcing on-station research of the commodity discipline teams and in training and orienting technicians for the farming systems teams.

- Staff mobility will be critical. If the systems teams are to be effective, they will have to be in constant contact with farmers and support personnel.

- Linkages with extension will be indispensable if research results are to reach large numbers of farmers in a timely and effective manner.

- Experimental station workers must have the necessary facilities to support effectively the systems teams. Many of these components in the early phase may come from adaptation and modification of existing technology which is available from such sources as the international centers and universities.

b. A National Research Station Network - There are now six reasonably well located experiment stations, which could, if properly developed, meet most of the foreseeable research needs for 1978-1982, with the possible exception of the Aguán Valley and the three-corners area of western Honduras where the Departments of Copán and Ocotepeque, respectively, border on

Guatemala and El Salvador.

The report then recommends that:

- The Comayagua station should be a national center for research, training and support.

- PNIA and INA should work out arrangements for land use and cooperative research and training at Catacamas.

- Livestock research should be started at Comayagua in cooperation with CNAG.

- A master plan of station development should be prepared.

- Library and publication services should be improved by strengthening CEDIA.

c. Manpower Development and Personnel Management - One of the most critical constraints of PNIA at this time is a lack of technically trained personnel with continuity. Staff increases to accommodate this proposal must be accomplished by using a phased program of in-service and advanced degree training. In view of the projected strengthening of the national research system, and in recognition of the current constraint in technical manpower, the following recommendations are made:

- As early as possible in 1978, a farming systems, research, and training program at the farm level should be initiated. This research training program should provide at least one farming systems team for each of the regions by 1982. In-service training should also involve relevant international centers and national programs.

- Arrangements should be made with Extension and with the Regional Directors of Agriculture to assign a full-time extensionist to each of the farming systems teams--for training as well as subsequent on-farm research.

- The advanced degree program should continue and from 1978 should be geared to the anticipated number and kinds of technicians needed to strengthen the program. To the extent feasible, only advanced degree candidates with experience in the new research approach should be sent for study.

- Special attention should be given to training requirements to start a modest livestock research program during the next five years.

- Since training and/or experience are deficient in several areas, a number of consultants will be required until national technicians

are trained and in place.

- Salary levels, perquisites and work environment should be reviewed regularly.

d. Linkages with Internal and External Institutions - Research is only one of the elements essential to rapid agricultural development and cannot be conducted in isolation from such critical factors as extension, credit, input supply and marketing. It is very expensive and the GOH should not finance research which would duplicate work already done by other national or foreign institutions if results are readily accessible. The body of research applicable to developing countries has expanded greatly and much technology relevant to Honduras is already available. In order to utilize this effectively, however, Honduras must develop a strong national agricultural research capability to adapt, modify, and transfer foreign information and technology to the domestic situation.

PNIA's impact on agricultural production and improved rural well being will depend largely upon productive interactions with appropriate entities inside and outside the country. Effective relationships must be established with farmers, extension, regional directorates and other institutions concerned with planning, education, research, credit, inputs and markets. Useful ties already exist with some international and other national research institutions. These should be strengthened and additional ones developed.

Conclusions:

- Emphasis should be placed on farm research with active farmers' participation.

- An extensionist should be included in each farm systems team in order to assure a close linkage between research and extension.

- Regional Agricultural Committees (CAR) should advise the Regional Agricultural Directors and PNIA on research at the regional level.

- A Consultative Committee on Agricultural Research (CCIA) should be formed to advise the DGOA with representation from the National Extension Office, DAR's agricultural education institutions, Directorate of Sectorial Planning, BNF, INA, Farmer's organizations, and Director of PNIA. This committee should be concerned primarily with policy and priorities.

- Professional ties with national and international research institutions that can contribute most to agricultural research in Honduras should be strengthened and encouraged.

e. The National Research Entity - The proposed structure of the reorganized agricultural system consists of three principal parts as follows:

Headquarters Unit - This will be the administrative headquarters of PNIA and will be located in the MNR in Tegucigalpa. Its principal functions will be to represent research at the national level, to oversee program implementation, to coordinate with other research entities and to administer the national research program. Ultimate responsibility for decisions concerning supervision and support services will rest with this unit.

Central Unit - This unit will provide national support in training, laboratory, and administrative services, and in research and technical specialization which need not be duplicated at each region. It will be located at the Comayagua station. It will have responsibility for the development and implementation of research methodology to be used by regional units, orientation and training of staff, research in support of the regional stations, coordination and supervision of research on a national basis, and the technical assessment of research.

Regional Units - A regional unit will be placed in each of the seven agricultural regions by 1982. Each will consist of a farming systems team working principally at the farm level, and technical support specialists working mainly at the regional experiment stations. Both will use a multidisciplinary approach on problems identified at the farm level by the farming systems team with farmer participation.

f. Implementation and Funding - As a coherent national program, PNIA must carry out national priority research on a regional basis and, to the extent feasible, be integrated with the operations of the DAR's. The DAR's presently have authority over the regional budgets. The proposal states that this is unsatisfactory and suggests that the full research budget should be placed with PNIA to insure necessary administrative control over it and authority for program implementation.

The summary cost estimate for the National Research Budget for 1978-1982 totals US$12,018 million for local costs and an additional $3,178 million in dollar costs for consultants, training, vehicles, buildings, equipment and library materials. The team report states that local cost projections seem reasonable in terms of the total value of production of the commodities for which PNIA has responsibility.

The technical and consultant staff projected by the report required to implement the proposed program are as follows:

CONSULTANTS REQUIRED 1978-82

Specialty	Number	Years	Man-Years
Administration	1	3	3
Technology Transfer	1	3	3
Animal Science	3	3	9
	1	2	2
Agr. Economics	2	3	6
Sociology	1	2	2
Soil Management	1	3	3
Marketing (grains)	1	2	2
Weed Control	1	3	3
Exp. Station Management	1	2	2
	13		35

In addition, a number of short-term consultants will be required in various disciplines. The report estimates the cost of these will approximate $80,000 during the period.

HONDURAN STAFF AND PROJECTED INCREASE

Activity	Actual 1977	Increase 1978-82	Total 1982
Basic Grains	18	1	19
Oilseeds	5	0	5
Vegetable & Root Crops	9	0	9
Animal Science	0	9	9
Farming Systems	1	20	21
Exp. Station Management	1	5	6
Central Unit Staff	5	1	6
Administration	1	2	3
	40	38	78

3. Analysis of the Report

The approach to the organization and implementation of a portion of the research effort, as set forth in the report by the joint team on research in Honduras, is sound. It would be useful, however, to have a more comprehensive treatment of overall research requirements and activities underway, of which this study would form a part. There are, also, a number of points in this study that require further consideration regarding the thrust and scope of research if the project is going to make the maximum impact on increasing agricultural production and improving the quality of life for the small and medium farmer.

(a) Throughout the report, it appears that primary attention is to be given to the production of basic grains. Experience in Central and South America has pointed up the fallacy of building a small and medium farmer development strategy primarily around basic grains. It has been demonstrated that encouraging small farmers to rely upon basic grains as their principal source of income tends to lock them into the poverty level, especially, as is too often the case, if they are farming marginal lands.

(b) The mutidisciplinary approach in the broader sense as outlined below could enable the PNIA to have a broad gauged influence on stimulating agricultural development. The farming systems approach is the one most nearly responding to the complex yet internally stable mixed system of the small and medium farmer. To date, improvements in traditional Honduran farming systems have been few, because previous agricultural research has usually ignored their inherent complexity and stability. To face this farming reality, including the total mix of his present farming activities, plus promoting additional market crops, agricultural research in Honduras should use a multidisciplinary approach to develop production improvements in the whole range of mixed agricultural enterprises which make up the country's largely traditional farming systems. This approach will take cognizance of the limited labor generating and low income producing potential to be realized by placing too much emphasis on basic grains. It will explore fully the options and comparative advantages of extending the small and medium farm mix to fruits, vegetables, appropriate livestock enterprises, and non-food products for cottage industries.

If the above concept is adopted, some adjustments in the technical make up of multidisciplinary teams might be required. In fact, teams could be tailored to best fit the requirements and opportunities of each region. Less highly trained technicians, with a broad base in practical agriculture may be used initially. This would enable PNIA to accelerate the schedule for fielding the teams. Teams should include an appropriate complement of women technicians and promoters to stimulate farm womens' participation in agricultural diversification schemes, labor-saving technologies, livestock [illegible] and [illegible] industries.

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The section on Animal Production and Research is balanced and practical. Cost of the program could probably be reduced, however, by utilizing fewer highly trained technicians to direct the work of a larger number of junior level technicians.

(c) PNIA's 39 member technical staff has a budget of Lps. 1,623 million in local costs for 1978. The study projects a staff of 78 and a budget of Lps. 2,987 million in 1982. These figures are based upon the concept of one large national research center plus six regional experiment stations. One way to reduce cost would be to conceive these six regional stations as satellite operations of the central station and having more limited facilities and personnel. Another possibility would be to have, in addition to one central station, two other reasonably well developed stations, one for each of the two climatic/geographic zones of the country not covered by the central station.

The study is a good beginning for an on-going effort to consolidate and coordinate the country's overall agricultural research efforts. Continued duplication of these efforts through fragmented seats of responsibility must be avoided.

Consideration should be given to involving appropriate colleges and departments of the National University (UNAH) in the process of agricultural research and extension. The participation of faculty members and students in this work would provide more manpower and guidance to extend the principal of on-farm research, would enhance the education of students and give them an appreciation of the difficulties involved in agricultural production processes, and would possibly generate more interest among University students to work in the agriculture sector after graduation.

VI.C. AGRICULTURAL INPUTS

1. Types and Sources of Inputs

a. Imported Products - All fertilizers, insecticides, fungicides, disinfectants and veterinary products are imported. The total value of these inputs in 1976 was approximately $14 million. Over half of this sum was for fertilizer. There does not appear to be any marked tendency toward a rapid increase in the use of fertilizer. Imports in 1976 were about equal to those of 1973 and 1971. Fluctuations in prices seem to have been the most important factor in determining annual usages. This could explain the reduction in use for 1974 and 1975, and the increase in consumption in 1976. There is a tendency toward a greater use of mixed goods over single element purchases, a greater use of potash and less use of nitrates. The increased use of potash is probably a mistake on most soils in Honduras, according to research information now available. Expansion of soil-testing services and soil fertility information could contribute to reduction of production costs while yields are maintained.

The majority of improved vegetable seed as well as limited quantities of rice, corn and sorghum seed are imported by the private sector. The new pineapple industry is supplied with vegetative plant material from Hawaii, by Standard Fruit Co. In fact, the U.S. is the major supplier of all agricultural inputs to Honduras.

b. Basic Grain Seed - The production and processing of improved basic grains seed in Honduras is the responsibility of the MNR and is implemented by the Agricultural Services Program. There is an agreement with BNF for sales to farmers and another agreement with the Panamerican Agricultural School to produce and process seed in one of the country's three processing plants. The other two plants belong to MNR. One is located in Tegucigalpa and the other in San Pedro Sula. The agreement with BNF created a revolving fund for seed purchase and other program activities. Planning and implementation of the program is led by an Executive Committee made up of employees of MNR and BNF. Annual production plans are based upon the requirements of each region and the processing, storage and supervisory capacity of the Agricultural Services Division. Effectiveness of the program and volume of seed handled is often severely hampered by budgetary restrictions and poor sales promotion at the regional and sub-regional levels.

Foundation seed is produced by the Research Department at the experiment stations located in the regions. This foundation seed is made available to the seed program for multiplication by contract farmers or in some instances on available research station lands. Contract farmers are selected on the basis of their ability and willingness to exercise

the necessary skills and care required to produce quality seed. As an incentive for the special care required in producing quality seed, the contractors receive guaranteed prices somewhat above market level and the assurance that their entire seed crop will be purchased. Quality control is the responsibility of seed program technicians who are supposed to visit producers frequently to assure proper rogueing and cultural practices. The technician is then responsible for overseeing harvest, purchase and transport to the nearest seed processing plant for cleaning and storage.

Agricultural planners and management officials have been reluctant to give the seed program the high priority it requires in budget allocations and assignment of high quality technicians. In a recent study made by the seed technologist of Mississippi State University, it was reported that the seed program was extremely lax on enforcing quality control by contract farmers. This laxness results in poor quality seed with a high processing cost. A comprehensive seed and plant material law is of high priority for the sound agricultural development of the country.

An effort is made in planning production and processing so that each of the three plants will process seed for its area thus reducing transport cost. The private plant at the Panamerican Agricultural School processes corn, beans, rice, soya and cowpea. The plant in Tegucigalpa processes beans, rice, soya, sesame and sorghum. The plant in San Pedro Sula processes corn, rice and wheat. There is no official production and processing of vegetable seed, grass seed or minor field crop seed. Neither is there any organized commercial seed producing sector. Based on an eight-hour work day, the combined annual capacity of the three plants is 2,150 short tons. From 1969 through 1975, the plants operated at much less than half capacity. All plants have adequate laboratories for quality control. Storage space is limited, however, to 1,190 short tons for the three plants. The processing plants could easily handle the increased quantities of seed planned for the next several years by working more than one eight-hour shift per day at critical periods.

The national demand for improved seed and plant material is constantly increasing each year as farmers substitute traditional practices of cultivation with more effective technologies. In the recent evaluation of the programs of the MNR by its Sectoral Planning Office, it was found that the production of improved seed has not reached the quantities targeted. It is not clear, however, if the shortfall was caused by lack of production or by low demand for the seed. In any event, the production targets were not met. It would seem that the MNR must place a great deal more emphasis on both the production and promotional aspects of the improved seed program if it is going to help make any

substantive impact on increasing agricultural production. It is a well known agronomic fact that improved seed and planting material can be one of the most dramatic factors toward increasing production.

The present relatively good situation in the production, processing, storage and sale of improved seeds is the result of the establishment of a rotating fund, managed by BANAFOM, to contract with private sector producers to increase the supply of improved seeds. This fund was financed by Agriculture Sector Loan I, which also provided for purchase of needed equipment and parts to improve the efficiency of the processing plants. However, the GOH has not yet enacted an improved seed law to guide private enterprise in this activity and provide assurance to farmers that the seed they purchase meets appropriate standards.

The greatest deficiency in this activity lies in promotion and sales. It is not enough to distribute improved seeds through overworked MNR extension agents. Increased use of improved seeds could be achieved if the output of the MNR seed processing plants were provided not only to extension agents, but also to BNF farm supply stores and the private sector commercial farms supply stores.

Considering the fact that only 7 - 12% of the area planted in basic grains is in improved seed 1/, the market is still so small that it is probably not attractive to private enterprises, so the GOH activity is considered to be appropriate at this time. However, the GOH policy should be to sell improved seed at prices which reflect the costs of producing improved seeds ready for sale to farmers so private enterprise will be encouraged to compete with the Government to expand production and sales. Further, prompt enactment of the improved seed law, with provisions which create conditions conducive to private enterprise activity in this field, is important to get larger percentages of area planted with improved seeds.

c. Other Seed Material - The lack of commercial nurseries qualified to produce quality plants of recognized superior varieties is a serious limiting factor for the development of fruit industries in Honduras. Production of quality plant material by the public sector is also severely limited. INA has the only nursery for the commercial production of quality citrus plants, located at Sinaloa, Colón. This nursery currently has about 600,000 plants being budded to grapefruit for planting in the Aguán Valley project. Unfortunately, these plants are not available to independent farmers outside of the reform sector. The research program of the MNR produces small quantities of tropical fruit plants at the

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1/ It is difficult to state how much of the area is planted to improved seeds. The synthetic corn variety named, Tuxpeño, introduced about 15 years ago as a new improved variety, is now so commonly used that it is often perceived to be a native variety.

various experiment stations. This material is distributed principally to the farmers who live near the stations for limited plantings. Total production for 1976 in MNR nurseries amounted to only 34,000 plants and 1,500 of this number were ornamentals.

Most of the commercial citrus growers produce their own plants or purchase them from nursery-men who have only rudimentary knowledge of technically sound plant propagation methods. This represents a limiting factor of grave economic importance to the grower who has to use poor quality plants that tend to give poor quality fruit for many years.

Banana plants are usually selected from existing plantings. The companies that contract with farmer growers for their production usually assist in the selection and fumigation of plants. The MNR could greatly improve the basic food supply of the target group in most areas of the country by making available planting material from improved varieties of bananas and plátano.

Production of improved planting material for coffee is largely in the hands of the Honduran Coffee Institute (IHCAFE), an autonomous government institution which produces 75 to 80 percent of the coffee seedlings planted in the country each year. In 1976-77 they distributed approximately 20 million plants. This quantity appears to be adequate to meet the requirements of the rehabilitation program. Seeds are carefully selected by Institute technicians from prolific parent stock.

2. Use of Inputs - Almost 72 percent of the insecticides, fungicides and disinfectants for 1976 were used on bananas, pineapple, cane and tobacco. The cotton cooperative used 3.9%, and commercial companies imported 18.3% of the total for use in coffee, basic grains, fruits and vegetables and other minor crops.

In 1976 over 70 percent of the fertilizer imported was used on export crops, i.e., bananas, pineapple, sugar, tobacco and coffee. The balance was used on corn, fruits, vegetables, beans and other minor crops. The overall level of fertilizer use in 1976 was at about the same level as that for 1971 and 1973. There does not seem to be a tendency to increase fertilizer use. There is ample evidence that many small and medium farmers know the advantages of using fertilizers and other inputs. The lack of a growing demand probably reflects the lack of buying power on the part of small and medium farmers, although it may also reflect the farmer's perception of the cost of fertilizers compared to agricultural commodity prices.

Increased use of fertilizer with the rise in economic well being of farmers is a fair measure of the point in time when an underdeveloped rural society accelerates development toward the "take off point." As

indicated in the following table derived from the 1974 Agricultural Census, there is a definite correlation between size of farm unit and use of inputs. Of the farms under 3 hectares, 8.8 percent used some type of input, but this only accounted for 2 percent of the value of total inputs. At the other extreme, 54.1 percent of the farms over 50 hectares used input and accounted for 84.1 percent of the total value of same.

Comparing the relationships, for any size farm group, between the use of some kind of input and the use of purchased seed and/or fertilizer would seem to indicate that inputs are not used in appropriate "packages" so as to obtain maximum returns on the investment.

USE OF INPUTS

Size of Farm	Total No. in Country	No. and % Using Fertilizer	No. & % Using bought Seed	No. & % Using Some type of Input*	Value of Inputs (All Types)
1- 3	101,116	2,923 (2.9)	2,354 (2.3)	8,921 (8.8)	2.0
3- 5	23,631	1,062 (4.5)	562 (2.4)	2,894 (12.3)	1.1
5-10	28,259	1,615 (5.7)	926 (3.3)	4,514 (16.0)	2.3
11-20	19,219	1,428 (7.4)	922 (4.7)	4,233 (22.1)	3.9
21-50	15,164	1,509 (10)	1,264 (8.3)	4,814 (31.7)	6.6
51 or more	7,908	1,609 (20.3)	1,650 (20.9)	4,284 (54.1)	84.1
TOTAL	195,297	10,146 (5.2)	7,678 (3.9)	29,663 (15.2)	100.0

* Fertilizer, Insecticides, Fungicides, Herbicides, Veterinary products and bought seed.

3. Distribution Arrangements - The supply of inputs to farmers is mostly in the hands of nine private companies. the government organizations and a few cooperatives. In the private sector the principal firms are: Agencia Hammer, C. H. Eyl, OPEA, FERTICA, CADELGA, Astro Agrícola, Agencia Segovia, Tela Railroad Company and Standard Fruit Company.

Some profile characteristics of the above companies are:

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- Have been in the business from 3-20 years.
- Collectively, they distribute approximately 90 percent of all inputs.
- They serve both large and small farmers.
- Fertilizer sales account for 30-60 percent of all sales.
- Use volume and cash discounting tools.
- Serve as wholesalers and retailers.
- Move most goods by truck.
- Provide some minimal services such as soil testing, short courses and field days.
- Company or supplier determines pricing policy.

The private sector distribution network covers the majority of the country, especially areas of high rural population concentration. The western zone is receiving less attention because of poor communications. There are probably opportunities to strengthen this private network through government assistance and incentives. A well designed program to this end could provide additional service to small and medium farmers on a sustained basis at relatively low cost. As a first step, the private sector companies should have access to and be encouraged to sell improved seed produced by the MNR.

Government organizations that participate in the distribution of inputs are: BNF (Sales Section), MNR (Seed and Plant Materials), INA and IECAFE.

The BNF, through (La Sección de Ventas), has a chain of 21 retail stores and two warehouses to supply inputs for small and medium farmers throughout the country. Sales are for cash or against specific orders from the Bank's Credit Department. Input stores have given credit directly to some farmers with extremely poor results. Some of these bad debts date from the 1950's and 60's. Total sales for 1976 amounted to $1,533,171.00, which was a 9 percent increase over 1975. However, sales were off by 31 percent in 1975 in relation to 1974. The current financial condition of the system is critical. Labor costs, price increases of supplies, interest on financing and transfer of properties has raised costs about 94% in 1975-76 over expenses for 1974. Net returns did not cover expenses in 1976. In 1976 it was estimated that about 50 percent of the inventory was obsolete; much of it had been in

stock for over 10 years.

The BNF input chain was intended to serve two purposes: to stabilize prices of inputs for the small and medium farmer; and to assure him of a steady and reliable supply of inputs, especially in remote areas. It is difficult to assess whether or not the program has had any impact in relation to these purposes. In any event, it is obvious that as an enterprise it cannot continue on its present course.

An evaluation of the BNF has recommended that, in the interests of restructuring the Bank, the input section be transferred to a new National Institute of Marketing, at least as a provisional step. Such action will not, of course, resolve the basic issue concerning the input program; i.e., whether there is a need for a state owned and operated input supply network and, if so, how it should be organized; or whether the network should be abolished, transformed into a cooperative, sold to private enterprise, or in some other way taken out of the public sector. The issue needs to be studied on an urgent basis and operational decisions of a permanent nature made prior to the reorganization of the BNF. Provisional solutions such as that recommended in the BNF evaluation will simply delay and make it more difficult to face up to the issues.

The MNR's principal role in distribution of inputs has to do with improved seed. In this connection, the MNR works through its 7 Regional Offices. Cooperating in this effort are some cooperatives, INA, special experimental programs and public (BNF) as well as private credit institutions that strongly recommend improved seed in their agricultural credit programs.

Farmers can secure improved seed directly from the processing plant or through MNR regional agricultural agents. About 25 percent of improved seed is sold directly to farmers at the seed processing plants and about 65 percent is distributed through the agricultural agents. Agents have not proven to be effective seed salesmen. There is neither necessity nor justification for the MNR exercising what amounts to a monopoly on the distribution of improved seed.

The use of cooperatives as input distribution channels has proven very successful for two export oriented crops: coffee and cotton. In the case of coffee, the Federation of Coffee Cooperatives (FEHCOCAL), working together with IHCAFE distributes a wide variety of inputs to approximately 6,000 growers through 27 affiliated cooperatives. The cotton cooperative imports directly the inputs for its members, who constitute about all the producers in the country.

The history of other cooperatives supplying inputs to small and medium farmers has been somewhat uneven. It has been tried a number

of times, but to date, has not generally become a viable business for most of Honduras' cooperatives. Further explorations in this area should be made drawing on the experience of the relationship between the Coffee Institute and the Coffee Cooperatives.

4. Conclusions - Use of agricultural inputs for the integrated production and marketing of bananas, sugar cane, cotton, citrus, pineapple and tobacco is considered to be adequate. Increased use of fertilizer in coffee growing which amounted to over 20 percent of the total imports of fertilizer in 1976 is encouraging. The use of inputs for all other crops, including fruits, vegetables, corn and beans is extremely low to non-existent. It is interesting to note that crops utilizing adequate inputs have a reasonably assured market at prices that assure the producer a profit. The economic status of farmers producing the low input using crops is generally low. They are unwilling to risk the cost of inputs with no assurance of a reasonable return from an insecure market. As these factors are addressed probably on a commodity basis - use of inputs is likely to increase substantially as in the recent case of coffee.

VI.D. CREDIT

The banking system in Honduras consists of thirteen private commercial banks, three development banks and four specialized savings institutions. 1/ The Central Bank of Honduras (BCH) is the official entity responsible for definition and regulation of national monetary and banking policy. The BCH sets maximum interest rates that the banking system may apply, establishes legal reserve requirements and influences the allocation of credit through the use of special mechanisms such as rediscounts, establishment of special lines of credit, guarantee funds, etc.

The private commercial banks provide the greatest portion of the institutional credit going to the agricultural sector. Their lending for all purposes in 1976 was nearly 831.0 million Lempiras. 2/ Their new loans for agricultural purposes in 1976 amounted to about 193.0 million Lempiras. This was nearly a 100 percent increase over the previous year and the total increase can be accounted for the additional credit going to coffee and fishing.

Coffee and shell-fish prices were very high in 1976 and these two enterprises were very profitable. Also, the government gave repeated assurances to producers that coffee farms would not be affected by agrarian reform.

The dramatic increase in lending for these commodities tends to underline the importance of government policies (price, agrarian reform, marketing, etc.) in stimulating or influencing private sector participation in agricultural development.

Total institutional lending to agriculture for 1972-1976 is shown in Table I. Private banks provided approximately 76 percent of the institutional credit to agriculture in 1976. The National Development Bank (BNF) provided about 22 percent and the specialized savings and credit institutions about 2 percent. Despite the large proportion of agricultural credit coming from the private banking systems, only a few of

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1/ The three government development banks are the Banco Nacional de Fomento (BNF), dedicated to the agricultural sector, the Corporación Nacional de Inversiones (CONADI), dedicated to the industrial sector, and the Banco Municipal Autónomo (BANMA), which serves municipalities. CONADI does not really function as a bank, but does assist with some industrial financing.

2/ U.S. $1.00 = L. 2.00

the banks program or direct a specific amount of funds for agricultural credit each year. Several have a special interest in selected commodities such as tobacco, coffee or fish. Much of the other private banks' lending to agriculture is in response to the rediscount lines established by the Central Bank to encourage lending for specific agricultural purposes. This response to rediscount lines is another example of private sector response to the credit policies established by the Central Bank.

There is a considerable amount of private credit going to the agricultural sector that does not pass through the banking system. The diversity of sources and the variety of arrangements preclude the possibility of estimating the amount of this credit with any degree of accuracy. A large proportion of this credit is from both domestic and foreign sources and is associated with investment in the vertical integration of specific commodities.

The Banco Nacional de Fomento (BNF) is the public sector entity with the responsibility for agricultural credit. The total capital allocated to the Bank up to 1976 was 106.7 million Lempiras, of which Lps. 61.5 million was assigned to the Credit and Operations Department and Lps. 45.2 million to the Development Department. As of December 1976, the Bank had lost Lps. 28.8 million or approximately 47 percent of its Credit and Operations account, and Lps. 41.0 million, or approximately 91 percent of its Development Department capital. Approximately 32 percent of BNF loans in December 1976 were classified as delinquent.

The BNF was created in 1950 and charged with two broad responsibilities: 1) to serve as an agricultural bank, and 2) to serve as a development bank and to carry out certain development functions in the agricultural sector. For a long time, the BNF was the only government agency charged with rural development. Consequently, the BNF was assigned new socio-economic as well as banking functions adopted by the government to deal with new problems arising in the agricultural sector. By 1976 the disparate functions being performed by the BNF were:

- Agricultural credit and general banking operations;
- Various programs for the development of agricultural production and the raising of livestock;
- A Basic Grain Price Stabilization Program involving the purchase, processing, storage and commercialization of both locally produced and imported grains;
- The procurement and resale at reasonable prices of materials and implements needed by farmers and cattle breeders;

TABLE I

NEW LOANS FROM INSTITUTIONAL SOURCES *

(Millions of Lempiras)

	1972	1973	1974	1975	1976
TOTAL AGRICULTURE	144.5	141.0	142.8	156.4	251.2
1. Crops	61.0	64.3	74.1	105.0	184.4
Bananas	1.2	1.4	1.5	2.6	1.5
Coffee	28.7	31.6	30.8	34.5	128.1
Tobacco	4.8	3.0	4.0	4.9	4.7
Cotton	5.6	6.0	10.3	7.9	4.6
Sugar Cane	4.2	5.8	5.4	10.2	15.8
Rice	2.7	2.6	3.9	9.5	5.2
Corn	4.6	3.9	6.9	12.2	10.5
Beans	1.1	0.8	1.8	1.9	1.0
Other Crops	8.0	9.2	9.8	21.3	12.7
2. Livestock	68.8	58.4	51.7	34.9	34.4
3. Other Agr.					
Poultry	3.0	2.8	3.1	5.5	6.0
Forestry	6.8	7.6	6.7	4.6	3.4
Bees	0.1	0.2	0.3	0.4	0.6
Fish	4.7	7.6	6.9	6.1	22.4
INDUSTRY	102.4	135.4	128.7	147.1	194.3
SERVICES	27.8	31.2	65.6	86.5	88.3
REAL PROPERTY	65.2	70.7	71.0	83.7	96.4
COMMERCE	109.0	145.6	169.9	203.8	280.7
CONSUMPTION	33.2	35.4	31.2	32.8	42.2
OTHERS	1,8	1.5	8.8	2.5	4.8
TOTAL	483.9	560.7	618.0	712.8	957.9
% of Agr. Credit from:					
Private Banks	70.2	76.2	65.7	63.4	76.8
Public Institutions	29.8	23.8	34.3	36.6	23.2

*Servicios Técnicos del Caribe, Informe Sobre el Crédito Agrícola en Honduras, August 1977, p.12, and Annex 5.

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- The financing of an organization (BANASUPRO) operating an extensive network of stores selling consumer goods at anti-inflation prices;

- The development of industrial projects;

- The acquisition and administration of equity investments in various enterprises including some agro-industries and a diversity of others.

Only the first two functions are activities normally carried out by a bank. Responsibility for the latter five operations has prevented BNF management from concentrating on agricultural credit and development activities and are a major cause of the steady erosion of the Bank's capital base.

The Development Department is responsible for most of the activities not normally carried out by a bank. The principal ones are:

- Basic Grains Price Stabilization Program - The Bank supports the prices of corn, beans, rice and sometimes sorghum and sesame. The support program started small in 1951 but now has grain handling and storage facilities for nearly 970,000 quintales (44,055 M.T.). As of late 1976, this program has accumulated a net loss of Lps. 20,173,095. This loss is presently being carried in the form of a debt to BNF of Lps. 15,872,437 and a debt to the Central Bank of Lps. 6,246,270.

- Input Sales - The sale of agricultural inputs through the Bank was started in 1951. The total capital that has been allocated to this purpose is nearly Lps. 2.0 million. Losses to December 1976 have been about Lps. 730,000. In addition, a loan from the Central Bank in 1975 for Lps. 2.45 million was used for fertilizer purchases. The BCH has granted one extension to the loan, and the program now has a liquidity problem and may have difficulty in making payment.

- BANASUPRO - This program, started in 1974, established a number of retail stores or outlets to assure the availability of popular consumer products at reasonable prices. Financing totalled Lps. 3.0 million with one-third from the government and two-thirds from BNF. Losses incurred under the program as of December 31, 1976 were Lps. 723,893.

- Investment in Companies - The BNF, in an effort to encourage the establishment of certain enterprises that foster development, has invested directly in a number of commercial and industrial companies. The total investment allocated to this purpose as of

December 1976 was Lps. 46.7 million. The value of the combined investment in all companies as of December 31, 1976 was estimated to be Lps. 25.9 million. This represents a loss of Lps. 20.8 million under this program to date.

The Credit and Operations Department of the BNF carries out the agricultural credit program for the public sector. The private banking system meets much of the credit needs of the larger farmers. BNF provides credit to small, medium and large individual farmers and to agrarian reform farmers, but is required to focus on the credit needs of the reform sector and small farmers generally. The bank operates 26 agencies widely distributed around the country in order to provide convenient access to as much of its clientele as possible.

Approximately 72 percent of the bank's total portfolio in 1976 was for agricultural credit and 28 percent for marketing or non-agricultural purposes. About 17 percent (Lps. 20.3 million) of the bank's agricultural credit portfolio of Lps. 119.5 million was allocated to agrarian reform farmers in 1976, and the balance (Lps. 99.2 million) to non-reform farmers.

Providing agricultural credit to small farmers is difficult and costly to administer. In 1975, for example, about 82 percent of the loans made by the BNF were for amounts of Lps. 2,500 or less, though these represented only 17% of the value of all loans. 3/ In 1976 the BNF made direct loans to a total of 19,489 borrowers. Of this number, 3,300 loans were to 668 groups representing about 22,300 families, and about 14,300 were to small and medium farmers who were not in groups. The 1973 census figures indicate that there are approximately 162,000 farmers in the country. About 150,000 of these are considered to be in the small and medium category. The BNF credit program reached approximately 36,600 small and medium producers in that year. Given the extremely small amount of credit extended by cooperatives and other specialized credit institutions, this would imply that public sector credit institutions are reaching about 25 percent of the small and medium farmers.

An important source of agricultural credit not previously mentioned is the group of international development agencies, principally A.I.D., I.D.B. and I.B.R.D. There is presently a significant backlog of funds from these organizations already in the pipeline which have not been utilized. This availability of already-authorized funds is an important factor in the government's plan to increase public sector investment in agriculture over the next 3-5 year period (See Chapter III above, "Macro-Economic Framework"). In most cases, however, the loan arrangements

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3/ In contrast, less than 3 percent of 1975 loans were larger than Lps. 50,000 but these accounted for more than 50 percent of the total value of all loans.

limit the use of the money to specific purposes, which has the net effect of setting priorities for the use of money and staff.

A review of the external financing presently in the pipeline shows that a heavy shift of emphasis to the reform sector will be made in the 1978-80 period if funds now available are to flow as planned. The sources of financing for this period, by source, are shown in Table II. In view of past performance in the reform sub-sector, there is some question whether or not this sub-sector will actually receive all the funds shown above on a timely basis. It should be noted that a portion of the funds from AID sources permitted to be disbursed through the Cooperatives Lending Window of the BNF are available to independent cooperatives as well as reform cooperatives. However, the Bank may very well need additional resources if it completes its organizational reform and begins to substantially enlarge its portfolio of lending to traditional non-reform farmers.

The foregoing review of the agricultural credit system in Honduras helps to identify some of its strengths and weaknesses. The procedures presently in use by the private banking system appear to be quite effective in reaching primarily large and medium farmers and commodity-oriented cooperatives. It is also reaching an increasing number of small farmers principally on a commodity basis. In addition to the private banks, there is a considerable amount of credit from private sources, domestic and foreign, flowing directly into agriculture without going through the banks. Both this and the bank credit are being utilized quite effectively. There are indications of a need for additional investment credit in the sector even where production credit is sufficient. In view of the response by private banks to the Central Bank's use of rediscount lines, consideration should be given to expanding the use of this mechanism to accomplish desired objectives. Lending to vertically integrated production/marketing projects and programs should also be encouraged, especially if care is taken in project design to ensure participation by small farmers as well as by large farmers. Some lending for production should be more closely coordinated with agro-industry (processing) or marketing enterprises, a move which would help to ensure adequate loan repayment by establishment of debt collection methods at the point of processing.

The efficient functioning of the BNF is crucial to the success of many major government agricultural development policies affecting AID's target group, the small farmer. AID and the BNF first worked together in 1968 with the inception of Loan 522-L-018 which provided funds for agricultural credit and grain storage. A total of $4,500,000 in Loan funds was disbursed to small and medium farmers, with over 60% of the money going to livestock production. The Loan provided an additional $3,000,000 to the BNF for the construction of two grain silos. Problems in administration of the facilities led to major losses of stored grains and the adoption of ill-advised price and export policies hindered the

TABLE II

SOURCES OF FINANCING

(In Millions of Lempiras)

	1978		1979		1980	
Foreign Sources	Reform Sub-Sector	Non-Reform Sub-Sector	Reform Sub-Sector	Non-Reform Sub-Sector	Reform Sub-Sector	Non-Reform Sub-Sector
AID-522-T-025	10.000	-	-	-	-	-
AID-522-T-030	4.600	-	3.600	-	1.000	-
BID 2nd Step Bajo Aguán	13.100	-	13.100	-	5.584	-
AIF 3rd Livestock Project	5.000	4.000	6.000	5.000	4.000	4.000
AID-522-T-032	2.000	-	3.500	-	4.500	-
SUB-TOTAL	34.700	4.000	26.200	5.000	15.084	4.000
Internal Sources						
Central Gov't. Loan Counterpart	9.822	.540	4.660	.600	3.632	1.050
Central Bank (Cotton & Coffee Rediscounts)	4.000	6.000	4.000	6.000	4.000	6.000
Loan Recuperations 1/	6.000	42.000	35.000	17.000	40.000	27.100
Commercial Paper issues	-	3.900	-	5.000	-	5.000
Increased Savings Deposits	-	4.000	-	5.000	-	6.000
SUB-TOTAL	19.822	56.440	43.660	33.600	47.632	45.150
TOTAL	54.522	60.440	69.860	38.600	62.716	49.150

1/ Loan recuperations shown are net after deducting the estimated amount needed to cover current obligations, increased reserve requirements and bad debts.

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realization of the full potential of the facilities to contribute to the Basic Grain Price Stabilization Program.

AID Loan 522-L-021, the Grain Marketing Project sought to help the BNF in its grain price stabilization efforts in 1973 with the infusion of $2,000,000 into the Bank. Once again, administrative and management problems resulted in grain losses which, together with unfavorable weather conditions, resulted in severe grain price fluctuations.

During the years 1974-1977, AID and the BNF entered into four separate agreements (Loans 522-T-025, 522-T-026, 522-T-030, and 522-T-032) which provided $28.1 million in agricultural credit and grain purchase monies to the bank for the use of small farmers (mostly in agrarian reform farms) and support of the Bank's Grain Stabilization Program. Only one of these loans, 522-T-026, which provided $9.5 million in credit and $3.0 million in grain purchase funds, has been completed to date. Almost all of the credit funds were disbursed to individual small farmers primarily for the production of basic grain crops. All of the grain stabilization funds were disbursed to the Bank in support of its program, but administrative problems, faulty policy decisions and the weather combined once again to cause marked fluctuations in grain prices over the past two years. Concurrent with its efforts to provide financial support to the BNF, AID has assisted the BNF to evaluate and make recommendations to improve its management and administrative procedures. AID contracted the public accounting firm of Peat, Marwick, Mitchell & Co. in 1974 to review and suggest a restructuring of the accounting system of the BNF. AID Loans 030 and 032 contain funding for training to upgrade the technical capabilities of the BNF's staff.

In late 1975, a special audit team of the Central Bank reported that serious irregularities had been encountered in the BNF's grain stabilization program. Several resignations were accepted, and by early 1976 there had been a radical change in top management, including the appointment of a new President, a former Minister of Economy and an experienced commercial banker. Concurrently, AID brought in the management consulting firm, Coopers & Lybrand, to review not only the grain stabilization program but all banking operations. Four senior members of the firm made an intensive study of past and present operations. They concluded that: (1) all individuals implicated in the grain scandal were no longer in the employ of the Bank; (2) the Bank was experiencing serious liquidity problems; and (3) the base of human and physical resources could effectively manage an agricultural banking program if radical changes were made in the organizational and operational framework of the Bank.

The Coopers & Lybrand Report contains many recommendations which can best be summarized under five principal headings:

1. A new charter for the Bank refocusing their scope on agricultural credit delivery;

2. Clearly defined and less diversified functions;

3. A revised organizational structure and new or improved systems and procedures;

4. Training and motivation of key personnel;

5. Financial assistance to remedy present conditions.

In 1977, as one consequence of the above reports, the BNF and the Government of Honduras requested AID assistance to develop a plan aimed at restructuring the Bank. USAID contracted Servicios Técnicos del Caribe (STC) to work with bank officials in preparing the plan. The group recommended:

1. That the BNF eliminate the Development Department and reorganize the Credit and Operations Department into a National Agricultural Bank with no other responsibilities. The following internal changes and adjustments were suggested:

- Establish a trust fund arrangement for Agrarian Reform Credit so that these funds will retain their identity, and the Bank's capital will be protected. If lending to this group is going to continue a major responsibility of the Bank, the Government must be prepared to reimburse the Bank for the social aspects of the credit program. The Bank's capital must be protected against losses over and above what would be considered reasonable or normal bank losses under good management.

- Establish regional offices to provide closer supervision and greater assistance to the Bank's agencies.

- Reorganize internal operations and policies so as to improve staff capability, reduce delinquencies, improve planning and reduce the cost of operation.

- Streamline Cooperative Lending Window procedures and strengthen staff capability in the specialties of cooperative lending.

- Recapitalize the Bank so as to give the reorganized BANAGRO solvency and liquidity status.

It is anticipated that the amount of lending and the number of new loans would increase significantly once the Bank is reorganized. The level of new lending needed is expected to be approximately Lps. 40 to 50 million for agricultural production and investment credit over the

next two years.

2. Establish a new Honduran Agricultural Marketing Institute and transfer to it the responsibility for the price support program, the input supply stores and, initially, the consumer stores (BANASUPRO). The latter should eventually be transferred to the Ministry of Economy, if and when arrangements can be made and if a comprehensive evaluation of the program determines that there is still a need for it. In any event, both the input supply stores and the BANASUPRO stores should be operated like viable private businesses or cooperatives so that losses will be eliminated.

3. Transfer to the Corporación Nacional de Inversiones (CONADI) the BNF shares in the various companies under the Investment in Companies program and remove industry investment functions from the Bank.

Since the completion of the study and the plan for restructuring the bank, the GOH has taken several actions to implement the report's recommendations. The decision was made to create a new national marketing institute to assume responsibility for the price stabilization program. The law creating this institute was signed in February 1978, and the institute will begin operations within the next few months. The draft law does not transfer responsibility for the input stores or BANASUPRO to the institute. No firm decision has yet been made concerning their disposition. The government is now drafting a new basic law for the reorganization of the BNF, but it may be some time before it is promulgated. The final decision on the input stores and BANASUPRO should be made before the bank is reorganized under this new law.

Both the Coopers & Lybrand and Servicios Técnicos del Caribe studies emphasized the fact that the Bank needs to improve the performance of its Loan Portfolio in general and its credit review and loan repayment collection systems in particular. Loan delinquencies have been a chronic problem and have played a major part in the decapitalization of the Bank. Approximately 32 percent of BNF loans were classified as delinquent in 1976 and 38.9 percent so classified in 1977 (See Table III below). The BNF has contracted Servicios Técnicos del Caribe under A.I.D. Technical Support to study its loan and bad debt collection and control systems in an effort to deal with this problem. At the same time the Development Support Bureau of AID is funding a two-year grant project which will study the small farmer credit repayment system in Honduras with particular emphasis on the relations between the BNF and its borrowers. Part of AID's technical assistance package to the Bank will also focus on loan evaluation and collection systems.

TABLE III

BNF PORTFOLIO AND DELINQUENCY BY SUB-SECTOR AS OF AUGUST 31, 1977 COMPARED TO 1976 FIGURES

(Millions of Lempiras)

Reformed Sector	1976		1977	
Loan Status	Amount	%	Amount	%
Up to date	13.3	53.0	10.4	39.5
Delinquent	7.8	31.1	11.4	43.4
Extended and Refinanced	4.0	15.9	4.5	17.1
TOTAL	25.1	100.0	26.3	100.0
Non-Reformed Sector				
Up to date	56.9	54.7	54.8	53.4
Delinquent	35.3	33.9	36.2	35.4
Extended and Refinanced	11.9	11.4	11.4	11.1
TOTAL	104.1	100.0	102.4	100.0
GRAND TOTAL	129.2	--	128.7	--

Source: Technical Division - BNF

There are currently U.S.$650,000 of AID funds available to the bank for technical assistance. A technical assistance plan was developed by the Bank as a Condition Precedent for AID Loan 030 using these funds to help resolve the operational and management problems of the Bank's Cooperative Lending Window. The plan provides for immediate technical assistance in institutional development, livestock, agricultural credit, credit for cooperatives and related groups, data processing and banking organization and services. Technical assistance in capital acquisition, finance and banking systems and procedures is to follow upon the signing of the new Bank Law. In addition, the Bank is creating a training section and has developed a staff training program combining long-term overseas university study, work-training in other overseas development banks, and local training to up-grade the financial and operational capabilities of BNF personnel in general.

After the new law is passed and the Bank has divested itself of the Development Division with its inherent problems, it will be important to move quickly toward the establishment of an efficient agricultural lending institution. Some of the key indications of good performance or progress that should be checked periodically in the six to eight months following reorganization are:

- The experience and capability of the ten to fifteen officers in key positions such as department and division heads;

- The procedures for dealing with the delinquent portfolio and the relationship between past due and total portfolio;

- The development of a viable system of financial planning by the Bank.

Improvements are also necessary in the delivery aspects of credit services. The following methodological questions should receive prompt attention:

- The establishment of regional offices to improve supervision and flexibility of local agencies;

- Provision of credit education for the small farmer prior to authorization of their initial loan to ensure that they understand the credit process. (Some funding for this is available in AID Loan 025);

- Assessment of the farmer's capacity to pay prior to authorization of Loan. (Funding for this is available in AID Loan 030, farm planning component, and in AID Loan 032);

- Use of paraprofessionals trained in credit and investment evaluation as field evaluators reporting to a BNF agronomist in each zone;

- Creation of a zone technical team combining inter-agency technicians with a BNF agronomist and BNF field evaluators to allow direct field coordination of BNF, INA, MNR, and other agencies involved in rural development in the zones;

- Longer assignments of field evaluators to enable them to gain a thorough knowledge of the clients in their zones;

- Promotion of credit services and follow-up at the farm itself so as to reach greater numbers of farmers now not having access to the field evaluator; (credit for such mobile units is provided for under AID Loan 025);

- Resolution of the problem of late credit delivery to farmers by, among other actions, staggering the periods of capital loan demand of the BNF so that these do not coincide with the peak periods in credit demand;

- A capital reserve creation program which will encourage creditors to contribute to building up a financial cushion for emergencies.

There are a number of cooperatives, credit union federations, and other organizations that extend some credit to their members. Most of these are organizations of small farmers that do not have access to the principal sources of financing. The banking laws of Honduras do not permit the BCH to deal directly with these entities although it is possible for the BNF or other banks to lend to associations or federations of cooperatives, such as FACACH, and these can sub-lend to member cooperatives. Presently, the BNF can sub-loan to other sectors and can sub-loan to federations of small farmer groups at 6% interest rate. Sub-loans to these small farmer federations is a possible means to dealing more effectively with a larger number of small producers. It is estimated that there are about 11,000 members of cooperatives, credit unions, etc. The total lending of these organizations to agriculture and livestock in 1978 was only about Lps. 4.7 million. (For additional details concerning cooperatives, see Chapter V-D above).

As mentioned previously, it is estimated that nearly 75 percent of the small farmers in the country presently are not receiving any institutional credit. Because of the difficulty and high cost of making large numbers of small loans to a widely scattered target group, the BNF will have to continue to take the responsibility for servicing the majority of this group. The bank should experiment with a broad range of means or mechanisms to reach, directly or indirectly, this sub-sector with agricultural credit.

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Women, both in groups and as individuals, have virtually no access to credit from the BNF or other financial institutions. In view of the potentially significant productivity of women in food production and processing, in limiting post-harvest losses, and in agro-industry, the BNF should eliminate policies that discriminate against women and instead identify ways to extend credit to groups of reform and traditional sector women for livestock enterprises, fruit and vegetable production, and small cottage industries. Methods of lending could be designed to capitalize revolving funds for the women's organizations of ANACH, UNC, and other private sector institutions to be used for the type of projects listed above.

Since a large majority of small farmers are not receiving credit from lending institutions, it can be assumed that many of them are obtaining credit from other sources. More information is needed to determine interest rates, availability, source, etc., of non-institutional credit being used by small farmers in the different areas of the country. If merchants, truckers, etc., are important sources of non-institutional credit and if their operations are constrained primarily by the limitation of funds, it might be feasible for the Bank to work with or through the wholesaling sector with these private lenders to reach a greater number of small farmers.

VI.E. MARKETING AND PRICE POLICIES

A farmer's feeling of confidence in his ability to readily dispose of the commodities he produces when he wants to, and at a profit, influences his decisions of what to produce and how much to produce more than any other single factor. Programs designed to increase agricultural output that do not properly take into account this basic fact are doomed to failure. One of the most successful approaches in Honduras, for certain commodities, has been the current strategy of dealing with marketing constraints on a product-by-product basis in an integrated approach through agro-industry. Some of the most successful examples are discussed below.

Both the cigar and cigarette industries are integrated from production through processing, and manufacture or export. The local cigarette company, located in San Pedro Sula, is a good example of marketing through a well integrated agro-industry. The company makes individual contracts with small and medium producers, clearly specifying what the company will provide in the way of technical assistance, inputs and help in obtaining credit. The contract also spells out in considerable detail what is expected of the farmer and the price that will be paid for leaf based on described grades or classes. GOH planners may be well advised to study the tobacco company's system carefully as it can be adapted to work well with many commodities or commodity groups. The company does not experience the chronic difficulties or poor offerings, or shortage of raw material to the extent expressed by non-integrated agro-industries. The tobacco farmer has the advantage of knowing, before he plants, where he is going to market his product and at what prices, based upon quality.

The banana is highly exacting in its soils and climatic requirements for successful commercial production. Banana marketing is probably one of the most highly specialized and delicate systems in existence and requires a highly integrated approach. The system is evolving whereby there is increasing participation in production by contract farmers including groups from the reformed sector, while sales services are performed by firms highly skilled in marketing. This system that is working out well for bananas is now being extended to include melons, tomato, cucumber, grapefruit and pineapple. Outside assistance--bringing technology and marketing experience to the country--can be invaluable in accelerating the growth of these new industries. Incentives and promotional effort that will attract reputable international companies which are specific product-oriented to help stimulate the production and export of other commodities for which Honduras has a comparative advantage could provide great benefits to the country.

Coffee culture has improved over the past several years as it has become vertically integrated under the guidance of the Coffee Institute and with added assistance from the coffee cooperatives. Methodology

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for dealing with the complex problems of thousands of small producers, that has been developed by the Coffee Institute and coffee cooperatives, could serve as a guideline to develop integrated systems to deal with other commodities.

Integrated agro-industrial or commodity development, drawing upon the experience of the models of tobacco, bananas and coffee, discussed above, could help accelerate the production for internal use or export of a wide range of crop or livestock products. The provision, by the private sector including cooperatives, of technical assistance, help in arranging credit and a firm market through vertical integration, by commodity, could greatly reduce the heavy burden being placed upon the public sector institutions such as MNR, INA and BNF.

Production and marketing of five major export crops, i.e., bananas, coffee, sugar, cotton and tobacco, are well integrated vertically. Collectively, they account for over two-thirds of the value of agricultural exports. They provide employment or income for thousands of small and medium farmers. They receive the majority of the required technical and marketing guidance from the private sector. Thus, Honduras is well advanced in a wide range of on-going, successfully integrated agricultural commodity production and marketing enterprises that present minimal marketing problems for over-burdened public sector agencies.

A brief discussion of internal marketing infrastructure and channels for the integrated agro-industries mentioned above, as well as other product groups, such as fruits and vegetables, livestock and livestock products, and basic grains will help illustrate some of the strengths and constraints of the Honduran marketing system.

The municipal markets constitute the most important distribution channel for the agricultural commodity production destined for internal consumption. Large quantities of fruits and vegetables, basic grains, meat, poultry, dairy products and many other items flow through this channel of distribution, from rural production areas to the central urban consumption centers. The products are moved by approximately 4,000 truckers who, in many instances, purchase the produce for resale at a terminal market. In other cases, they may simply be hauling for other middlemen. Products may be picked up at the farm level or at nearby collection centers or private warehouses. These collection points are quite rudimentary and frequently have no means of protecting the produce from the elements. From the collection points, the produce is transported principally to municipal markets. The deficiencies in the municipal markets are similar to those of other Latin American countries; a large number of stalls with limited space, poor physical facilities for handling, storage and movement of products, rapid deterioration of produce, poor hygienic facilities and others. On the other

hand, it is evident that the municipal markets will continue to play the major role as the main distribution channel for internal consumption in the short and medium term. Seventy-one (25%) of the country's 280 municipalities, have municipal markets. The 25 percent are located in concentrations of population.

Under the Municipal Development Program (Loan 024), USAID is financing 64% of the cost of certain sub-projects in polar and sub-polar communities through the Banco Municipal Autónomo (BANMA). As of December 1977, work has been completed on two municipal markets, with fifteen more in the planning or construction stage. Other sub-projects allowable under the Project, such as slaughter houses, which assist in increasing the production of agricultural products, are planned for future development.

With the exception of a few wholesalers located away from the municipal markets, they are the sites of greatest importance in the distribution process. Wholesalers, retailers, peddlers, tiendas and supermarkets, all depend upon the municipal market for a wide range of products. The municipal markets constitute highly important sites for the concentration and distribution processes with almost direct contact with producers all over the country. These markets handle about one-half of the basic grains that are sold, about 90 percent of the vegetables, the majority of the fruits for national consumption, and high percentages of meat, poultry, eggs, and dairy products. It follows then, that the municipal markets and their transportation network into the production zones must receive special attention in developing strategies to improve the marketing of agricultural commodities for internal consumption.

The two population centers of Tegucigalpa and San Pedro Sula each have a number of important municipal markets. Tegucigalpa is the central nerve of the national marketing system for sale of unprocessed agricultural goods. The city's six municipal markets all need improvement and modification of facilities. Plans are to complete the central wholesale market that was started several years ago and use this to supply the neighborhood markets. The four public markets in San Pedro Sula are newer and more efficient than the ones in Tegucigalpa.

It has been estimated that the four basic grain crops, (corn, rice, beans and sorghum) supply about 57 percent of the calories and 49 percent of the protein in the Honduran diet. One or more of these crops are cultivated by over 70 percent of all farmers. Approximately 68% of corn production and 32% of the bean production is consumed on farm. These figures include post-harvest losses to rats, molds and insects. Of the amounts that enter the marketing channels, the producer sells about 60% directly to merchant/truckers, 10% to the BNF and the remaining 30% is about evenly divided among merchants and wholesalers.

The BNF is the principal sector institution involved in the buying, storage, and distribution of basic grain. The Bank has a current storage capacity of 44,055 metric tons. This capacity represents approximately 10% of the expected production of basic grains for 1978. The cumulative capacity constructed since the first grain storage program was initiated in 1951 is considered sufficient for a smooth price stabilization operation by the new Autonomous Grain Marketing Institute (Instituto Hondureño de Mercadeo Agrícola, IHMA) which is now being organized. The new Institute is designed to overcome some of the constraints that have caused the BNF grain program to be largely ineffective.

The conservation and marketing of cereals program has been operating in the Development Division of the BNF with the mandate of both stabilizing and supporting prices of basic grains, (corn, rice, beans, and sometimes sorghum and sesame) at both the producer and consumer levels. Decisions are made by a Basic Grains Policy Commission made up of three members from the public sector and two members from the private sector. The administrative procedures used are more suited to the needs of a financial institution than they are to the commercial operations of a grains purchase, storage and sale facility. Thus, operation decisions that require quick solutions are frequently delayed, to the detriment of the program. For example, the accounting system, located in another department of BNF, often is unable to provide important information on a daily basis, thus further limiting ability to make rapid, sound operating decisions. Procurement of regions, flexibility in operating hours, overtime provisions for peak work periods are governed by administrative procedures which are not responsive to the needs of the managers of the facilities.

The program has largely limited its sales to the public sector of the internal market. Thus, the buying and selling of grains operates in only a small fragment of the market; a large percentage of sales are to BANASUPRO, a retail distribution network, which is also part of BNF. BANASUPRO sales are directed mainly to the low income urban population. This program is also in financial and administrative difficulty. Other sales outlets include public sector organizations, non-profit organizations and grain-using industries. Such a limitation on sales has largely eliminated the program's effectiveness as an instrument for price stabilization. Attempts to support prices have also failed due to lack of storage space and shortage of funds to purchase offerings at the guaranteed price. Failure to carry out commitments under a price support program erodes farmer confidence in government and tends to depress subsequent production. Neither the general public, the producers, nor the market men understand the way in which the Basic Grains Commission arrives at its policy and action decisions. The net result is a program which in recent years has required heavy subsidy (mostly

at the expense of BNF capital) and which is not complying with its objectives.

The new autonomous government marketing agency (IHMA) has an excellent opportunity to carry out successfully its stated objective which is:

> "To stimulate the improvement of the marketing systems for basic grains, assuring the stabilization of prices in the national market by direct intervention in the purchase and sales of these products in the internal or export markets of the country, in order to guarantee an orderly and stable market for the producer and an adequate supply for the consumer. To the extent that the country requires and the resources of of the Institute permit, the marketing of other agricultural products will be undertaken."

This mandate seems much broader than a fledging institute should undertake at once without considerable help from other organizations. IHMA will start out with enough storage capacity to handle about 10 percent of the expected 1978 harvest and enough capital to enter into a vigorous program of buying and selling basic grains. By timing purchases to coincide with primera and postrera harvest and selling when prices are high, their ability to handle 10 percent of the harvest is considered to be sufficient to have a marked effect on smoothing out the wide price fluctuations caused by cropping cycles within each year. IHMA should avoid the handling of highly perishable commodities such as potatoes, other vegetables and fruits. Handling these commodities is highly risky even when an organization has the proper equipment such as cold storage, or refrigerated trucks. By specializing only in basic grains, IHMA has a much better chance of becoming and remaining a viable institution.

The operational norms of IHMA should be clearly established and published in order to gain and maintain the full confidence of producers, internal buyers and exporters. This should include the basis on which it buys and sells, when it will export, when it will import, and how prices are established. In order to perform efficiently, the Institute should have flexibility of operations, and a minimum of administrative restrictions. It must have access to timely and reliable information on crop forecasting, domestic demand, and the international supply, demand and price situation. Much of this information can best be supplied from appropriate departments of the MNR.

A successful price stabilization program for basic grains will tend to regulate the private sector which will continue to handle 90 percent of the nation's grain. The producers and private marketing sector need considerable help, guidance and regulation that demands a much

broader technological base than IHMA should be required to support. The Institute should not carry out these functions, which conceptually belong in the MNR. This is especially pertinent in that many of these functions can and should have broader commodity implications than just basic grains.

Some of these functions or program implications are:

(a) Working with farmers, truckers and merchants in the reduction of post-harvest losses. Estimates of these losses run as high as 50 percent for corn and 25 percent for beans. Losses for perishable commodities may run even higher. Thus, programs designed to reduce losses can pay huge dividends in terms of value and food availability at the consumer level. Such a program could be planned, implemented and evaluated through a marketing unit located in the MNR. The program would require the assistance of research, extension and other elements of the MNR as well as BNF, INA, IHMA and the private sector.

(b) Collection and distribution of timely information on internal supply and demand, export demand, and prices for a wide range of commodities. This information could be further analyzed to determine periods of shortage or surplus for a wide range of food crops. Then, through truckers and middlemen, backward linkages to the farmer could be established to develop programs designed to spread the harvest of specific food commodities more evenly over time. This again is a function which could be located in the MNR.

(c) Determining the full role of the approximately 4,000 truckers in the marketing channels. Study to this end may reveal ways that could help administer credit, lower freight rates by using backhauls or improve quality and reduce post-harvest losses by better packaging.

(d) Market studies could give information and background for the promotion of site-specific small agro-industries.

(e) Determining on a site and/or product-specific basis the potential for action by cooperatives in marketing activities. See Chapter V-D for detailed treatment of one possible approach along these lines that could benefit from the advice and guidance of a marketing unit in the MNR.

Another major component of the marketing/price policy complex is the price control program being administered by the Ministry of Economy under the authority of Decree Law 91. There are indications that the manner in which this decree has been implemented may have favored middlemen and consumers at the expense of the profit margins of producers. If so, it may have tended also, to discourage investment and production at the farm level for some products.

A thorough study and evaluation of the program with a view to recommend desirable modifications in its orientation, application and administration is suggested.

The consumer may benefit in the short-run from prices arbitrarily fixed at local levels for basic commodities. In the medium and long-term, however, he may well have to pay escalated prices due to production disincentives at the farmer level. The supply of the product must then be stimulated through higher prices to the farmer or for imports. Rationing may also be necessary. The point of equilibrium is when the price of a commodity is high enough to stimulate sufficient production to maintain a supply at the desired level.

The cost of production for many items under price control rose more rapidly than the price received by the producer during the 1972-1976 period. In the following table are shown the annual averages for production costs and price increments for this period.

	Average Annual Production Cost Increases (%)	Average Annual Price Increases (%)
Oil Palm	29.8	17.6
Tomato	7.4	-0.1
Poultry	17.6	0.2
Sugar Cane	8.8	1.9
Coffee	6.2	16.1
Corn	7.0	13.7

Comparing the increments in cost of production with the increments in prices paid to farmers, the cost increased more rapidly for the first four commodities and the price for the last two. There is a wide margin of difference in the cases of poultry and oil palm. Some portion of cost increments may be accounted for by improvements in production and marketing, which would mean that there may not be production disincentives even if prices do not keep pace with costs.

Prices for selected agricultural inputs from 1972-1976 present an average annual growth rate of 13.1%. Discounting the inflation rate at an average 8% still gives an average annual increment of 5.1% which for the period represents an increase of 22%. Comparing the average annual increment in production costs of 12.8% with the average annual increment of input prices of 13.1%, it is noted that there is no significant difference between the two, and probably the two are correlated. Since the average annual price increase is slightly over 8%, it could be concluded that price control efforts have hurt the agricultural sector because of a less effective price control for inputs than for agricultural products.

The annual production increment for some products under price control from 1973-1976 has not been high enough to keep up with demand requirements. There are a number of factors such as weather and political unrest that can partially account for this poor performance but price controls must bear a share of the blame.

Product	Production 1973	Production 1976	Average Annual Increment
	('000)		%
Sugar cane (hundred pounds)	26,860	35,030	9.3
Oil Palm (hundred pounds)	1,123	1,345	6.1
Coffee (hundred pounds)	1,110	1,208	2.8
Corn (hundred pounds)	7,726	7,860	0.6
Poultry (hundred units)	3,365	3,882	4.8
Fresh milk (hundred liters)	186,589	208,393	3.7
Eggs (thousand units)	201	200	-1.7

The price of milk, which is subject to price controls, is particularly interesting. In 1976 milk imports amounted to over $4.5 million, with a C.I.F. average price of $1,508 per metric ton, which is equal to a price of $1.51 per kilogram. According to the instructions on the box of Nido brand powdered milk, 130 grams are required to make one liter of reconstituted milk. The 130 grams of powdered milk cost $.19 C.I.F. Puerto Cortés. In comparison, the Honduran dairy farmer received only $.15 per liter for fresh milk.

There is no assurance that higher retail prices would have been passed on to the producer, or that if they had it would automatically have resulted in production increases (many other factors such as land use policy intervene). Nevertheless, when one has a product where the efficiency of the Honduran producer is lower than that of producers in exporting countries and the price he receives is also lower than the landed cost of the comparable import, it is reasonable to suspect that there may be a price disincentive to increased domestic production.

VI.F. AGRICULTURAL INVESTMENT

Historically, private investment has played the principal role in fixed capital formation within the agricultural sector. This situation is likely to change over the next few years because of Government policy toward concentration of public investment efforts primarily in the agricultural sector (41.9% of programmed investment funds are to be used by the agricultural sector during the 1977-83 period).

For the 1970-76 period, the economy as a whole presented an average investment multiplier of 3.1 and the corresponding figure for the agricultural sector was 3.4. This means that even in an unfavorable growth period for the entire economy, investment in agriculture was generating more economic growth than investment in the other sectors of the economy. Analyzing the marginal propensity to invest it is found that on the average, during the 1970-76 period, 33% of income increments went to investment in the non-agricultural sector, whereas in the agricultural sector the comparable figure was 29%; for the 1965-70 period, the marginal propensity to invest in the agricultural sector was 40%.

1. Private Investment - Private investment accounted for 97.3% of total agricultural investment during the 1965- period. For the 1977-83 period, private investment is estimated to represent about 44.4% of total agricultural investment and the public sector the remaining 55.6%. It is worth noting that public investment includes financial investment and this, in some cases, may become private investment since, as will be mentioned later, the Government serves as a financial agent; it also needs to be mentioned that development expenses are included under public investment and that whether this should be treated as investment or not, is a debatable point. The following table shows the composition (private and public) of investment in the sector.

TABLE 1

COMPOSITION OF THE AGRICULTURAL SECTOR INVESTMENT 1965-83

(In Millions of Lempiras)

Year	Total	Public	Private 1/
1965-69	284.0	3.6	280.4
1970	75.5	1.1	75.4
1971	74.0	0.6	73.4
1972	77.4	0.8	76.6
1973	93.1	1.1	92.0
1974	108.5	4.6	103.9
1975	119.5	11.0	108.5
1976	119.7	N/A	119.7
1977	320.8	188.5	132.3
1978	399.6	253.4	146.2
1979	444.2	282.7	161.5
1980	521.7	343.2	178.5
1981	515.7	318.5	197.2
1982	449.3	231.3	218.0
1983	489.0	248.2	240.8
TOTAL 1965-83	4,093.0	1,888.6	2,204.4

1/ For private investment from 1976 to 1983, the average annual growth rate for the period 1960-75 (10.3%) was used.

SOURCE: Public investment until 1975 from Central Bank, from 1976-83 from the National Investment Program 1976-83; and private investment until 1975 from Central Bank, from 1976 to 1983 figures are estimated.

The Table that follows shows that both relative and actual investment participation of the fruit companies has declined over the period 1970-76:

TABLE 2

AGRICULTURAL PRIVATE SECTOR INVESTMENT 1970-76

(Millions of Current Lempiras)

Year/Source	Fruit Companies 1/	Agrarian Reform Groups 2/	Other 3/	Total 4/
1970	20.9	-	54.5	75.4
1971	8.1	-	65.3	73.4
1972	8.7	-	67.9	76.6
1973	6.2	1.5	84.3	92.0
1974	8.0	4.4	91.5	103.9
1975	5.1	7.5	95.9	108.5
1976	6.9	2.2	110.6	119.7
TOTAL	63.9	15.6	570.0	649.5

1/ Fruit Companies data from Central Bank.

2/ Agrarian reform group's investment assumed to be equal to BNF loans of over 18 months' duration to the reform sector.

3/ Calculated by difference, corresponds to private owners.

4/ Central Bank National accounts.

This Table also indicates that there was no investment by agrarian reform groups registered during the 1970-72 period and that investment by this sub-sector after this period was very modest. Because of the definition used, the level of investment by this sub-sector could be either understated or overstated. In any case, private owners accounted for the bulk of total private investment. During the 1970-76 period, this sub-sector increased its investment at an average annual rate of 10.7%. During the 1976-83 period, the National Planning Agency (CSPE) anticipates an annual rate of increase in investment for the entire

private sector of only 4%. Since the reform sub-sector is assumed to increase its participation, this would mean that the private owners, who had an average annual rate of increase of approximately 15.6% in the 1970-76 period, would considerably reduce their investments in the near future. However, as was indicated in Table 1, it is believed that the rate of increase of private sector investment in the sector could very well continue to be over 10% per annum.

In 1977, the reform sector received Lps. 17.2 million in investment credit from the BNF, a jump of Lps. 15 million from 1976. BNF financial projections show that it is intended to maintain this level of investment credit to reform groups and, therefore, it can be assumed that they will maintain at least this level of participation in private investment in the coming years (programmed investment credit for the three-year period 1978-80 is estimated at Lps. 54.2 million; Lps. 17.2 for 1978, Lps. 18 for 1979, and Lps. 19 million for 1980).

2. Public Investment

a. Relationships between sectors - During the 1965-75 period, public sector investment was concentrated in physical infrastructure, including transportation, power, and communications with the emphasis in that order. Infrastructure investment during this period averaged about 64% of total investment; the social sectors (education, health, water and sewerage, housing and urban development) averaged around 32%; and the agricultural sector only a little over 4%. Programmed investment for the 1976-83 period, shows that a major shift to the agricultural sector is taking place. For this period, agriculture, including forestry, accounts for almost 42% of total investment, whereas transportation represents approximately 15% and energy increases its share to about 24%. The yearly average investment of the agricultural sector for this period is estimated at Lps. 233 million, up from Lps. 3.2 million per year for the 1970-75 period.

TABLE 3

PUBLIC SECTOR INVESTMENT PROGRAM 1977-83

Investment	Total	Agricultural Sector	Other Sectors	Ag. Sector as % of Total
Real	2,625.9	336.8	2,289.1	12.8
Financial	1,648.8	1,343.2	305.6	81.5
Development Expenditures	188.4	188.4		100.0
TOTAL	4,463.1	1,868.4	2,594.7	41.9
External Funds	2,749.0	1,015.5	1,733.5	36.9
Domestic Funds	1,714.1	852.9	861.2	49.8

SOURCE: National Investment Program 1976-83, CSPE, 1977

Public investment is broken down into three categories: real, financial and development expenditures; unfortunately, the last category was previously included in current expenditures and thus it is not possible to compare past trends to programmed expenditures.

b. Real Investment - As used here, real investment means, in general terms, the acquisition or construction of physical facilities, equipment, infrastructure, development of human and institutional resources, and the like, e.g., providing irrigation facilities to the experimental stations, training the personnel of the Artificial Insemination Center in San Pedro Sula, Agricultural Research and Extension, construction of warehouses and silos.

Total public real investment for the period 1977-83 is estimated to be approximately Lps. 1,868.4 million, of which the agricultural sector participation will account for only 12.5%, energy 40% and transportation 24.8%, the three sectors representing almost 78% of the total. The financing of the total real investment has an external/domestic funding ratio of 2 to 1, which also applies to agricultural real investment.

As a percentage of total real investment planned, transportation shows a sharp decline. However, in absolute terms, the average for the 1977-83 period is Lps. 92.9 million per year, without including the road construction component of the Olancho forestry project. This compares to an average budget execution of Lps. 58.5 million during the 1965-75 period, with the range varying from Lps. 11.4 in 1965 to Lps. 89.8 million in 1975. To the extent that the execution capacity of the Ministry of Public Works is expected to be a limiting factor--as has been the case in the past--holding the absolute level for 1977-83 at the highest annual implementation level of the past is probably prudent. If, on the other hand, improvement in construction capacity can reasonably be expected, the level of programmed investment in roads--especially feeder roads--should be re-evaluated.

Within the agricultural sector, real investment is principally going into irrigation and drainage and integrated development, 37.1% and 43% of the total, respectively.

c. Financial Investment - Under financial investment are included all the activities in which the Government is either a partner or serves as a financial agent. For the 1977-83 period, financial investment represents about 37% of total planned investment, and the agricultural sector absorbs 81% of this total. Almost 62% is for production credit, 1/ and 29.5% corresponds to funds for financing different forestry projects, among which the most important is the Olancho forestry project. Financial investment is 42.6% financed from domestic funds, and the remaining 57.4% from external financing. 82.9% of the domestic financing goes to the agricultural sector; that is to say, most of the domestic financing of financial investment is for agriculture.

d. Development Expenditures - Planned development expenditures principally covers research and extension and human resources development, including farmer training. Development expenditures, as used in the National Investment Program, take place only in the Agricultural Sector. Programmed expenditures for the 1977-83 period amount to a total of Lps. 188.4 million, its sources of financing are mainly domestic (75%), and funds are available only to the Ministry of Natural Resources (MNR) and the National Agrarian Reform Institute (INA). The distribution shows almost 53% of the total goes to INA and the rest to the MNR. Under development expenditures are covered expenses such as salary costs, vehicle maintenance, per diem, and all other costs, in projects related to production diversification, zonal integrated agri-

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1/ It is understood that in computing the amounts shown in the national investment program for production credit, the total amount of anticipated lending by the BNF, rather than contribution to BNF capital, was the concept used. Applying a more conventional definition of "public sector investment," would of course result in a substantial reduction in the level of investment at all levels--perhaps as much as 40% for the agricultural sector and 15% for the entire public sector.

cultural development, research, extension and colonization.

e. Summary of Planned Public Agricultural Investment - The following table summarizes the planned real and financial investment by purpose of investment. It should be noted that while Agrarian Reform is shown as only receiving 6.5% of real investment, a significant but undefinable portion of many of the other investment items are intended to directly or indirectly serve the needs of this program.

TABLE 4

PUBLIC AGRICULTURAL INVESTMENT PROGRAM 1977-83

(In Millions of Lempiras)

	Real	Financial	Total
Irrigation and drainage	124.8		124.8
Production diversification, research and extension	8.8	3.0	11.8
Integrated development	144.9	23.9	168.8
Forestry 1/		395.9	395.9
COHBANA	6.0	52.9	58.9
Agrarian Reform	21.8	-	21.8
Production Credit 2/		829.4	829.4
Other	30.5	38.1	68.6
TOTAL	336.8	1,343.2	1,680.0

1/ Includes Lps. 344.6 million for the Olancho Forestry Project (Pulp and Paper Project)

2/ BNF production credit

SOURCE: National Investment Program, 1976-83, CSPE, 1977

VI.G. INTERMEDIATE TECHNOLOGY

Many of the medium and larger farmers in Honduras are using high levels of technology. In some commodity areas, such as coffee, small farmers are moving quite rapidly to the use of better methods, improved planting material and more efficient marketing practices. In general, however, most of the smaller farmers in the country utilize very low levels of technology.

Throughout Honduras, there are too few machines and other agricultural implements which appropriately complement the resource base of existing farmsteads. Modern farm machinery developed for the farming sectors of developed countries generally is inappropriate in the Honduran context because it idles human resources and is difficult to maintain. At the other extreme, traditional technologies tend not to be sufficiently productive to permit utilization of available land, thus permitting no more than a subsistence-level return to the vast majority of Honduran farmers.

Private sector facilities servicing the rural sector are primarily active in the areas of sales and servicing of all types of farm machinery, farm supplies and transportation. For the most part, these services are provided by 3 or 4 farm machinery and equipment dealers, a similar number of farm supply distributors and a very large number of highly competitive truckers. While small farmer organizations have attempted to provide farm services to their members on a limited basis, their primary efforts have been in the areas of promotion and organizational development and not in the provision of services for the farming enterprise.

There are at least two small private enterprises engaged in the manufacture of farm implements and equipment at the intermediate technology level. However, one is known to lack, and has been unable to obtain, sufficient financing to produce on a commercial scale. Neither is actively engaged in expansion or promotion. In addition, there are a few cases of individuals working at the farm level on a voluntary basis who are actually employing intermediate technology. However, such occurrences are extremely isolated.

The Panamerican Agricultural School (EAP) has conducted a "state of arts" study of intermediate technology use and fabrication in Honduras. This study reports what intermediate technology is being utilized and provides a list of manufacturers and potential manufacturer of such implements. It indicates that while there is a very large number of blacksmith, tinsmith and carpentry shops throughout the country, very few have the potential to expand into the production of agricultural implements. Those that do would need financing and technical assistance. Most of these enterprises, while lacking the potential to expand into

manufacturing of complicated agricultural implements, could manufacture some of the simpler devices and structures, and could certainly be helped to expand their ability to maintain and repair farm and homestead equipment.

The Government of Honduras has recognized the need to improve the level of technology on small farms and is in the early stages of implementation of a small farmer technologies program. The program is being partially financed with AID loan and grant funds. Its primary purpose is to increase the productivity of small farmers by improving access to choices of technology suitable to their resources. Thus, improving the efficiency of farm operations requires, in the first instance, improving the choice of farm technology. Technology mediates and embodies the factor relationships of land, labor and capital in enterprises. As factor endowments differ from enterprise to enterprise, so must the optimal combination of these factors and, hence, technology. In this connection, it is important to recognize that the program does not seek to identify, develop and promote a preselected technonology. Rather, the strategy is to develop a capacity within the agricultural sector to identify and develop a wide range of farm technologies; to select appropriate technologies for each of a number of types of farming enterprises with differing ecological, social, agronomic and organizational conditions.

The program involves R & D work to be carried out by the Panamerican Agricultural School (EAP), and assistance to small business and/or rural craftsmen in the construction, marketing and repair of agricultural implements and machinery. It is planned to assist approximately 50 enterprises in this regard.

The R & D work will give priority to research and development activities in farm traction, water management, post-harvest storage, transportation and packaging. This R & D activity will investigate, through adaptive research techniques, whether available intermediate technology worldwide has application for Honduran farmsteads. The School will field-test equipment, make modifications when appropriate, and provide technical guidance to potential intermediate technology fabricators and owners. Provision has also been made for testing various types of technology in on-farm situations.

There are many issues of major import not touched upon by the project described above, e.g., public and private mechanisms used to collect and disseminate technical information, and economic policies that might improve the technological selection process by operating on the price, tax and subsidy policies affecting production. However, it is believed that the approach being taken is sound, i.e ,to carry out applied research and pilot projects prior to considering major policy changes. Decisions made with regard to technology affect the entire production base and it is prudent to gather hard information before taking any "new steps."

Expansion of the development and technology transfer phases to accelerate the process of introduction of limited capital technology to the point where massive numbers of small farmers can benefit from the research effort as quickly as possible is now being planned.

VII. PRODUCTION TARGETS, TRENDS AND PROSPECTS FOR PRODUCT GROUPS AND RELATED CONSTRAINTS

This Chapter has two major components: (1) a set of quantitative production targets for 1983 developed by the Ministry of Natural Resources, which are presented as they came to the Mission with some limited commentary, and (2) a more qualitative analysis of the prospects for product groups and related constraints. This section of the Chapter divides agricultural products into three main categories: Basic food crops, industrial crops, and livestock and livestock products. Under each of these headings, individual crops or products are described separately and each section ends with an analytical summary covering all the items in the given category. The section then provides a Summary of Constraints and Strategy Implications for all categories.

VII. A. QUANTITATIVE PRODUCTION TARGETS FOR 1983

The Department of Sectoral Analysis of the Office of Sectoral Planning of the Ministry of Natural Resources (MNR), prepared the following product-by-product projections of production expected by 1983, and related them to expected demand. Based on this comparison it proceeded to establish production targets for the same year. It is worth mentioning that this is the first time that the MNR has prepared this type of projection.

1. Methodology - An analysis was made of the four variables which were considered to be most important: (1) the historical and cyclical production trends, using in most cases a fairly recent base (around 10 to 11 years) due to the lack of reliable statistical series for longer periods; (2) the existence of and/or plans to implement "special" INA or MNR projects to stimulate the production of specific products (in such cases it was assumed that the actions contemplated in the special projects will be carried out completely and that there will be no adverse factors such as droughts, floods, etc. and that therefore the production hoped for will be attained); (3) for some products consideration was given to the existence of serious pest and disease problems; and (4) apparent consumption, based on demographic growth. For some crops, the expected external demand was also estimated. Based on this analysis, and after making adjustments in yields estimates, for which figures varied according to source, demand estimates and production projections were established in order to determine production targets on a reasonable basis.

As can be observed in the following tables, it was not possible to establish one single base year or period in view of statistical deficiencies. On the other hand, it is worth noting that, due to the

limited series available, the trends constitute a very unreliable estimator, above all for longer term projection.

2. Production Projections, Demand Estimates, and Production Goals for Selected Crops - The production projections indicate the amount of production that can be expected, extrapolating linearly the historical trends, but bearing in mind the productive cycles and taking into consideration those actions tending to increase production, whether these actions have already been taken or the political decisions to put them into practice have already been made. For the demand estimates consideration was given to the income elasticity of the product and to demographical growth; however, consideration was not given to the possible effects which pricing policy might have on the supply side. Nor was consideration given to the risk factor which is generally associated with farming.

In establishing production targets, the study used criteria such as the political and social desirability of achieving or maintaining self-sufficiency, comparative advantages, export potential and the need to diversify production, both for domestic consumption and in order to achieve a lesser degree of vulnerability in external markets.

The MNR document does not provide actual area and production data. Consequently, it is not possible to define exactly what must be accomplished in the next period of the 1979-83 National Development Plan in order to achieve the targets established. For instance, according to the General Directorate of Statistics and Census, the area planted to corn in 1977 was slightly more than 280,000 hectares, which represents a reduction with respect to the base year of approximately 37,000 hectares. Thus, in order to correct the trend and reach production targets the rate of growth in area for the 1978-83 period would have to be 6.4% or else be compensated with a greater productivity, rather than the 1.9% average annual increment over the base year, as shown in Table No. 1.

In order to facilitate the understanding of the interrelationships among the variables which are being analyzed, the products have been grouped by categories.

a. Cereals and Basic Grains - These products (corn, beans, sorghum, rice and wheat) can be grouped in two categories. The first includes corn, beans and sorghum products which have well-defined trends and, in some cases, production cycles, for which, due to the fact that they make up the nutritional base of the great majority of the population, it is considered advisable to maintain or achieve self-sufficiency. Therefore, in most cases, the production targets are set to match the estimated demand. It is recognized that economic inefficiencies will be produced in the attempt, but these are believed to be compensated

TABLE No. 1

BASIC GRINS: AREAS, YIELDS AND PRODUCTION; BASE YEAR PROJECTION TO 1983
(Base Year 73-74 and 76-77 for Wheat)

	Corn	Beans	Rice	Sorghum	Wheat
Area (000 Has.)					
- Base Year	319.9	70.4	14.8	59.0	0.2
- 1983	386.1	70.4	14.8	59.0	0.8
Yield (MT/Ha)					
- Base Year	1.04	0.49	1.35	0.68	0.76
- 1983	1.18	0.56	1.47	0.80	1.82
Production (000 MT)					
- Base Year	342.5	33.8	20.0	40.1	0.15
- 1983	458.5	38.5	22.0	47.2	1.46
Demand 1983 (000 MT)	541.0	43.5	50.0	49.3	84.6
Production Target 1983 (000 MT)	541.0	43.5	37.5	49.3	1.46
Expected Deficit 1/	82.5	5.0	15.5	2.1	0
Average Annual Increment in yield 2/ (%)	1.3	1.1	0.9	1.6	0
Average Annual Increment in Area (%)	1.9	0	0	0	14.5

1/ Deficit between production target and expected production by 1983.

2/ To achieve expected production by 1983.

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for by social and political considerations. The second category includes the other two products (rice and wheat). Rice has shown periods of strong growth, but recent years for which information exists indicate that the trend is downward and, therefore, it is expected that production will scarcely be greater than that of the base year; that this increase will be due to improvements in productivity; and that the area will remain constant. The case of wheat is quite special: by making special efforts to quadruple the area sown to wheat over the base year, it is believed possible to satisfy almost 2% of the demand from local production. This is the production target. The remaining 98% of the demand will have to continue to be supplied by imports.

As can be observed in Table No. 1, a deficit is foreseen for all basic grains between the production target and the projected production. The deficit is even greater in the case of rice when consideration is given to the difference between demand and expected production.

The deficits mentioned in the preceding paragraph imply that greater increases will have to be attained in area cultivated or in yield, which, in the case of corn, would imply increasing the area by approximately 70,000 hectares, 19,000 hectares in the case of rice, 8,000 in the case of beans and more than 3,000 in the case of sorghum.

b. Vegetables - This category includes: tomatoes, potatoes, onions, garlic and cabbage. With respect to these crops, with the exception of potatoes, the projected production will match the target set and the demand estimated for 1983. There is an implicit policy of self-sufficiency vis-a-vis the domestic market. Tomatoes show a small surplus between the target set and the demand, which, given its magnitude, it is hoped will be absorbed by the domestic market as a response to a reduction in prices. Potatoes constitute the exception in this category, since they reflect a surplus for which external markets will have to be sought, which implies that a greater efficiency in production must be attained in order to compete in the Central American market. In the case of cabbage, a small imbalance is reflected between demand and projected production. An additional 30,000 hectares will have to be planted to satisfy demand. This represents an increase of 3% with respect to the area expected to be under cultivation by 1983. For garlic there is a complete equilibrium between projected production, established target and estimated demand. (see Table No. 2).

The projected increases in area and yields seem to be fairly modest with the exception of potatoes, for which it is expected that yield increases will be of considerable magnitude. The total increase in area for vegetables is only slightly more than 1,300 hectares.

c. Starchy Crops - Three products are included in this group: plantain, bananas and yucca. Plantain production currently is affected by the Black Sigatoka and the targets established imply that this disease must be elimiated, or at least controlled, before the area under culti-

TABLE NO. 2

VEGETABLES: AREAS, YIELDS AND PRODUCTION: BASE YEAR AND PROJECTION TO 1983
(Base Year 73-74 for Tomatoes and 75-77 for the Rest)

	Toma-toes	Pota-toes	Onions	Garlic	Cabbage
Area (000 Has)					
- Base Year	1.6	0.5	0.5	0.09	0.7
- 1983	1.9	0.8	0.6	0.12	1.0
Yield (MT/Ha)					
- Base Year	10.0	10.18	4.0	3.3	9.5
- 1983	11.8	15.65	4.5	3.4	9.5
Production (000 MT)					
- Base Year	16.0	5.1	2.0	0.3	6.6
- 1983	21.2	12.5	2.7	0.4	9.5
Demand 1983 (000 MT)	21.2	10.0	2.9	0.4	9.8
Production Target (000 MT)	21.2	12.5	2.0	0.4	9.8
Average Annual Increment in Yield (%)	1.1	7.4	2.0	0.5	0
Average Annual Increment in Area (%)	1.7	8.1	3.1	0.5	6.1

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vation can return to its highest level of the past and yields, which for the 1977-78 period, registered their lowest point (5.15 M.T./Ha), can recover to acceptable levels. In the case of bananas, the projected production, the demand and the targets established all coincide, probably based to production capacity. Yucca is a product for which efforts are being made to increase the area under cultivation as well as the productivity. Taking into consideration the impact of these efforts, the projected production will meet the target and both will exceed domestic demand by more than 50%, with the result that it will be necessary to investigate possible alternative uses in the domestic market and to explore possibilities for export.

As can be seen in Table No. 3, heavy increases in area and in yield are expected both for plantain and for yucca with relatively modest yield increases in the case of bananas, especially compared with the other two crops. The projected increases in total area, for this group of crops, is about 27,000 hectares.

d. Fruits - In this group consideration has been given to 6 of the major fruits for which information is available; some other important fruit crops have been deliberately excluded due to the unavailability of the necessary information. The fruits considered are: oranges, lemons, cashew, cantaloupe, watermelon and pineapple. (See Table 4).

Oranges are a product for which a reduction of 400 hectares is seen in the area under cultivation, which will be more than compensated by better yields resulting from the greater productivity of the young plantations which will reach their maturity stage by 1983. The target which has been set is equal to the projected production which slightly exceeds demand, and it is expected that the surplus will be absorbed by the fruit processing industry.

In the case of lemons, no significant changes are foreseen in the area under cultivation, but considerable increases in productivity are foreseen due to the fact that the young plantations will attain maturity during the period under consideration.

The cashew is a crop of recent introduction for which no historical series are available. For purposes of setting the target, it has been assumed that the cashew development project will be implemented and that the area under cultivation will increase by some 7,000 hectares. For purposes of projection, only the cashew nut is of importance, since the apple or false fruit has very little commercial value, especially with such an important volume of production. No demand estimates are available for this crop, and the production will probably be destined largely for the external market.

Watermelon presents a small surplus which can be absorbed by the domestic market. A small increase is expected in the area under cultivation on the order of 100 hectares.

TABLE NO. 3

STARCHY CROPS: AREAS, YIELDS AND PRODUCTION: BASE YEAR AND PROJECTION TO 1983
(Base Year 77-78 for Plantain and 73-74 for the other two)

	Plantain	Banana	Yucca
Area (000 Has)			
- Base Year	6.0	42.7	5.5
- 1983	12.0	51.4	9.2
Yield (MT/Ha)			
- Base Year	5.15	27.4	7.4
- 1983	14.0	30.7	10.7
Production (000 MT)			
- Base Year	30.9	1,169.8	40.7
- 1983	168.0	1,578.0	98.7
Demand 1983 (000 MT)	149.0	1,578.0 1/	63.2
Production Target (000 MT)	168.0	1,578.0	98.7
Average Annual Increment in Yield (%)	22.1	2.3	7.7
Average Annual Increment in Area (%)	14.9	3.8	10.8

1/ Figure includes domestic and external demand.

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TABLE NO. 4

FRUITS: AREAS, YIELD AND PRODUCTION: BASE YEAR AND PROJECTION TO 1983
(Base Year: Oranges and Lemons, 1975
Cashew, 1977; and the rest, 75-77)

	Oranges	Lemons	Cashew 1/	Canta-loupe	Water-melon	Pine-apple
Area (000 Has)						
- Base Year	2.4	0.05	0.9	0.6	0.9	1.0
- 1983	2.0	0.05	7.9	1.5	1.0	3.1
Yield (MT/Ha)						
- Base Year	15.2	10.0	0.04	4.0	3.5	19.3
- 1983	22.5	25.86	0.2	4.5	3.8	20.4
Production (000 MT)						
- Base Year	36.4	0.5	0.04	2.4	3.2	19.3
- 1983	44.8	1.3	1.6	6.7	3.8	64.0
Demand 1983 (000 MT)	42.6	N.E. 3/	N.E.	6.7	3.4	64.2 2/
Production Target (000 MT)	44.8	1.3	1.3	6.7	3.8	64.0
Average Annual Increment in Yield (%)	5.0	12.6	12.6	2.0	1.4	0.9
Average Annual Increment in Area (%)	2.3	0	43.6	16.5	1.8	20.7

1/ Only the nut is considered

2/ Represents total demand including domestic demand and exports.

3/ N.E. = No Estimation available

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Cantaloupe and pineapple constitute very similar cases inasmuch as a large percentage of production is destined for the external market. For this reason, the target was set by taking into consideration the realistic possibilities for production. It is expected that the area under cultivation will increase for these two crops by a total of 3,000 hectares as a result of which the total area under cultivation in fruits would increase by approximately 10,000 hectares.

e. Oil Seed Crops - Included in this group are: sesame, peanuts, coconut, soybeans, castor beans and African palm. For these crops, a production target equivalent to the projected production is recommended, which with the exception of peanuts, will not manage to cover the estimated demand by 1983 (See Table 5).

For the sesame crop, demand is basically a function of the exports of sesame seed, and was estimated on the basis of historical export trends. Total demand, which was estimated in a study by the Ministry of Natural Resources, is greater than the projected production and if it is expected to be covered completely, additional efforts must be made to increase both the area under cultivation and the yield by about 11% and 5% per year, respectively, which implies planting some 1,300 additional hectares and increasing the yield by 0.357 M.T.

As regards peanuts, it is necessary to mention that this crop is of recent introduction and that special efforts are being made in order to improve the yield by approximately 10% and increase the area under cultivation from 30 hectares in the base year (1977) to 400 hectares by 1983. The target set implies that special production support efforts will continue and that project targets will be attained completely.

In the case of coconut, the historical trend would indicate an increase of approximately 100% in the area planted. However, due to plant sanitation problems, this trend has been adjusted and it is expected that the increase in area will be rather modest, on the order of only 700 hectares. The target set will match projected production, but will not be able to supply the domestic demand, for which reason it will probably be necessary to find substitute products which will make up this deficit or to continue to import coconut derivatives (oils, etc).

Soybeans, as in the case of other diversification crops, is of recent introduction, and its cultivation dates from the 1976-77 agricultural year, in which 34 hectares were planted, with a yield of 1.14 M.T./Ha. Nevertheless, considering the emphasis which has been given to it and its attractive profitability, it is expected that by 1983 the area under cultivation will total 3,000 hectares.

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The castor bean constitutes another of the agricultural diversification crops of recent introduction which, it is expected, will increase from 30 hectares under cultivation in 1977 to 2,000 hectares in 1983. However, in spite of this increase in area, the production target will not be sufficient to cover the estimated demand by 1983 (See Table No. 5).

With respect to African Palm, consideration was given only to plantations of the agrarian reform groups, without taking into account the San Alejo plantations of the Tela Railroad Company near Tela, inasmuch as no information was available with respect to this company's projections. Bearing this in mind, it can be said that projected production will reach considerable levels with an increase in area under cultivation of more than 170% and in yield of about 475%. The target set will match the projected production and no demand estimates are available, although it is believed that the entire production could easily be absorbed by the oil industry in the manufacture of food oils, which would represent an import substitution item.

It should be pointed out that cotton seed, which is a good source for the manufacture of food oils, was not included in the oil seed crops. However, a deficit is predicted in the supply of coconut, a product which could well be substituted by cotton seed and/or African palm. For this reason, it would have been desirable to deal with oil seed crops in the aggregate, by showing the overall projected production and aggregate demand, in order to determine whether it will be necessary to make additional efforts or to consider external sources to supply the domestic market.

f. Other Crops - In this group are included crops which, due to their importance, must be dealt with but which do not fall into any of the previous categories; they include: cacao, sugar cane, coffee, tobacco and cotton. Four of these crops include in their demand a high percentage of external demand and the remaining crop (cacao) would contribute a great deal toward import substitution. (See Table No. 6).

Cacao has been a subject of research by the MNR for the purpose of adopting measures to increase its production. It is expected that by 1983 the area under cultivation will have quadrupled by increasing from 500 hectares in the base year to 2,000 hectares in 1983, and that its productivity will have more than doubled, with yield per hectare increasing from 0.5 to 1.0 M.T., more than tripling its production over a period of 8 years (1975-83). The target set will match the projected production and no estimates are available for demand, although it is presumed that the production can easily be absorbed by the domestic market.

TABLE NO. 5

OIL SEED CROPS: AREAS, YIELD AND PRODUCTION: BASE YEAR AND PROJECTION TO 1983

	Sesame	Peanuts	Coconut	Soy Beans	Castor Beans	African Palm
	BY: 73-74	BY: 1978	BY: 73-74	BY: 75-77	BY: 77-78	BY: 1978
Area (000 Has)						
- Base Year	1.5	0.03	3.8	0.03	0.3	2.8
- 1983	2.8	0.4	4.5	3.0	2.0	7.6
Yield (MT/Ha)						
- Base Year	0.65	0.8	3.6	1.14	0.91	2.26
- 1983	1.0	1.4	3.8	1.38	1.6	13.0
Production (000 MT)						
- Base Year	0.98	0.024	13.7	0.034	0.27	6.3
- 1983	2.8	0.6	17.1	4.1	3.2	98.8
Demand 1983 (000 MT)	3.2	0.4	20.1	6.0	3.6	S.E.
Production Target (000 MT)	2.8	0.4	17.1	4.1	3.2	98.8
Average Annual Increment in Yield (%)	4.9	9.8	0.6	3.2	11.9	41.9
Average Annual Increment in Area (%)	11.0	33.4	1.9	115.4	46.1	22.1

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TABLE NO. 6

OTHERS: AREA, YIELD AND PRODUCTION: BASE YEAR AND PROJECTION TO 1983

	Cacao	Sugar Cane	Coffee	Tobacco	Cotton
Area (000 Has)					
- Base Year	0.5	35.0	116.5	10.3	7.7
- 1983	1.0	45.2	121.2	12.7	13.7
Yield (MT/Ha)					
- Base Year	0.3	46.2	0.45	0.84	0.66
- 1983	0.5	50.7	0.67	1.06	0.76
Production (000 MT)					
- Base Year	0.15	1,634.9	52.7	8.7	5.1
- 1983	0.5	2,293.0	80.7	13.6	10.4
Demand 1983 (000 MT)	S.E.	2,956.0	80.7	13.6	10.4
Production Target (000 MT)	0.5	2,293.0	80.7	13.6	10.4
Average Annual Increment in Yield (%)	16.2	1.9	6.9	4.0	2.4
Average Annual Increment in Area (%)	18.9	29.1	0.7	3.6	~~10.1~~

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Based on adjusted historical trends, it is expected that by 1983, the area under cultivation to sugar cane will increase by slightly more than 10,000 hectares, but even with such an increase in area, the demand will be greater than the supply. The demand includes domestic consumption and exports of sugar, for which reason it is expected that the domestic market will continue to be supplied from the national production, but that the export targets contemplated for 1983 will not be achieved

The three remaining crops have as a common denominator the fact that they are oriented largely toward that export market, in addition to which specialized support institutions exist for coffee and for cotton, public in the case of coffee and private in the case of cotton. The production targets will match the projected production and will completely cover total demand.

g. Conclusions - The conclusions resulting from the study of production targets prepared by the MNR have been mentioned in the preceding pages Nonetheless, special mention is given here to the most important of these conclusions. The figures presented in Tables 1 through 6 show that, in general, moderate increases are expected, with a few exceptions, such as the case of cashew, soybean, castor bean, African Palm and a few others, and that deficits are anticipated between projected production and production targets for a few crops, principally the basic grains.

The reliability of these projections is low and some substitute products have not been analyzed in the aggregate, for which reasons the figures do not adequately reflect reality. The possible deficit between production targets and projected production is quantified but no mention is made of corrective measures or implications for the agricultural policy of the country. Nor is any mention made of the fact that for most of the products studied, the base year employed corresponds to 1973-1974 and that up-to-date information is not available to permit a knowledge of what occurred in the intermediate period of 1973-1977. Likewise, for some crops the base year employed is 1978, for which reason it must be presumed to represent a projection, and it is considered to be too unreliable to project through 1983 based on an estimated base year, unless it is assigned a high probability of error.

As a last point, it should be pointed out that to achieve the projected production it will be necessary to incorporate more than 130,000 hectares over the base year; approximately 100,000 additional hectares are required in order to cover the deficits between the production targets and projected production. The total area increase, then, would total more than 230,000 hectares.

3. Production Projections and Estimates of the Demand for Livestock Products - The methodology for preparing projections for livestock products differs from that for agricultural products, mainly in the case of larger livestock for which the changes in trends are slower.

In order to prepare these projections, consideration was given to the four most important categories; i.e.,production of beef, production of pork, production of cow's milk, and production of chickens. The results of these estimates are presented below.

a. Production of Beef - The historic series for the production of beef, according to figures from the Livestock Project of the Central Bank of Honduras, show a well-defined trend of growth for the 1964-1973 period, with an average annual rate of about 6%. In 1974 a marked declined was registered, as a response to a decline in prices in the North American market and to the damage caused by Hurricane Fifí. In contrast, for the 1975-1976 period, the annual increase in the production of beef averaged 12.5%. This increase is reflected in a rate of extraction greater than that for the previous period through 1974. Indeed, upon analyzing the figures for rates of extraction, it is seen that during the 1973-76 period, a level of 17.7% was attained compared to a level of 13% observed in the past.

The estimates with respect to the vegetative growth of the cattle population differ with the base year selected and the rates of extraction which are applied. CONSUPLANE adopted the 1975-77 period as the base year for its estimates, and estimates that during that period an average of 284,546 animals were slaughtered and that this extraction will remain constant if specific measures are not taken; according to CONSUPLANE, if steps are taken directed mainly to sanitary control and improvement of the herd, the production could be increased by 5.9% per year during the 1978-83 period.

Also, CONSUPLANE estimates that domestic demand in the base year totalled 12,800 M.T. and considers that this domestic demand will reach 19,800 M.T. by the year 1983, an increase of more than 7.5% annually.

The Directorate of Sectoral Planning (DPS) adopting livestock population figures from the General Directorate of Statistics and Census for 1976 (1,646,432), excluding working oxen and applying a rate of extraction of 17.7%, concluded that it is not possible to maintain a rate of this magnitude without seriously affecting the normal growth of the herd. In order to adjust the rate of growth of the livestock population to the trend observed in the past, it is estimated that the rate of extraction must be stabilized between 13 and 13.5% during the 1978-83 period and that it should have been reduced to approximately 10% during 1977. In view of the above assumptions, it is estimated that the livestock herd could grow at an average annual rate of 6.3%, and by 1983

would reach a total of 2,523,729 head, excluding working oxen.

Beef production according to these estimates would have been 43,720 M.T. in 1976 (assuming a weight of 330 pounds per animal slaughtered and a rate of extraction of 17.7%) whereas in 1983 the production of beef would grow to 50,699 M.T., the product of a rate of extraction of 13.4% (337,992 animals slaughtered) and a weight of 330 pounds per animal slaughtered.

The production figures of CONSUPLANE coincide approximately with those of the DPS for the base year, but differ by almost 10,000 metric tons for 1983. CONSUPLANE's assumptions will not be valid unless a decision is made with regard to the climate of uncertainty which has been caused by the Agrarian Reform Law with respect to the maximum area allowed for cattle raising. As a consequence of this uncertainty, reductions have been observed in the credit portfolios of some of the private banks participating in the Livestock Project of the Central Bank. This factor must be considered even though it cannot for the moment be quantified. Also to be taken into account is the possible impact on the growth of the livestock herd of the increase in the quota for the export of beef to the North American market. If the trend toward attractive prices is maintained and if there is no improvement in the air of uncertainty previously mentioned, a reduction in the livestock herd can be expected as a consequence of higher rates of extraction.

In conclusion, the production of beef will be subject to factors beyond its control, and, if the situation does not improve, large increases in production can be expected for the coming years, at the cost of sacrificing the natural growth of the cattle herd and to the detriment of future production.

Another aspect which should not be forgotten when projecting livestock production and the increase in the herd is the area required to sustain this production. It is estimated that for 1976, pasture area totalled 1,481,500 hectares, distributed between cultivated (65%) and natural. This area had a grazing capacity of 1,519,000 head of cattle, and the rest of the herd, some 127,400 head, grazed in scrub and forest lands.

In order to sustain the cattle population projected for 1983 and considering that the same structure and grazing capacity will be maintained, a total of 2,461,400 hectares of pasture will be required, which implies the incorporation of some 980,000 additional hectares.

The figures prepared by the DPS are considered to be more appropriate in view of the fact that CONSUPLANE took an average of 3 years to use as a base year and this is a methodologically inadequate concept for the projection of population increases.

Also, it should be pointed out that consideration is not given to improvement in the grazing capacity nor in the weight of the animal at the time of slaughter. This implies that significant results are not really expected of the programs or projects for animal health, livestock development, etc.

b. Production of Pork - The DPS has not prepared estimates with respect to the production of pork, for which reason the figures provided by CONSUPLANE are presented here. According to this source, the average number of animals slaughtered annually in the base period (1975-77) was 283,692 and it is estimated that in 1983 this number will grow to 312,81[illegible] On the other hand, an increase is projected in the yield per animal slaughtered from 32 kgs. per head in the base year to 35 kgs. in 1983. The production of pork which is estimated under these assumptions is 9,000 M.T. in the base year and will be 10,900 in 1983. The demand which CONSUPLANE estimates in the base year is 9,700 and 14,000 in 1983.

The target set is based on the projection of historic trends and turns out to be less than the expected demand. It is hoped that the difference can be satisfied by substituting another type of meat as well as by a probable reduction in consumption per capita as a consequence of higher prices, resulting from the gap between the supply and the demand.

c. Production of Cow's Milk - No statistical information is available for this category other than that provided by the DGEC which is limited to a five year series on which no solid inferences can be made. Central Bank provides figures which suggest a trend toward an increase in milk production, which figures differ from the figures of the DGEC for the years for which information exists. Consequently, the figures estimated by CONSUPLANE have been adopted here and indicate that in the 1975-77 period there was an average of 219,294 milk cows and that in 1983 there will be some 320,223 cows. Likewise, it is estimated that the productivity of the cows will increase from 2.58 liters per head in the base year, to 3.09 liters in 1983. The production which results from these figures totals 206,500 M.T. in the base year and 361,900 M.T. in 1983.

The estimated demand is 235,000 M.T. in the base year and 381,000 M.T. in 1983. A comparison of supply and demand suggests that it will be necessary to recur to imports in order to meet the domestic consumption needs, which are estimated to be 28,500 M.T. in the base year and 20,000 M.T. in [illegible] 1983.

d. Production of Chickens

(1) Production of Meat - Three sources of statistical information exist for this product, which are the Central Bank, the DGEC and the DPS. The latter bases its figures on those of the second, but differs in its estimations of production from the traditional sector.

The analysis of the aggregate figures according to the Central Bank is different from that which would be derived by taking into consideration the figures of the DGEC. The first shows a tendency for uniform growth, beginning with a production of 3,421 M.T. in 1960 and reporting a production of 6,207 M.T. in 1976. According to these figures, the growth registered in the 1960-76 period would have been 81%, which is equivalent to 3.8% per annum.

According to the Directorate of Sectoral Planning, the production of chicken meat in 1960 was 1,916 M.T. and in 1976 was 5,978 M.T., representing an increase of 212%, equivalent to an annual growth of 7.4%. These figures reported by the DPS break down the total production of chicken meat by productive sectors: modern and traditional.

i. Modern Sector - The historical series for the modern sector show two definite trends. In the 1960-65 period, only modest increases were registered, whereas beginning in 1966 the rate of increase is considerably greater. It is expected that the average rate registered in this period will be representative of the rate which should prevail in future years, since the increase in demand will be met by this sector.

On the other hand, the reliable figures for this sector are those which are provided beginning with 1971, the year in which the Banco Nacional de Fomento began making specific surveys within the modern sector. The figures reported for the years 1971-77 suggest a rate of growth of 15.7%, which is equivalent to an annual increase of 454 M.T.; assuming that this increase will be maintained and adopting as the base year the production registered in 1977 (5,924 M.T.), the production expected for 1983 will be 8,734 M.T.

ii. Traditional Sector - This sector shows pronounced cyclical variations with a duration of between 6 and 10 years. The maximum production attained during the 1960-1977 period was approximately 1,558 M.T., with a low point in production of 1,156 M.T. The behavior of this sector suggests that beginning in 1976, declines will be registered in production until minimum levels are reached in the years 1979-80 which will later increase to the maximum historical levels in the 1982-83 period. Using this assumption, it can be expected that in 1983, the production of chicken meat in this sector will total approximately 1,600 M.T.

iii. Expected Production - By combining the estimated production for the modern and traditional sectors, the expected production of chicken meat in 1983 will be approximately 10,300 M.T. CONSUPLANE estimates a production of 10,730 M.T., adopting as the base year, the average for the 1975-77 period (6,580 M.T.) and assuming rates of growth during the 1972-77 period of 11.2 and 0.2%, respectively, for the modern and traditional sectors.

(2) Egg Production - The historical series for the production of eggs in the country differ, according to statistical sources, in the magnitude of the figures reported but not in the trends, which show similar rates of growth. The Central Bank reports higher figures than does the DGEC and these latter figures have been adopted by the Directorate of Sectoral Planning as the basis for the estimates which it reports. In the 1966-73 period, the rate of growth was 27.9% (or 3.6% per annum) compared to 75.5% (15.5% per annum) in the 1973-77 period.

i. Modern Sector - This sector has registered three fairly well-defined stages during the 1960-77 period. In the first, from 1960 to 1966, moderate rates of growth are registered; from 1966 to 1973, the rate of growth increases and shows a tendency toward definite growth. The third stage, from 1973 on, registers fluctuations from one year to another with a rate of growth smaller than in the second period. For purposes of projection it is estimated that the production of eggs will increase in future years by a rate of 10.2% per annum, an intermediate value between the rates corresponding to the second and third periods.

The production registered in 1977 was 160 million eggs, equivalent to 8,330 M.T. (assuming a weight of 52 grams per egg). With an annual rate of growth of 10.2%, the expected production for 1983 will be equivalent to 13,400 M.T.

ii. Traditional Sector - The traditional sector has shown cyclical variations, the first between 1960 and 1970 and the second between 1970 and 1976. This indicates that the production of eggs in this sector has registered a behavior in which no definite rates of growth are detected, with expectations for a maximum production which should total 73 million eggs, equivalent to 3,800 M.T.

The production of eggs starts to decline beginning in 1976 and it is expected to fluctuate around the minimum values during the years 1978-1980, to later decline in the years 1980-83 to a maximum of 3,800 M.T.

iii. Expected Production - By combining the production of the modern and traditional sectors, the production of eggs registered in the base year (1977) was 11,130 M.T. and the production estimated for 1983 is 17,230 M.T.

CONSUPLANE estimates,on the other hand,a production of 13,800 M.T. in the 1975-77 period and estimates a production of 22,400 M.T. for 1983, assuming an annual rate of growth of 8.4% in the modern sector and 0.2% in the traditional sector.

The production of eggs estimated by CONSUPLANE is based on an estimate of the probable vegetative growth in the chicken population, with a reduction in the rate of historical growth from 11.2% to 8.4%,

taking as a base, the fulfilling of the needs of domestic demand.

On the other hand, CONSUPLANE estimates that the demand for eggs for the 1975-77 period was 13,800 M.T. Assuming the estimated demand to be correct, the production figures estimated by the Directorate of Sectoral Planning suggest a deficit of 5,170 M.T., which could be met if the modern sector were to adopt a policy resulting in a rate of growth greater than that expected. The latter seems feasible in view of the rate of growth registered during the 1966-73 period.

VII.B. QUALITATIVE ANALYSIS

1. Basic Food Crops - The basic food crops in Honduras are considered to be corn, beans, sorghum and rice. Several root crops, particularly potatoes and cassava, are important to the diets in many areas. Plantains and bananas are especially so in lowland and urban areas.

Corn is the most important food of the traditional Honduran diet. In Central America, only Guatemala has a higher per capita consumption. Because of corn's importance in the diet, its income elasticity is relatively low so that income has less effect on corn consumption than it has on many other food crops. Corn is, however, substituted somewhat or contemplated by rice in the rice producing areas and by sorghum in the drier, southern part of the country and in other areas with longer dry seasons. Very little wheat is grown but wheat consumption is increasing rapidly, especially in urban areas. Wheat imports have been approximately 50,000 metric tons annually for the past two years. Milk, other dairy products, and eggs are included in the diets of a majority of the rural families but per capita consumption is far below recommended levels and is believed to be extremely low among low income urban families. Meat consumption, in general, is also low and apparently varies widely between higher and lower income families.

Available demand projections for food crops vary so widely that they must be viewed with caution. 1/ Projections for other commodities show similar variations. Despite the difficulty of making long-range demand projections, certain trends are indicated for some of the more important food crops that will significantly affect all producers of those crops and particularly the small, target-group producer.

a. Corn - Corn is grown by more farmers and utilizes more land area than any other cultivated crop in Honduras. Only pasture and forests cover a greater area. In the last decade the area planted to corn has ranged from 262,000 to 330,000 has. Since 1970 the area devoted to corn production has increased slightly; approximately 330,000

1/ For example, the projection of the 1980 demand for corn in the 1975 AID/IDB/IBRD Agricultural Sector Survey is 277,000 M.T. The 1969 Battelle Memorial Institute Study for the USDA is 559,000 M.T. (for food only). The 1975 Honduran Nutrition Assessment projection is 327,000 M.T. (based on 101.4 kg/person/year x 3,223,000 population). Actual consumption in 1975/76 was 347,000 M.T. according to the U.S. Agricultural Attaché.

has. were harvested in 1976/77.

Except for drought or disaster years, corn production has been reasonably consistent with area planted. Total annual production has increased steadily since 1970 except for reductions resulting from Hurricane Fifí in 1974 and a serious drought in 1975. Production in 1977/78 is expected to reach 377,000 M.T.2/

Corn yields are very low. Average yields for traditional production methods are estimated at from 605 to 1240 kg./ha. (9 to 20 bushels per acre). The yields for farmers using improved practices are estimated to average only about 2,400 kg./ha. (40 bushels per acre). Corn production in many areas, especially using traditional methods, is not a very remunerative enterprise. Small farmers with less than three hectares would find it difficult to push family income above the AID poverty level through corn production alone.

A substantial portion of the land which is presenty in corn, but which is really not suitable for corn production, should be changed to perennial or tree crops. This will necessarily be a slow and complex adjustment. Its success will be dependent upon improved access and infrastructure, increased availability of inputs and technical assistance and improved markets for a wide variety of commodities. Given the large amount of excellent valley lands in Honduras and the rapid movement into these highly productive areas, it is anticipated that corn production in these areas will increase. Small traditional farmers will undoubtedly continue to produce corn to the extent possible.3/ If those farmers with a better land base and with better access to supplies and markets, many of whom are target group farmers including reform farmers, significantly increase their corn production at lower per unit costs, this could adversely affect the market for the small target farmer on marginal lands.

2/ U.S. Agricultural Attaché estimate.

3/ For purposes of this discussion, two distinctly different categories of small farmers will be referred to from time to time, the traditional farmer and the commercial farmer. The traditional group, especially the large segment classed as subsistence farmers, often have poor access to supplies and markets and marketed commodities usually consist of semi-perishables or livestock. Commercial farmers normally have better access to supplies and markets and produce primarily for the market instead of for their own consumption. The commercial farmer group as used here specifically includes those farmers and groups of farmers (asentamientos) under the Agrarian Reform Program even though many of these may not yet be really viable commercial farmers.

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b. Sorghum - Honduras has been producing between 35-40,000 M.T. of sorghum per year since 1971-72. Production in the 1960's averaged approximately 10,000 M.T. higher per year than it has in the 1970's. Yields also dropped. As there is no other apparent cause and this reduction in yields and production coincides with the concerted agrarian reform effort and the departure of large numbers of Salvadoran farmers, these factors may have been significant.

Sorghum is used for both human food and animal feed in Honduras. It substitutes for corn in the drier areas. More than half of the production is in the southern region and the rest is in other areas of long dry seasons. Virtually none is produced in the northern and eastern regions.

Unlike most other countries, sorghum is basically a small farmer crop in Honduras. Yields are relatively low and net returns very similar to those for corn. It is estimated that about one-fourth of the area planted uses improved technology. Total production has exceeded domestic demand at times. Approximately 8,000 M.T. were exported to other C.A.C.M. countries in 1976. It is anticipated that, as yields increase and prices become more favorable, sorghum use for poultry, swine and dairy feed will increase accordingly. Because of its high substitutability for corn (approximately 90-95% in animal rations) the demand projections, program considerations and policy implications will be tied closely with corn.

c. Beans and Other Edible Legumes - Beans are second only to corn in the diets of the rural people, especially the low income people of Honduras. Both red and black beans are produced, but there is a high preference for the red. The country has long been a net exporter of beans but these exports have declined rapidly since 1970 as a result of reduced yields and production. Exports averaged more than 16,000 M.T. annually through the decade of the 1960's, but have averaged only 6,300 M.T. annually since 1970. 1976 exports were only 1,300 M.T. The high incidence of virus disease is a major cause of the reduced yields and production since 1970, as the decline in production appears to have little direct relationship to acreage. Since 1973/74 production has held relatively steady at 31-35,000 M.T./year. The continued decline in exports indicates that domestic consumption is increasing slightly.

Approximately 65-70,000 hectares are being devoted to bean production each year. Yields are low, averaging less than 500 kgs. per hectare. In Honduras beans are mainly produced by small farmers, often in rotation with or interplanted with corn or sorghum. Production is spread throughout the country but is slightly higher in the central region and somewhat lower in the dry southern region. In many areas, beans are grown as the second crop in the rotation as this part of the growing season is less humid and results in fewer disease problems and lower production costs. The profitability of bean production varies widely by area and by level of technology used.

Beans are well suited to mechanization and to medium and larger farm production. They are an excellent short season crop that fits well into rotations with other crops. As more and more valley lands are brought into production, and as the level of technology increases on these higher quality lands, it is anticipated that bean production in these areas will increase significantly. There are some indications that this trend has already begun. As with corn and sorghum, if the commercial farm subsector is able to produce beans at an appreciably lower unit cost than is the marginal farmer using traditional methods, it can adversely affect his market.

The 1975 Nutrition Assessment for Honduras indicates that the annual per capita consumption of beans should be increased approximately sixty-five percent in order to meet the minimum desired protein and caloric intake levels. It is expected that bean production can and probably will continue to exceed effective demand.

One of the principal reasons for low bean yields in Honduras (and in many other tropical countries) is the high incidence of virus diseases. These viruses can be controlled through the use of virus-free seeds because they are seed-borne diseases. The elimination of bean virus would be expected to increase yields by approximately forty percent per unit area if good virus-free varieties were used. Priority should be given to overcoming this problem.

d. Rice - Rice is relatively less important as a food in Honduras than in most other Latin American countries. Consumption has been increasing since about 1970, however, and its importance in the diet rice-producing areas and in cities is growing. No rice is exported and imports have been insignificant except for two years when crops were seriously damaged by hurricanes.

Rice is generally produced by the commercial farm subsector. Although yields are quite low in relation to what might reasonably be expected, they are somewhat higher than corn. Yields have averaged about 1.3 M.T. per hectare for the past four or five years. More than half of the rice is grown in the northwest and Atlantic coast regions. The accessibility and size of farms of rice producers in these areas should make it relatively easy to increase average yields to two tons or more per hectare.

Projections of rice production and demand for C.A.C.M. countries through 1980 indicate production levels only near self-sufficiency. Rice production should be increased sufficiently to meet internal demand, to provide a reasonable carryover and to assure fulfilling C.A.C.M. demand within the common market group. Honduras has a sufficient quantity of land suitable for rice production to increase its output to many times present levels. Much of this land is in the developing valleys and the north coast region. Some is poorly drained or too wet for other crops during a portion of the year but is well suited to rice production.

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e. Root Crops - Cassava and potatoes are important food crops especially in rural areas. Sweet potatoes are of lesser importance. Hondurans eat approximately thirteen kilograms of cassava per capita annually but less than two kilograms of potatoes. The latter is particularly important in the department of Intibucá which produces more than eighty percent of the potatoes grown in the country. Cassava production is more scattered but with most of the production coming from lowland valley areas. Yields of potatoes vary widely with relatively high yields in Intibucá. Cassava yields are very low in all areas. On most soils, root crops can produce more food per unit area than can grain crops. Handling and storage problems are more difficult, however.

Honduras neither imports nor exports root crops and there appears to be limited opportunity for exports to other C.A.C.M. countries. In recent years, however, a sizable market for frozen cassava, malanga, yautía and other tropical root crops has developed in the eastern United States, especially in New York and Miami. A portion of this market is as yet unfulfilled and may offer the possibility of expanding cassava production in the northern part of the country. In addition, a study of cassava production and marketing feasibility, financed by AID Loan 522-T-025, indicates good market expansion potential producing yucca chips for animal feed, particularly swine and dairy cattle.

f. Fruits and Vegetables - The wide range of climate areas and elevations in Honduras permits the production of almost all of the different fruits and vegetables. Only those fruits requiring a cold dormant period, (such as apples, cherries, pears, etc.) are not produced here. Because of the wide range of soil and climatic areas, there is also a wide range of food habits, especially on the part of the rural people. In general, the basic foods--corn, beans, sorghum and rice--vary relatively little by area. The fruits and vegetables used to supplement the basic diet, however, appear to vary greatly due to differences in soils, climate, accessibility, custom, etc.

There is no recent data available concerning consumption of the minor crops. Observations of the marketing system and the price structure of the various fruits and vegetables reveal several factors that are extremely important in their influence on the consumption of these commodities. With the exception of bananas and plantains, consumption of fruits and vegetables is very low. The per capita consumption of bananas is in excess of 100 kilograms per year. Estimates for other important crops are oranges - 6 kgs./yr., cabbage and avocados - 2 kgs./yr., and tomatoes and onions - 1 kg./yr. (No estimate is made of the consumption of mangos perhaps because they are so readily available in so many areas that it is difficult to estimate.) Most of these estimates are apparently based on reported production and marketing data and may significantly underestimate products grown for home consumption. One crop group, squash (including chayote) appears to be much more important than reported, both in the market and in home gardens. The income elasticity of fruits

and vegetables seems to be relatively high. The extremely high level of banana consumption at the very low existing price tends to confirm this assumption of high income elasticity.

The marketing of fresh fruits and vegetables is difficult and requires a high degree of technical capability. Marketing losses in Honduras are extremely high. For many fruits and vegetables, new varieties have been developed that have better flavor, more uniformity, and are more resistant to marketing damage. These should be adapted and introduced to fruit and vegetable producers.

g. Others - For a discussion of sugar and vegetable oils see Sections 2 c. and 2a. below.

h. Analytical Summary - There is no doubt that the agricultural sector can continue to fulfill Honduras' food requirements, even at higher nutritional levels, for the medium and long term. The question is whether in view of extremely low income levels for half of the population, a means can be found to assure that every Honduran receives at least the minimum nutritional requirement on a regular and continuing basis.

As previously mentioned, there are two distinctly different categories of small and medium farmers, the traditional farmer and the commercial farmer. Small traditional farmers most often have a serious land productivity constraint. Corn, beans (and perhaps sorghum) are their principal crops and these are, more often than not, produced on land not really suited to cultivated crops. Long, dry seasons and occasional hurricanes seriously limit production alternatives for the crops and commodities with which they are familiar. Lack of technical know-how and inaccessibility to inputs and markets are effective constraints to better land use and increased income. In effect, the set of constraints for the small traditional farmer have locked him into a subsistence situation from which he cannot escape without considerable help.

Small and medium farmers in the commercial farm subsector have some of the same constraints as traditional farmers. Dry seasons and weather are still important but their effect can sometimes be reduced by irrigation. Accessibility is often inadequate but is usually better. The land base is usually adequate (if properly utilized) to produce a satisfactory income. Probably the most serious farm level constraints for the small commercial farmer are the low level of technology that he is presently using, the limited availability of capital and the unavailability of dependable markets.

Support system constraints limit the availability of agricultural inputs, including credit, for both the traditional and the small commercial farmer. Lack of access is probably the most serious because it can also be a major constraint to the delivery of inputs and technology

and availability to markets. In many areas, however, small farmers who do have access are not receiving inputs and technical assistance. This would indicate an institutional constraint or inadequate delivery systems. Small commercial farmers, especially many of those who have received land under the Agrarian Reform program, are seriously handicapped by inadequate technology in both the production and marketing areas. Again, at least a portion of this is an institutional constraint that has resulted from inadequate research, unavailability of improved seeds, lack of soil testing facilities, etc.

Present government policies are encouraging the rapid development of the small commercial farm subsector. New, more productive lands are being opened up to individuals and to groups of farmers (asentamientos) with government support and assistance. Some of these farmers being settled on new lands are being encouraged and assisted to produce "new" crops such as bananas, African oil palm, grapefruit and pineapple. Many, however, are continuing to grow the traditional food crops. Thus, as present policies continue to be implemented, the small traditional farmer may find more competition in the market for his traditional commodities.

Program and policy implications for the small commercial farm subsector seem to be clear. This group is more readily accessible to input supplies, markets, technical assistance and other production requisites. Its land base is also more adequate to meet increased food production needs. Because many of the smaller farmers in this category are already organized into groups, they may be easier to reach with new technology and other assistance. Even so, it is doubtful that the public sector alone can or should fulfill all of the small commercial farmers' increasing demand for inputs and services. Such things as roads, drainage, irrigation, research, basic germ plasm for improved varieties and many regulatory (weights and measures, quality control, import-export controls, etc.) actions will have to be carried out by the public sector. Public policies and public sector entities, however, should strongly encourage increased private sector participation in agricultural development, especially in vertically integrated production/marketing efforts. The private sector can assist greatly in the growth of the agricultural and agro-industrial sectors with technical capability, financing, inputs, marketing and processing. In order to receive the maximum contribution from private sources, however, the government must assure that investment incentives, political stability and public confidence remain sufficiently high to stimulate the desired level of private sector participation.

There are at least three basic approaches to improving the lot of the small traditional farmer in the medium and long term. One, which is presently being used, is to relocate at least a portion of those farmers in the most crowded areas. This can immediately increase their land base. A second strategy to increase food production while improving the lot of the target farmer is to change the cropping patterns of the target farmer over the long term. This approach on a national scale would be complex and difficult and would likely require more financial resources than are

available. In some areas, however, it is a practical possibility that could be expected to yield high dividends. Examples of crops for which additional markets exist and which should be a part of such a program effort include:

- For lowland tropic areas up to 600 meters of elevation - Avocado, coconut, achiote, limes, grapefruit, a variety of spices, cacao, rubber, passion fruits, chayote, papaya and honey.

- For areas above 600 meters and with reasonable rainfall - Mango, achiote, coffee, oranges, passion fruits, chayote, papaya and honey. Pines for wood and pulp should be considered in some areas also.

- For areas with very long dry seasons - Cashews, sisal, mango, figs, grapes, and honey.

- Fish culture.

A third alternative for improving the lot of the small traditional farmer, is to increase his capability to produce his food needs.

A surprisingly low number of farm families have planted adequate fruit and vegetable gardens around their homes. Any effort to improve the nutritional level of the small and medium farm family should include a concerted effort to improve the balance of home produced foods. Such a program, implemented through the municipalities, cooperatives or any political, religious or other group or entity would encourage the increased planting, where adapted, of such things as coconuts, avocado, mango, oil palm, citrus (especially limes), chayote, passion fruit, breadfruit, figs, papaya and improved varieties of vegetable and root crops.

2. Industrial Crops - Honduras is very richly endowed with productive capacity for a wide range of industrial crops that will continue to enjoy sustained world market demand. There are favorable rainfall patterns for humid tropical crops as well as wet-dry season patterns plus a wide range of micro-climates, due to elevation, in rich mountain valleys. All of these climatic ranges have extensive areas of undeveloped or underdeveloped, quality agricultural lands.

Demand for Honduran industrial crop production is primarily foreign, with agricultural, forestry and fishery products accounting for over 85 percent of export value in 1976. In addition to export earnings, industrial crops are providing an increasing share of the food and fiber required for a growing domestic economy.

a. Bananas and Plantains (Plátanos) - Bananas are highly exacting in their soils and climatic requirements for successful commercial

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production. The northern part of Honduras has large areas that are ideal for banana production and is surpassed only by Ecuador and Costa Rica in volume of exports in the western hemisphere. Exports were over 771,000 tons in 1966 and 898,000 tons in 1973. Rapid recovery from the hurricane of 1974 and the drought of 1975 is reflected by increasing volumes of exports that are likely to continue at a modest rate in accordance with world demand. Over the past several years, banana exports have accounted for over 40% of the value of commodity exports. The banana industry has a very favorable impact on the target group. It is estimated that each hectare of bananas generates more than 450 man-days of employment per year.

Over 30 thousand hectares of bananas are grown with production sometimes exceeding 40 M.T. per hectare. Total production has exceeded one million tons per year for the past several years. Much of the production not exported furnished a cheap, nutritious food for all levels of the population. Reject bananas are also important to the swine industry. Plans are under way to dry reject bananas and cassava chips for use in the animal feed industry or for export.

Plátano production has been increasing steadily over the past several years. Over eleven thousand hectares were harvested in 1973-74, with a gross production of about 192,000 tons. In 1976 plátano exports to C.A.C.M. countries were 5,854 M.T., while exports to the U.S. and other countries were only 5.7 tons. Requirements of plátano for the C. A. C.M. countries is expected to increase substantially over the next several years. Plátano requirements for the large Latin populations in the U.S. are not being met on a sustained basis. Thus, there is a good opportunity for the Corporación Hondureña del Banano (COHBANA) to assist small farmers in the production and export of plátano

b. Coffee - The second most important source of foreign exchange earnings for Honduras is coffee. Over the period 1965-69, the average value of annual exports was $19 million. From 1970 to 1973, these earnings grew rapidly from $25.9 million to $48.3 million, as a result of a 20% increase in the unit value of exports and a 54% increase in volume to 40 thousand tons. In 1976 coffee exports totalled 45,809 M.T. with a value of over $100 million.

Coffee in Honduras has traditionally been a small and medium farmer's crop produced with a minimum of inputs. Recent favorable world coffee prices have stimulated both government and producers to embark on a comprehensive coffee rehabilitation and improvement program. GOH policy is to improve the production and quality of coffee but not to increase the area planted. The policy is being implemented successfully through the Coffee Institute, IHCAFE, and the Federation of Coffee Cooperatives, FEHCOCAL.

The coffee Institute has one of the most effective technical assistance programs in Honduras. Plans are to rehabilitate, by 1980, 42,000

hectares of the estimated 105,000 hectares planted by 50,000 growers. Most growers are in the two-hectare category. Returns from this amount of rehabilitated coffee places them somewhat above the poverty level. Their income and quality of life can be improved even more by diversification.

c. Sugar - Sugar cane is grown in all the regions of Honduras for the production of panela which accounts for 20-30% of total production. Commercial sugar production, however, is largely limited to the Sula Valley and Choluteca areas. Cane plantings have been increasing rapidly in the past few years, especially in the Choluteca area. With the completion of a third mill, now under construction, the southern area will be the principal sugar supplier of the country. The Sula area has two small mills and one large one. Export production for 1976 was only 22,500 M.T. valued at $26.25 million. Prospects for sustained production with nominal increases to take advantage of world market opportunities are good. As much as 60% of the cane in the Sula area is produced by contract growers. The Choluteca area is also utilizing local small farmers' labor for a substantial portion of their production. This includes collective farms in the reform sector. Sugar cane utilizes 90.6 man-days per hectare per year. Since this work is concentrated in a 120-day period, it is a good source of off-farm employment for target group farmers.

d. Oil Crops - Honduras has had steadily increasing imports of animal fats and vegetable oils over the past several years. Imports in 1972 amounted to 3,634 Metric Tons valued at $1.8 million. These imports rose to 13,111 M.T. valued at $6.3 million in 1976. GOH policy should continue to be directed towards developing programs to curb the unnecessary drain of scarce foreign exchange.

If present projections are carried out fully, by the end of 1979 Honduras will have over 14,500 hectares planted in oil palm. Since 1969, all new plantings and replacements have been high-yielding hybrids which have a production potential of up to 4 M.T. of oil per hectare per year. Oil production is expected to reach over 10,000 M.T. in 1977 and is likely to increase rapidly over the next several years as new plantings come into production. Domestic oil consumption is increasing steadily, therefore, continued emphasis should be placed upon oil production from other sources in order to eventually free considerable quantities of palm oil for export.

Sesame could become increasingly important as a source of vegetable oil, or as an export for use in the U.S. confectionary industry. Most of the production is in the provinces of Choluteca (90%) and Valle (10%). Production is carried out principally by small farmers growing from one to three hectares with a yield of up to 800 kilograms per hectare. Total production reached 724 M.T. in 1976. The sesame plant is well suited as a second crop following early corn or rice, and as a rotation crop in connection with cotton or grain sorghum. In Choluteca there is

likely to be increasing competition from sugar cane. The crop could be produced profitably in other valleys, such as Comayagua, that have a definite dry season.

In order to more fully utilize oil processing facilities, sesame, soybeans, cotton seed, peanuts and sunflower could all be crushed and processed with generally the same equipment. Increased production and processing of these commodities offer considerable production alternatives to small and medium farmers as well as to group farms in the reformed sector. By-products from these crops would be of great economic importance to the livestock and poultry industries.

e. Coconuts - Coconut plantings in Honduras increased from 2,008 hectares in 1965-1966 to 4,122 hectares in 1975-1976. A high percentage of newer plantings are of the Malayan Dwarf variety. This is the only variety that should be planted in Honduras because of the danger of losing larger varieties to the lethal yellowing disease. Malayan Dwarf trees usually bear two to three years earlier than other varieties. The nut is smaller but copra production per hectare is higher. The dwarf palm is also less susceptible to blow-downs from storms and is easier to manage and harvest.

Over 90% of the coconuts in Honduras are produced in the provinces of Atlántida, Colón, Cortés and the Bay Islands. However, coconuts thrive in lowland regions below the elevation of 300 Meters as far as 26°North latitude. A mean temperature of at least 25°C. is essential. The more evenly the rainfall is distributed over the entire year, the better. A minimum of 1500 mm. is ordinarily required, but a smaller amount may suffice if the soil water table is favorably situated for uptake of water by the roots during periods of drought. Honduras has vast areas, including the untouched northeast region, that have ideal conditions for coconut production. Domestic and world demand for coconuts and coconut products has no practical limit. Honduras should greatly increase its coconut acreage as rapidly as possible.

A large number of small farmers is presently moving into undeveloped regions of Honduras that are well suited to coconut production. Two hectares of basic food crops interplanted with coconuts can provide a small farm family with subsistence for two or three years while additional land is being cleared. By the fourth year coconut production should meet the family's needs and by the sixth year should be sufficient to place the family above the poverty level. Their income would then be based principally on an easily managed low risk, semi-perishable product for which there is always a good market.

f. Fiber Crops - Fiber crops are a diverse group of plants, all of which contain or produce fibers of sufficient length, strength, and durability to be utilized in the manufacture of cloth, cordage, bagging and numerous other articles. Cotton is the most important fiber crop in the world. Other important fiber crops that can be produced in Honduras

include kapok, ramie, kenaf, abaca, jute, sisal and hemp. These crops are currently of only minor importance to the Honduran economy. They are highly labor intensive and until recently were relatively unattractive as cash crops in this hemisphere due to competition from synthetics. The high price of petroleum products has raised synthetic fiber prices to the point that production of some natural fibers now offer excellent opportunities for large members of small farmer families to substantially raise their levels of annual income. Sisal is grown in Honduras to a limited extent, but could become economically important in the south coast and the more arid inland areas of the country. Ramie, kenaf, abaca and jute could become important cash crops in high rainfall areas having sufficient water for the retting process. Priority should be given to increasing the production of long fibers in areas of adaptation, especially sisal.

Cotton production in Honduras has fluctuated widely over the past several years due to changing world prices and internal problems concerning land use. By 1970-71 production had fallen to about 2,000 M.T. Since 1971, production has been increasing due to favorable world prices and stabilizing internal conditions. The agricultural attaché estimates the 1976-77 production at 7,032 M.T., a record crop for recent years. He estimates a further increase to 11,312 M.T. for the 1977-78 crop which is almost equal to the 1965-66 crop. The crop is principally grown in the five provinces of Valle, Choluteca, Olancho, El Paraíso and Francisco Morazán. It is hand-picked and requires 100.5 man days of labor per hectare per crop. All of the crop is exported and cheaper grades and synthetics are imported for use in the textile industry. Imports for 1976-77 amounted to 1,087 M.T. as compared with a production of 7,032 M.T.

g. Citrus - Typically a subtropical crop, the best oranges and tangarines in the tropics are grown, as a rule, in areas possessing a dry season-wet climate and at elevations of about 900 to 1,200 meters above sea level. Grapefruit, pomelos and limes thrive better in tropical lowlands, Honduras has made important strides in beginning a citrus industry that can provide good income and 62.7 man-days per hectare per year of employment for the target group. Prospects for expanding market outlets in C.A.C.M. countries, Europe and the U.S. are good.

The citrus industry is concentrated in six departments which had a combined total of 6,324 hectares in 1976. Citrus growers are usually small to medium farmers. 69.2% of the groves are from 1-5 hectares. Smallness of groves is considered to be a limiting factor to efficient management because of lack of resources to secure adequate equipment for effective insect and disease control. This problem results in poor quality fruit and reduced production.

There are three citrus processing plants in Honduras. One makes some fruit juice and concentrates but works mainly with tomatoes. One

processes grapefruit into juice and concentrates six months per year and could process other fruits. The third packs fresh grapefruits for the European market. All three have trouble obtaining sufficient fruit of good quality to fulfill their market demand.

The varieties of grapefruit being planted for export are excellent and planting should be expanded. Many of the oranges are of poor variety or are in unsuitable locations. New plantings should be made at higher elevations using good varieties. Although the Persian lime has not been planted here extensively, it has excellent prospects. There are ready markets in the U. S. and Europe.

h. Other Fruits and Nuts - The list of fruit crops which can be grown in Honduras is almost endless. Figs, pineapples, avocados and mangos are well-known worldwide. There are many other less well known fruits that are held in great esteem in various parts of the world. Many of these are now grown in limited areas because their merit has not been widely established. Fortunately, Honduras has the finest collection of tropical fruits and trees in the western hemisphere located near Tela at the Lancetilla Botanical Gardens which is now under the direction of the Ministry of Natural Resources. Technical, financial and promotional resources directed toward properly exploiting the germplasm found in this botanical garden could be of vast economic importance to Honduras.

Among the various tree nuts in world trade, the cashew is second only to the almond in terms of value and volume of production. The Central American Bank for Economic Integration (CABEI) is funding a project to promote the production and processing of cashew nuts. Honduras will plant 5,000 hectares in the south and central zones and build a processing plant in Choluteca under this project.

Mango's real economic importance lies in the tremendous local consumption in most every area in the lowland tropics. Due to the difficulty of marketing it has not yet developed into an important export crop. In recent years, progress has been made in marketing firm, ripe mangos as frozen slices or cubes and mango puree, either fresh or frozen, has found favor as ice cream flavoring.

The Sula valley and the lower Aguán valley are said to have been important cacao producing areas in pre-Colombian times. More recently, cacao plantations have developed over the more accessible areas of the north coast. Low prices in the 1930's and 1940's caused many of these plantations to be abandoned. Sustained producer interest in cacao production has been hard to maintain because of the continuous up and down spiral of world market prices. Current prices are very high and predictions by FAO indicate that world supply will be somewhat short of world demand over the medium term. They further predict that prices probably will never again fall so low that the crop will be unprofitable for the producer. The MNR program of cacao rehabilitation and the projected planting of an additional 2,000 hectares is currently being

evaluated to determine the degree of feasibility. North coast growing conditions are excellent, access is good and the principal ports are nearby. Cacao can become an important crop for a large number of small farmers in this area.

i. Other - Honduras is placing increasing emphasis on the production of fruit and vegetables for export to the U.S., Europe and the other C.A.C.M. countries. Fresh fruit and vegetable exports exceeded $3.30 million in 1976. Prospects for continued expansion are especially good in citrus and pineapple while cantaloupe, watermelon, tomato, and pepper exports are still in the testing stage. Processed fruits and vegetables are also gaining importance as an export earner. Over $4.4 million of these products were shipped out in 1976.

The tobacco industry has been an important generator of employment (385 man days per hectare per year) in the five departments in which the majority of the crop is grown. The country is largely self-sufficient in the production of tobacco, importing only limited amounts of special and aromatic leaf for blending purposes. Production and export of cigars, cigar wrapper and filler has been an important enterprise since the U.S. stopped buying from Cuba. The export of tobacco in 1976 amounted to 3,436 M.T. and was valued at $7,912,500; the major portion was cigars, cigar wrapper and cigar filler. Imports were valued at $664,500.

The local cigarette company, located in San Pedro Sula, is a good model of a well integrated agroindustry. The company makes individual contracts with small and medium producers clearly specifying what the company will provide in the way of technical assistance, inputs and help in obtaining credit. The contract also spells out in considerable detail what is expected of the farmer and the price that will be paid for leaf based on described grades or classes. Other agroindustries may be well advised to study the tobacco company's system carefully as it will work with almost any commodity or commodity group.

j. Analytical Summary - The wide range of important and potentially important industrial crops discussed above can help Honduras to broaden the base of its agricultural economy as the country's infrastructure base is improved. International markets and prices for many industrial and export crops, such as coffee, sugar, cacao and cotton, have periods of dramatic price fluctuations. For this reason, GOH policy makers should give priority attention to a strategy of rapidly diversifying production for export. Initial experience has already been gained in several crops that have good medium and long range export demand. They include African oil palm, sesame, soybeans, coconuts, cacao, fruit and vegetables.

Coffee culture in Honduras has greatly improved over the past few years under the guidance of the Coffee Institute and the coffe cooper-

atives and this work is continuing. Methodology that has been developed by the Coffee Institute for dealing with the complex problem of thousands of small producers, could serve as guidelines for developing other industrial crop enterprises such as cashews, sisal, cacao, coconut and others.

Marketing bananas is probably one of the most highly specialized and delicate marketing systems in existence. The fruit companies, in cooperation with the Corporación Hondureña del Banano, are successfully marketing bananas and expanding into the marketing of grapefruit and pineapple. In the production of these commodities, there is increasing participation by contract farmers including groups from the reform sector. Over time it is anticipated that the majority of the fruit will be produced by nationals. The outside assistance, which brings high levels of technology and marketing experience into the country through an integrated production-marketing relationship, can be invaluable in accelerating the growth of new enterprises. The GOH should attempt to attract reputable international companies that are specific product oriented to help stimulate the production and export of other commodities which have good development potential.

3. Livestock and Livestock Products - The livestock industry constitutes an important part of the agricultural sector and the Honduran economy. In 1974 livestock contributed approximately 18 percent of the total value of agricultural production and its contribution has been increasing. Livestock, particularly cattle and swine, play an important role in helping to stabilize small farmer incomes and as a form of capital accumulation and savings. Livestock enterprises provide valuable cash income and protein dietary components for rural families.

It is estimated that approximately 1.8 million hectares, sixteen percent of the total land area of Honduras, is better suited to permanent pasture than any other use. Some pasturing of forest lands in more settled areas adds to the base for livestock production.

a. Beef and Dairy - The cattle population of Honduras in 1975 was estimated to total nearly 1.9 million head. This represents an average annual increase in cattle numbers of less than 3.5 percent for the 1965-75 decade. Cattle production is generally distributed throughout the country, but with fewer cattle in the southwest departments bordering El Salvador and in the northeast and eastern departments of Colón and Gracias a Dios.

It is difficult to differentiate between dairy and beef cattle. A high proportion of all cows is milked during the production cycle. Most of the identifiable dairy herds marketing through processing plants are in the northern coastal area. It is believed, however, that many of

the so-called beef cattle provide a considerable amount of milk for the rural family because milk, milk curds, cream and cheese appear quite regularly in many rural diets.

In general, milk production has not been sufficient to meet domestic demand. As a result, the importation of powdered milk has become an important item amounting to 4855 M.T. valued at U.S. $7.2 million in 1976. The domestic production situation is improving, albeit slowly. From 1970-76 the annual increase in milk production averaged 4.1 percent and powdered milk imports declined at about 5.5 percent per year. These figures show some progress in increasing milk production to meet effective demand. Demand, however, is much too low. From 1960 to 1970, milk consumption increased at an annual rate of only 2.5 percent, while population was increasing much more rapidly. Although a high proportion of the population apparently has some milk and milk products available daily, per capita consumption is estimated to be about 210 grams. 4/ Nutritionists recommend a minimum of 500 grams per day. In order to make significant progress toward becoming self-sufficient in dairy products, dairy plant capacity will not have to be increased along with milk production. The four present milk processing plants are now operating at only about forty-five percent of their potential.

Beef has long been an important agricultural export for Honduras. Except for disaster years of war, hurricanes or serious drought, beef production and exports have continued to increase. Exports in 1976 amounted to 21,000 M.T. valued at U.S. $25.8 million. Virtually all exports are to the United States and Puerto Rico. Most meat is sold as fresh, chilled or frozen beef. Seven slaughter facilities or "export plants" process all of the export beef.

Domestic consumption of beef was estimated to be only 5.6 kgms. per capita in 1976. Only slightly more than forty percent of the total production is being consumed domestically with nearly sixty percent going for export.

According to the 1974 Agricultural Census, beef cattle production is mainly in the hands of small and medium farmers. It shows that more than 80 percent of the cattle population is concentrated on farms of less than 50 hectares. Also, of the 82 thousand farms with cattle, more than 70 thousand of these contained less than 50 hectares.

All beef for export must be slaughtered in the seven export plants previously mentioned. Most of the beef for domestic consumption is slaughtered in one of the municipal slaughterhouses, of which there are an estimated 170. Many of these municipal plants operate under un-

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4/ All dairy products expressed as fluid milk.

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satisfactory hygienic conditions. Despite the wide distribution of slaughter facilities, surveys indicate that meat is only sold an average of three days per week in many municipal markets.

Honduras is a country very well suited to increasing its beef and dairy production. It is estimated that cattle numbers could be doubled in twenty years or less without adversely affecting the production of any other crop. In most instances there would be no significant difference whether the expansion was in beef or dairy cattle. 5/ It is quite probable that increased emphasis on dairy production, to fulfill the U.S. $7.2 million milk import deficit, would not adversely affect beef production or exports. It should be noted, however, that on a commercial scale (even for small producers) dairying requires a higher level of technical competence and management than does beef production. Also, some areas in Honduras are much less suitable for dairying because a long dry season will add significantly to the problems and cost of milk production by increasing the need for the supplemental feeding of hay and concentrates.

No study has been made to determine why the production of milk has lagged so far behind that of beef. Two apparent reasons that have surely contributed adversely to the development of a viable dairy industry are (1) government price controls on milk and (2) the high price of feed grain concentrates and protein supplements for dairy feeding.

Many small dairymen throughout the country, apparently too far from the market to sell fluid milk, market their production in the form of soft cheese or white cheese. This cheese is very valuable to consumers from a nutritional standpoint as well as a profitable enterprise for the producer. The possibility of market expansion for this type of cheese, however, is small. A concerted effort to train these small cheese producers in the use of better yet simple methods and to improve their (cheese) cultures to produce a kind of cheese more widely accepted in the market (including export) could result in a real expansion opportunity.

b. Swine - Swine numbers in early 1975 following Hurricane Fifí were estimated at about 846,000 head. 6/ Swine production is dispersed throughout the entire country but with considerably higher concentrations in the departments along the north and south coasts. It is presumed that this concentration is primarily due to the availability of feed as there is some use of reject bananas and other fruit waste to feed swine.

5/ Frontier areas and other areas where access is a problem are more suitable for beef than for dairy because of marketing advantage.

6/ An estimated 17,000 were lost or killed in the hurricane.

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All of the pork produced in the country is consumed here. In 1976 total consumption amounted to an estimated 6,530 M.T. or 2.5 kgms. per capita. Neither production nor consumption levels have changed significantly during the past seven years.

Swine, like beef and dairy, is an excellent small farmer crop. It serves a very useful purpose from the standpoint of a low input commodity which appreciates steadily in value and serves as money in the bank or security against unexpected emergencies. Swine production should and could be increased significantly. Given the present and anticipated value of grain crops, however, it is unlikely that grain-fed swine will be an economically feasible possibility in the foreseeable future. Much can and should be done, however, to increase swine production utilizing fruit and vegetable rejects and processing wastes in areas where such production and processing operations exist. On small farms in many areas, pork production could be increased through the feeding of a wide range of root crops (malanga, yuca, yautia, camote, etc.) and surplus or spoiled fruits and vegetables and palm nuts.

c. Poultry - Poultry production is divided into two distinct categories, the commercial producer and the traditional producer. The commercial producers in 1975 were estimated to have on hand approximately 810,000 laying hens (including replacement pullets) and more than 4.7 million broilers. Broiler meat production in 1976 amounted to nearly 5,200 M.T. Egg production was 187 million (15.6 million dozen). The commercial element of the poultry industry has been growing very rapidly since 1970. Both egg and broiler meat production have increased by nearly 270 percent during this five year period.

It is considerably more difficult to make an evaluation or assessment of the traditional portion of the poultry industry. A few chickens are scattered throughout the country on thousands of small farms. Official estimates based on data from the 1952 and 1965-66 censuses show a steady decline in the numbers of both birds and eggs being produced by traditional producers. This decline is estimated to be approximately 3.5 percent per year. Despite this reduction, it was estimated that 1.6 million chickens and 43 million eggs (about 3.6 million dozen) were produced by traditional methods in 1975. In view of the continuing population growth in rural areas, this reduced availability of poultry and eggs in the traditional rural sector implies serious nutritional consequences. Both poultry meat and eggs are believed to be important sources of protein in the rural diets. Even if production levels could be held constant, population growth would result in a reduced per capita availability.

There is no doubt that the commercial poultry industry can continue to produce sufficient eggs and poultry meat to fulfill effective demand in the cities and towns. Most of this segment of the industry is

composed of medium to large, specialized, efficient producers. This specialization and efficiency has resulted in the regular availability in the major towns and cities of good quality poultry meat and eggs at fairly low and constant prices. Rapid adjustment to increased demand is quite easy in the short-term.

Increasing poultry and egg production under the traditional system is more difficult. In most areas, poultry diseases are probably the principal constraint to increased production. Khaki Campbell ducks, a hardy breed with egg-laying ability superior to hens, should be introduced into the lowland tropical areas where they are well adapted.

d. Analytical Summary - There are a number of important farm-level constraints to increasing dairy production. Easy access to market is an absolute essential for fresh milk producers due to the perishable nature of the product. Dairy management capability needs to be improved. Such practices as pasture improvement and the use of better animal health practices would contribute greatly to increased production. The high cost of grain and protein concentrates and the high cost and lack of timely availability of animal health supplies and equipment seriously impede improvement of the dairy industry.

The most serious limitation to increasing beef production on the average livestock farm is probably the carrying capacity of the pastures. Improving the small beef producer's management ability would also result in greater production and reduced loss from health and sanitation problems. Such an effort would very likely also result in substantially greater net returns to producers on the same land base.

Most traditional producers of swine and poultry operate more or less on the "no-input" system under which, the animals are permitted to find their own feed and the farmer harvests the surplus animals. In cases of limited feed supply (very common on small farms) this may be a very rational system. Increased production, however, can be accomplished in many areas through increasing the technical and management capability of selected farmers and assisting them to specialize in swine or poultry production as a means of diversifying and complementing their present operations. The care of livestock is very often performed by women and children, especially the smaller species and poultry. Courses in animal husbandry should be directed specifically to women and children so they will be better able to perform these chores and appreciate the contribution to family nutrition and income which is made possible through poultry, fish, large and small animals.

The most serious constraint in the support system for livestock production appears to be the unavailability of technical and managerial assistance. It seems logical that the milk processing plants and the

beef slaughtering companies can serve as effective channels or tools for working with producers. Also, milk and beef producer's cooperatives in many countries contribute, especially to reducing the constraints, at both the farm and support system levels.

There are three fundamental facts that indicate that Honduras should give priority attention to improving and increasing beef and dairy production. First, from the Honduran point of view, the demand for beef and dairy products in the world market may be considered to be unlimited. Secondly, a high proportion of the land base in Honduras is best suited for permanent pasture and these can best be utilized by beef and dairy. Thirdly, the kinds of weather related disasters (hurricanes, floods and droughts) that have been an important deterrent to Honduran agricultural development, are normally less damaging to livestock than to crop enterprises.

Another consideration in view of the rapidly increasing population, is employment generation. Livestock production can be quite labor extensive. Beef production is more labor intensive on small farms. Dairying is very labor intensive on all farm sizes. Both beef and dairy are labor intensive at the processing level. This would imply that a change in policy is needed in the long run with respect to beef exports. Presently, nearly all beef is exported as fresh meat. In 1976, Honduras exceeded its voluntary quota of fresh beef exports to the U.S. Processed beef, for which there is an excellent demand, is exempt from quotas, takes advantage of value added in-country and generates large amounts of semi-skilled and unskilled employment.

4. Forestry and Fisheries - For information on forestry and fisheries, see Chapter V.A. above, Agricultural and Natural Resources.

5. Summary of Constraints and Strategy Implications - In the development of a production strategy, planners must first analyze the agricultural sector, identify the important constraints and evaluate the options and alternatives for overcoming those constraints. The foregoing assessment of the crop and livestock situation in Honduras, has specifically identified some important constraints and implied others. A review of certain aspects of the structure of the sector will be helpful in discussing the constraints.

More than 94 percent of the farm units in Honduras contain thirty-five hectares or less. About half are three and one-half hectares or less and a majority of these are considered to be traditional farms. The agricultural sector can thus be considered dualistic with commercial farms of various sizes existing alongside a large number of traditional farms. This commercial/traditional dualism in agriculture tends to follow commodities. 7/ The commercial subsector is usually somewhat

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7/ The commercial farmer as used here includes farmers or groups of farmers under the Agrarian Reform Program.

more closely associated with export commodities while traditional farmers are more closely associated with basic food crops. There are some important exceptions; coffee and cattle are also produced by traditional farmers.

Agricultural production on small traditional farms is highly concentrated in the production of basic grains, sesame, fruits and vegetables for the domestic market and traditional dairy and swine. Most of these are relatively inefficient, low income enterprises under these conditions. A large number of small farmers do produce beef and coffee. These are much more profitable on the average than those previously mentioned. The most obvious reason for this is the relatively better, more dependable market for coffee and beef, both of which are produced primarily for export. Both can also be moved to market over bad roads with little or no post-harvest losses.

In general, farmers producing bananas, oil palm, grapefruit, tobacco, pineapple or cotton are in the commercial farmer category. All of these commodities have had relatively stable and favorable markets for some time. All but oil palm are, to some extent, export products and vegetable oil is in short supply in Honduras.

There are a multiplicity of problems that are constraints to increased production by the traditional farmer. These vary somewhat by commodity group.

In many cases, the various constraints combine to create sufficient uncertainty on the part of the farmer to reduce his willingness to take the actions (or risks) necessary to increase production. In some cases, the constraints themselves are sufficient to eliminate the farmer's option to increase production. The more serious constraints for traditional farmers discussed by commodity group, are:

Basic grains and sesame - The unavailability of a fair market: Inadequate handling and storage facilities, both on-farm and off the farm, contribute to this problem. Inadequate access, roads and transport also adversely affect market availability. Information presently available is inadequate, however, to determine the real constraints within the marketing system. Other factors that should be investigated include the availability and cost of marketing, credit and capital, marketing margins, and other marketing inefficiencies.

The unavailability of production inputs including credit: Traditional farmers normally operate with very limited capital. Consequently, their options to use improved technology and production inputs such as fertilizers, improved seed, pesticides, etc., are very much dependent upon the availability of credit. In some cases, technical assistance may be needed in order to increase the use of inputs but, in general, even small traditional farmers are aware of the value of fertilizer, better seed and pesticides. Their failure to increase their use

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of improved inputs can usually be traced to the unavailability of the inputs or the money (credit) to buy them when they are needed or to the unacceptably high risk in view of poor or uncertain markets. Poor access (roads) certainly has an adverse affect on the availability of credit and other inputs as well as on the market price which the farmer expects to receive and which influences his decisions concerning input use.

The limited land base: On farms over 3 hectares, the land base is not an immediate constraint to increased production. The quality of the land in many of the small traditional farms is a constraint, however, to increasing income above the poverty level.

Fruits and Vegetables - Fruit and vegetable production by traditional farmers is normally for the domestic market. The constraints for these producers are the same as those for basic grains producers. Due to the higher production costs and to the highly perishable product, however, the risk is considerably greater and the availability of a fair market is more critical. It should also be noted that for many fruits and vegetables sufficient seed and plant material of the better varieties are not available in Honduras.

Beef Cattle - Technology is an apparent constraint with respect to pasture improvement. Many small farmers could increase production significantly with weed and brush control if they were convinced of the potential benefits.

Dairy Cattle - Dairy products (except for the marketing of surplus animals) have the same constraints as fruits and vegetables because of the perishable nature of the product. The market constraint for milk producers is further complicated by consumer price ceilings, which tend to hold down producer prices. Technology is also a serious constraint to the development of efficient dairy enterprises because they require the use of a number of practices which traditional farmers do not now use.

Poultry - The most important constraint for traditional poultry producers is the availability of a fair market. This is more serious for egg producers because the product is more delicate and perishable.

In discussing the production constraints of small and medium commercial farmers, it is necessary to divide them into two groups. 8/ A large number of commercial farmers produce primarily for the domestic market and operate to a great extent like the traditional farmer. Normally this group has better access (roads) and a more adequate land base, but otherwise, their constraints are the same as those for traditional farmers.

8/ The commercial farm group includes group farms under agrarian reform.

A second group of commercial farmers is primarily involved in vertically integrated production/marketing systems. The principal commodities presently being produced and marketed under integrated systems in Honduras include bananas, sugar, palm oil, grapefruit, tobacco and cotton. Production under these systems is normally done on the basis of a contract, between the producer and the processor or marketing entity, which stipulates the quantity, price and quality of the product to be delivered under the agreement. In some instances, the marketing entity also provides credit or other inputs and/or technical assistance to producers to assure the availability of prime raw materials.

Under the integrated system, it is possible to greatly reduce the farmer's constraints except his normal risk. For most of the commodities mentioned, however, all constraints have not been eliminated. The most serious constraint presently is the availability of inputs including credit. Investment capital or medium and long-term credit are especially short. For some farmers in more remote areas (especially agrarian reform group farms), access is a constraint during certain seasons of the year. Because of the generally higher level of technology required under this system, the lack of technical know-how is sometimes a constraint.

Coffee producers, most of whom are small farmers, did not operate under an integrated system until recently. Prevailing high coffee prices and the coffee rehabilitation program being carried out through the Coffee Institute and various cooperatives, have placed many coffee growers under a system very similar to a fully integrated system. A concerted effort is being made to eliminate all of the farmer's constraints simultaneously under one coordinated program.

A review of the crop and livestock situation and of the constraints to increased production gives rise to some indicated policy and production strategies for the development of the agricultural sector. Some of these are presently a part of GOH strategy and some may appear to represent changes. The principal ones indicated are:

- The vertically integrated production/marketing system is an effective method of reducing production constraints for many agricultural commodities. It also encourages increased private sector participation in agricultural development. GOH policies should continue to favor the expansion of this system to the production and marketing of a broader group of products or commodities.

- Honduras should continue a basic grains production policy designed primarily to meet domestic demand and to provide reasonable carryover each year. Such a policy may well result in some surpluses in good years, and these will likely be absorbed by the C. A. C. M. countries. An exception to this may be in the production of beans. In some areas

beans can be an excellent second crop in rotation with others. The export demand for beans, especially black beans, is sufficient to provide a market for any anticipated surplus.

- Increased stimulus should be given to vegetable oil production to the extent necessary to eliminate imports. Increased plantings of African oil palm already assure a strong move in the direction of eliminating vegetable oil imports. Cotton production is also increasing. One oil crop that is extremely well adapted to small farmer production is coconuts. Both production and marketing techniques are within the capability of small growers. Increased attention should be given to expanding the production of coconuts, not only as an oil crop but as a valuable subsistence crop for small farmers, in areas of adaptation.

Dairy production should be expanded rapidly to substitute for the large amount of milk imports. It is expected that the needed expansion can best come from small to medium commercial farmers (or groups) receiving technical and other assistance through the milk processing plants. This aspect of the program would thus be concentrated in the areas adjacent to the present processing plants. At the same time, a related effort should be made to expand and improve the production of export quality cheese by small and medium farmers, primarily in the mountainous areas of the country where permanent pastures should be the predominant crop.

- A broad and concerted effort should be made to develop the maximum increase in and the diversification of other food crops for domestic use as well as export. For each crop, the varieties most suitable for export markets should be adapted and made available in areas suitable for their production. Annual crops which merit attention are tomatoes, honeydew melons, cantaloupe, watermelons, peppers (sweet and hot), onions, garlic (limited area) and pineapple. Perennial crops include avocado, coconut, limes, achiote, grapefruit, passion fruits, mango, some spices, oranges, figs, grapes and cashews. Honey production should also be stimulated. Several of these crops are presently receiving emphasis or are under study. Of critical importance is the marketing aspect. It is virtually impossible to develop successful fruit and vegetable programs for export without the assistance of a marketing entity experienced in the export market.

- Beef production should continue to be stimulated as rapidly as export markets can be found for the production. Immediate efforts should be made to expand beef processing and the production of specialty meat products. Honduras has had no trouble in filling its U.S. quota for fresh meat. The U.S. is also an excellent market for processed meats and these are marketed outside the quota. Beef production should not be expanded at the expense of dairy, but there is adequate room to more than double the size of the cattle herd within the next 15-20 years.

- Virtually all of the production increases discussed above will come from the growing small and medium commercial farmer group (including the reform farmers and asentamientos). The small traditional farmer who is on an inadequate land base and who has limited access will be extremely difficult to assist. Some of them will undoubtedly be relocated under the agrarian reform program. Those with better access to supplies and markets can be helped to diversify and move into the production of higher value crops or livestock under one of the efforts mentioned above. The hard-core, very low income subsistence farmer who refuses to be relocated to a more adequate land base can hardly have his income raised above the poverty level no matter how much effort is expended in his behalf. He can be helped to raise the nutritional level of his family, however. A nationwide program should be developed to assist this group to increase and diversify their food production for home consumption. Under the program, a package of seed and planting materials recommended for the specific area would be distributed at no cost to the farmer. The packages should include, where adapted, such things as coconuts, avocado, mango, oil palm, citrus (especially limes), chayote, passion fruit, breadfruit, figs, papaya and, possibly, improved varieties of vegetable and root crops. Distribution to the small, inaccessible farms would be difficult but could be assisted by municipal officials, cooperatives and other political or religious groups in the different areas. The basic purpose of the effort would be to improve the nutrition of the poor rural family through a variety of crops that would continue to produce for many years.

VIII. TARGET GROUP PROFILE

1. Introduction

The following description of target groups in the agricultural sector synthesizes some group characteristics that have been analyzed in various studies done for or prior to this assessment. Three target sub-groups are selected on the basis of the criterion of income. These three sub-groups, i.e., agrarian reform farmers, traditional farmers, and rural laborers, are described generally -- labor, social organization, quality of life, and cultural values are considered for each sub-group.

Following the general description is a summary of the major constraints faced by each group, based on an analysis of survey data. The fuller accounts of these constraints are found in Annexes A and K. The summary in this chapter merely highlights some of the more relevant aspects of these two studies. The purpose of the chapter is to provide the reader with a bird's eye view of the groups. Obviously, an attempt to describe qualitative an aggregate group of farmers is bound, by the very nature of the enterprise, to obscure some of the variations within that group. Any attempt to reduce a highly complex phenomenon faces this difficulty. The risk involved in the effort is outweighed by the benefit of providing to the reader a sense of some salient aspects of the sector.

The data for the analysis of the traditional sub-sector was developed in two surveys. The first was conducted in 1976, for the 1975 crop year, covering 1,086 small farms in the north, south and east regions of the country. The second, using the same survey instrument, covered the west central, east central, and western regions with a sample of 987 small farms. The two surveys taken together constitute national coverage. The data includes land tenure and use, production inputs and outputs, and some quality of life indicators. In addition, two microsocio-economic studies were conducted, focusing on the interrelationship of production and marketing in two peasant communities, one of which was market-oriented and the other subsistence-oriented. This microeconomic data is especially useful in the general description of the small farms.

The data for the agrarian reform sub-sector is provided by a survey conducted by ATAC in 1976 and by studies done for this assessment. These studies are found in Annex A of the Assessment.

2. Income Definition of Target Sub-Groups - The agricultural sector is classified in four major categories: commercial private farms, agrarian reform farms, traditional farms, and the landless labor force. These different categories are not entirely distinct: e.g., landless laborers

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are closely linked to the commercial and traditional sub-sector; some landless laborers and some independent small farmers are recruited into the reform sector; some agrarian reform farms operate on a commercial basis while others practice an essentially traditional agriculture. Nevertheless, these conceptual categories serve to initially differentiate the groups which make up the sector and the potential target groups.

The commercial private farms (including large transnational enterprises) are defined by a proxy farm size measure: those with 35 hectares or more. They represent 5.9% of all farms with 57.2% of the total farm land. Agrarian reform farms account for 0.5% of all farms with 6.0% of the land. The remaining 93.6% of all farms are traditional small farms which occupy 36.8% of farmed land. (See Table VII.1).

The commercial private farm-owning families are eliminated a priori from the target group as they do not, on the whole, meet the A.I.D. criterion of poverty. To the extent that this sub-sector is linked to the rural landless laborers and/or is a source of off-farm income for traditional farmers, it should not be entirely dismissed from consideration.

There are 906 group farms (asentamientos, cooperatives and empresas asociativas) in the reform sector with 32,165 member families. 1/ Their mean per capita income, including all sources of household income, is $105.59.2/ If the A.I.D. standard definition of poverty, based on $150 annual per capita in 1969, inflated at a 6% yearly rate to 1978 to approximately $250, is applied to the agrarian reform families, then 90% fall under the poverty line.

It should be noted that there are significant differences in income between asentamientos and cooperatives, i.e., $100 and $131, respectively. Data is not available for the empresas asociativas. 3/

Almost half of the rural poor population in Honduras lives on traditional farms with more than one and less than 35 hectares. Average annual per capita income is $135, including off-farm as well as on-farm sources. There are approximately 124,000 families in this category. If the poverty standard is applied to farms with 20 hectares or less, then 85% of the farm families fall under the poverty line. If it is applied

1/ Source: INA statistics, as of September 1977. More recent INA statistics indicate that a more current figure would be approximately 1,000 groups with 35,000 families.

2/ Source: ATAC Survey, 1976

3/ For a definition of the three types of farms, see Chapter V.D.

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TABLE VIII.1

FARMSIZE: NUMBER OF FARMS AND AMOUNT OF FARMLAND BY FARM SIZE CATEGORY*

FARMSIZE	Number of Farms	% of Total	Area of Farms	% of Total
Less than 1 hectare	33,774	17.3	21,534	0.8
1-2 hectares	38,643	19.8	53,584	2.0
2-3 hectares	28,699	14.7	69,865	2.6
3-5 hectares	23,631	12.1	93,696	3.5
5-20 hectares	47,478	24.3	468,983	17.6
20-50 hectares	15,164	7.8	461,464	17.5
Greater than 50 "	7,908	4.0	1,485,949	56.0
TOTAL	195,297	100.0	2,655,095	100.0

* Source 1974 Agricultural Census.

to farms up to 35 hectares, then the proportion changes slightly to 84%.

In neither case is farm size a perfect proxy measure for income. However, its operational utility and high degree of correlation with income make farm size the best indicator for determining the boundaries of the target group. The smallest farms have a mean per capita income of $83 and the largest $260. In this range, there is a progressive increase in income with increased farm size. Therefore, the smaller the farm, the greater its priority in terms of the poverty criterion alone.

If the lower limit of the traditional sector is drawn at 3 hectares, which some analysts believe is the smallest viable size of a farm enterprise, then there would be approximately 57,000 families in this category. And if one uses the legal definition established in the 1974 Agrarian Reform Law, which proposes to eventually abolish all holdings under five hectares, then there are 34,000 families in the traditional sector.

The size of the rural landless labor force is extremely difficult to determine with exactitude. By extrapolation from the agricultural and population censuses, it is estimated that there are 119,433 families with no land at all. This includes relatively well paid labor on large commercial and multinational farms. To this figure should be added the 33,774 families who live on farms with less than one hectare and who derive 70% of their income from off-farm labor. If farms with less than three hectares, who derive 50% of income from off-farm labor, are included in the rural labor force rather than as viable traditional farms, then the number of farm families added to the labor force is 67,000. Per capita income here is even more difficult to determine. Those living on farms with less than one hectare make $63 per annum. 4/ The best estimate for the landless, given standard wage rates and average employment rates, is $50, but in the case of multinational farm labor may reach as high as $200 per capita.

In summary then, the target groups are as follows: approximately 29,000 families in the reform sector; 124,000 families living on traditional farms; and 153,207 families in the rural labor force. 5/ These target groups have been identified on the basis of mean per capita income which, in all cases, is substantially under the poverty line. The rural labor force is the poorest of the poor target groups; reform families make twice as much as the rural labor force. The traditional farm

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4/ Source: ATAC 1976 and A.I.D. 1977 combined survey data.

5/ These would change to 29,000, 57,000, and 220,000, respectively, if the alternative dividing line of three hectares is used to separate the rural labor force from the traditional farm sector.

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families have the highest mean per capita income of these three target groups, yet they still make only slightly more than half of what is established as the poverty income.

3. General Descriptions of the Target Group

a. Agricultural Regions and Zones - The country has been divided for administrative purposes into eight regions. These were used for this assessment as a basis for disaggregation of farms. As there are no significant aspects of target group farming that are related to this regional differentiation per se, the regions will not be discussed in detail here. The accompanying data in Table VII.2 shows some of the contrasts in population density by region.

Of more descriptive utility is the division of the country in three major ecological zones: intermountain valleys, mountain slopes and coastal plains. Temperature and rainfall factors create numerous ecological subsystems within these major zones. Thus, the southern coastal plain and adjacent mountain slopes are significantly drier than the northern coast.

For an understanding of the target group, it is more useful to think in terms of these ecological zones. Unfortunately, the available data cannot be disaggregated on this basis. Thus, little analysis can be made on this basis. For example, the qualitative description commonly held by many observers of the Honduran rural area is that commercial farms are concentrated in valley and coastal lands, small farms are primarily hillside farms, and group farms are located in both areas. This observation cannot be tested statistically either with survey or census data.

At the risk of oversimplification, the target group's relation to ecological zones can be characterized as follows. Traditional farmers practice rainfall agriculture on mountain slopes, using slash-and-burn techniques, and two-field fallowing systems. Their technology and agricultural practices are best understood as adaptations to ecological factors, developed over several hundred years, and only slightly modified by modern industrial agricultural inputs such as chemical fertilizer, improved seed, and credits.

Group farms represent an attempt by the government to change land tenure patterns in order to facilitate the introduction of industrial agriculture. Valley and mountain slope land is transferred to groups of small farmers and/or landless laborers, on the assumption that the technology of commercial farming can thus be introduced more efficiently and effectively.

There are, naturally, great variations in these types. On tra-

TABLE VIII.2

AGRICULTURAL REGIONS OF HONDURAS

Region	Relative Population Density (1)	Absolute Density (2)	Area (Percentage)	Population (Percentage)	Valley Land (Percentage)	Actual Farm Land (Percentage)
West	1,218	21	16.0	16.0	3.1	35
Central	326 (196)*	43	12.5	23.8	10.5	18
North-Central	250	22	13.5	7.6	4.3	5
South	186	52	4.5	10.8	8.0	10
Northwest	151 (107)*	52	8.5	19.6	18.3	18
Southeast	50	6	19.5	5.3	14.8	8
North	46	17	7.6	5.3	15.8	5
East	5	1	17.9	0.9	25.2	1
TOTAL			100.0	100.0	100.0	100.0

(1) Relative population density here is the number of inhabitants per square kilometer of arable land.

(2) Absolute population density is the number of inhabitants per square kilometer of total area.

* The number in parentheses excludes the large urban centers of Tegucigalpa and San Pedro Sula, respectively.

SOURCE: Cáceres P., Manuel Antonio, Regionalización Agrícola de Honduras, Instituto Interamericano de Ciencias Agrícolas de la OEA, Turrialba. Costa Rica, 1970.

ditional small farms, the principal variable is farm size. Most socio-economic variables on these farms are correlated with the size of the farm. 6/ On group farms, the principal variables are type of organization and crop. Nevertheless, these two patterns can serve as useful points of reference to characterize these groups.

b. The Typical Peasant[7/] Farm Household - The description that follows generally holds true for all farms in the 1-35 hectare range. There are, naturally, great variations within this category in crop patterns, labor allocation, and production strategies; these are discussed in Annex K. Nevertheless, there is a general similarity in the overall patterns of production, organization, and culture among the peasantry which distinguishes it from the commercial and reform sectors.

There are three significant categories of small farms, based on the disaggregation criterion of size and the analysis of characteristics reported in Annex K. The following terminology has been adopted for convenience:

Very small farms	-	1-3 hectares
Medium small farms	-	3-20 hectares
Medium large farms	-	20-35 hectares

The typical peasant farm has six hectares of land, of which three are cultivated during any one crop cycle. Two-thirds of the farm income is derived from crops. Farm animals, principally cattle, account for 30% of farm income. 8/

The peasant household farm is an undifferentiated unit of production and consumption. It is undifferentiated not only in its combination of these functions, but in the sense that manipulation of the means of production is contained in the household -- that is, the

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6/ See Annex K, Profile of Small Farms.

7/ The term "peasant" is used here in its scientific sense, to refer to a cultivator of land who works within a statue market context, as opposed to primitive horticulturalists or industrial farmers. CF. Wolf, Eric. Peasants. Prentice Hall, Inc; New Jersey, 1969.

8/ This is farm as distinct from family, income. See Table 2.25, Annex K for the distinction. The mean size of six hectares includes farms surveyed in 1976 and 1977 in the 1-35 hectare range. Census data for all small farms indicate a mean size of five hectares for those farms in the 1-20 hectare range, and 7.5 for those in the 1-50 range. Unfortunately, it is not possible to calculate from census data the mean for 1-35 hectare farms.

peasant laborer and his family are owners/managers/laborers on the farm. It is important to note that though it is self-managing unit, it is not strictly analogous to a commercial farm. Unlike the commercial farm, the peasant household generates goods to provide for household maintenance rather than to generate profit. Even among cash crop producers, the orientation is toward consumption rather than profits. Thus, the peasant farm is a land-management and labor-organizing household unit which is primarily oriented to the provision of material necessities.

The lack of distinction between household and farm is reflected in the Honduran peasant's attitude toward farm plots. There is a dependence upon and near reverence for planting and harvesting that is reflected in the saying: "me voy a ver la vida" (I am going to look after my life), which the farmer says when he is going to see his farm land.

(1) Labor, Capital and Technology on the Peasant Farm - Unlike workers on a commercial farm, the members of the peasant farm labor force cannot be cost-accounted, hired, and fired in accordance with the labor market and the profitability of the organization. The membership of the peasant farm household is fixed by birth, adoption, marriage, and death. Any analysis of peasant farm constraints must take the fixity of the farm labor force into account.

The production process is highly labor-intensive in all three categories of small farms; on very small farms labor represents 90% of production costs while on medium small and medium large farms labor represents three-quarters of the cost.

The return to labor is three times greater on all traditional small farms than the average wage rate in rural Honduras. However, there is significant variation with farm size, as the return on very small farms is twice the wage rate while on the largest farms it is almost five times the wage rate.

Children are very much valued because of their contribution to family labor. Those between six and 14 years, are given various responsibilities. Girls help their mothers to make "tortillas", 9/ carry water, clean dishes, and care for small children. Boys collect firewood, run errands, and help with the animals and other chores.

As the children become adults, they undergo a transition to adult tasks. Men are responsible for building houses, cleaning and planting the land, harvesting, and heavy manual labor (e.g., building fences,

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9/ "Tortilla" is a corn meal wafer which is a staple of the Mesoamerican peasant's diet.

cutting trees; sawing lumber; buying and selling animals, grains or produce). Women are expected to stay home, care for the children, tend the house plot crops, provide meals and wash the clothes. Chickens and small livestock around the house are the woman's responsibility. Eggs and milk are processed and sold by women; this is one of the few sources of cash income controlled by women.

Labor on the small farm is not mediated by a very complex technology. Tools are direct adjuncts of the labor process. The digging stick 10/ and the two-ox plow constitute the two technologies of agriculture in most of rural Honduras. They are used concurrently in the south, with plows on flat land and the stick on hillsides. The plow is not found in the northern regions. The machete, plow, and ax are distributed throughout Honduras. There are two different types of machete, a curved and a straight machete. The curved machete is found in the areas where the plow is used.

The digging stick is used for planting seeds, both on the hillside and in the flat areas of the north. Machetes and hoes are used for various agricultural tasks, while the ax is used for heavy clearing and for preparing firewood.

Improved technology is used to some extent in all peasant farms. Two types of technology - fertilizer and improved - seed were combined for this analysis to produce an input use index. Only 12% of very small farms use either of these as compared to one-third of medium large farms.

The productivity of improved technology is abundantly clear to the small farmers, as a great majority expressed desire for improved and increased inputs. This enthusiasm is born out by the data on the increased profitability of cultivated land with increased investment in technology. However, access to it is constrained by a number of factors, discussed further on in this chapter.

Capital accumulation is very difficult on farms where production is barely sufficient for subsistence. Therefore, credit is the principal means for increasing working capital. The data shows that an increase in credit generates increases in productivity and profitability that are significant enough to make credit desirable. There is, as on all peasant farms, an ambivalence about credit as the likelihood of increased returns is weighed against the risk, especially since returns are relative but risks are absolute and usually irreversible.

(2) A Typical Daily Cycle - Labor on most small farms follows a daily cycle that is regulated by the sun. Women get up first, before sunrise, to start a fire in the "fogón" 11/ and make coffee. She serves

10/ The digging stick is used to make a small hole in which seeds are dropped during planting.
11/ "Fogón" is the hearth.

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this first to her husband. Men leave the household soon after sunrise to tend field crops or animals. The woman and her elder daughters begin to make tortillas; this is the most time-consuming task of the day. Men return to the house in mid-morning for breakfast, usually black beans, eggs, and cheese or sour cream; if they are working out in the field they carry the breakfast with them. Women seldom sit down to eat but nibble while they work.

With men in the fields, and the tortillas finished, the women work from 10 a.m. to 3 p.m. on washing, ironing, sewing, making cheese, or other housework. They may leave the house on an errand such as marketing or going to a nearby clinic, but leaving to visit neighbors is considered a waste of time.

Men return from the fields, and children from school, in mid-afternoon. The evening meal is eaten between 4 and 6 p.m. and consists of whatever is at hand. The late afternoon is a time for socializing, listening to the radio, or doing small household chores. Usually by 8 p.m. the windows and doors are barred and the family asleep.

Seasonal labor demands introduce variations into this cycle, especially at harvest time. However, the general pattern holds true with little basic change. This repetitive daily cycle is the basic structure of farm organization that must be understood in order to adequately describe the living conditions on most small traditional farms.

(3) Community Organization - The farm household is the basic social unit throughout much of rural Honduras. It is typically a nuclear family, with kinship ties to other families in the community. The hamlet or village is the unit which provides peasant families with a sense of place. Villages, hamlets, and towns are grouped into municipalities. These units, however, are político-administrative units with little social or economic significance.

The peasant community is a group of peasant families located within a specific geographical area linked by patterned and repetitive interaction which is directed toward the fulfillment of certain needs which cannot be solved by the peasant family alone. These interactions are: (1) economic transactions, i.e., exchanges of goods and services between peasant families; (2) social control activities, directed to the maintenance of social order and collective decision making; (3) socialization activities, for the transmission of cultural values and knowledge to the young; and (4) mutual support activities, whereby peasant families aid those in crisis.

The Honduran peasant community falls midway between the corporate and open community types identified in anthropological analyses of Latin American peasantry. It is not based on the corporate ownership of land, it is not closed to the outside world, but it is not as open and

receptive to external influence as are mestizo communities in some lowland areas of Latin America.

The Honduran village is a rural community of semi-subsistence cultivators with approximately 50 to 100 families, within a geographical area that is served by a single primary school. Place names, football teams, chapels, or patron saints may serve to identify a Honduran community. The passive bases of community solidarity are a common culture and a shared geographical identification. The village does not have a formal civic or civic-religious system which serves to demarcate its boundaries and by which membership in the community is defined. Rather, membership is based on co-residence, shared norms, kinship, and other factors that are not sharply defined.

The most common organization in the villages is the patronato, a local board of officers elected to carry out specific development projects. The patronato tradition is a result of the physical isolation of rural communities and the absence, until recently, of strong central government programs for schools, roads and other community improvements. Patronatos are the means by which communities set out to solve problems by their own efforts.

Besides the patronato, the principal community organizations are parent-teacher associations and the municipality. While the first is a voluntary organization to which one-third to one-half of the families in the community usually belong, the municipality encompasses all the families.

One-fifth of peasant families belong to organizations with economic functions such as cooperatives, credit and savings associations, peasant leagues, and the like. The principal benefit to the family of these organizations is to provide a source of credit and agricultural inputs.

(4) Indicators of the Quality of Life: Housing, Health, Education - The small farm family typically lives in a house on a solar (household plot) with a few trees (coffee, maíz, papaya, etc.), vine crops and small livestock; the houses are usually made with dirt walls (either adobe blocks or wattle-and-doub), dirt floors, and roofs of tile or straw. The settlement pattern in most villages is semi-dispersed, except for the municipal center, which is usually a town with a grid-street pattern. The wealthier households have a separate room for cooking and eating, although the most common pattern is to have sleeping, eating, and cooking facilities under one roof, separated by dividers. Furthermore, crops and tools are usually stored within the house - one more indication of the lack of differentiation between the house and the farm.

Very few small farm houses have their own source of potable water or letrines. Thus, it is not surprising that a great number of community

development projects are to install potable water and environmental sanitation systems. The water for household uses is carried by hand from wells, community faucets, or the nearby river. Clothes are usually washed at the river or stream to avoid the need to carry water. An inordinate amount of time and energy is consumed in the daily procurement of potable water.

Health problems are too numerous to analyze in detail here. Suffice is to say that almost two-thirds of reported illnesses in most rural areas are gastrointestinal. Access to basic health services is limited by the distances to health centers. Doctors are usually not to be found outside provincial capitals.

The nutrition problem is described and analyzed fully in the GOH/AID nutrition sector assessment. While infant malnutrition is not as severe among peasants as it is among landless families, it is a very serious problem.

Education is valued by most peasants in a very pragmatic way. They wish their children to be able to read, write, and do the simple arithmetic required by farming, marketing, and household activities. Schools are available to most small farm households, though most children in the rural areas drop out after two or three years of schooling. The goal of education as an avenue to a non-farming career is not common, as this opposes the value of supporting the family work force pattern. Thus, completion of primary education is considered to be an achievement of some distinction.

Friction between households in the farming community and the schools arises frequently due to conflict between the agriculturally-oriented value systems of small farmers and the professional urban, career-oriented school standards. These different value systems are reflected in the teacher's denigration of the living standards and habits of most peasant households.

(5) Cultural Value System - Corn and cattle are the two most important aspects of life for peasant farmers. Behavioral norms which regulate the peasants are directly related to the agricultural patterns based on these products and their value systems perpetrate these norms. The most predominant values are: individualism; hard work, present time orientation, fatalism, dependence on family, and a moderate xenophobia.

The peasant farmer expends great quantities of energy on his holdings. He can in no way be regarded as lazy or dependent on handouts. He struggles with the soil, climate, and terrain as have his ancestors for generations. He is aware that his "sweat produces his food." Hunger is appeased only if the farm produces and the peasant works to sustain life.

Values of hard work, frugality, and dependence on family are functional

supports of the subsistence pattern. Present time orientation, fatalism, and family dependence are adaptations to soil and climate conditions. The future is seen in cyclical agricultural patterns governed by the climate primarily. Plans over a five-year period are not very credible, especially those that depend on government because of personnel changes and lack of continuity in government institutions.

The majority of peasants have few concrete experiences outside their own locale, so they judge national plans and projects on the basis of their own experience. The reaction to government development projects one finds among peasant farmers is, at best, "wait and see" and most often one of disbelief in future fulfillment of plans.

Most of the peasant relationships to institutions are valued in personalistic terms. The school teacher is education; the priest is religion; the nurse is the health program; the extension agent is government agriculture.

It is difficult to evaluate the value of individualism on a statistical basis. Available data indicate that almost one-fifth of the members of this target group belong to cooperatives; most of these are inputs or credit and savings coops. An additional 30% of this group express an interest to join cooperatives. However, 50% have no interest in joining cooperatives of any type. What should be noted is that the production and labor process remains essentially a family, rather than group, affair even among those who are members of cooperatives.

In general, the Honduran peasant wants to cooperate in programs to improve his condition, but he is cautious and fearful. He is a realist, above all; he works hard to get very little but within his environment he knows what to expect and what actions to take. There is a strong tendency to emphasize the positive aspect of his life. This optimism does not overlook the precariousness of his existence, but it provides a reason for cautious attempts at incorporating new technology.

In essence, the "good" peasant minds his own business, toils his own fields, and reaps his own benefits.

The relation of peasant cultural values to rural stability and change, is a difficult problem in the analysis of the Latin American peasantry in general and Honduran peasants in particular. There are two opposing points of view about the role of peasant values in maintaining the status quo. One stresses their restraining influence on change. The other sees ecological and economic factors as determinants of this conservatism. For this assessment, an eclectic viewpoint is adopted: ecological, economic, and ideological factors interact to determine stability and/or change in peasant society. On the one hand, there is a gap between the value system of the peasant and that of the urban change agent. This is true of most peasant societies. It is often accompanied by feelings of superiority on the part of the urbanite, and feeling of mistrust by the

peasant toward the urbanite. In Honduras, the change agent more often exhibits a benevolent, but misguided, attitude of patronizing paternalism than of outright cultural superiority. There are also cogent ecological and economic reasons for the observed stability.

On the other hand, there has been a lack of pressure for change coming from the peasantry. However, recent peasant activities are a departure from this non-activist tradition. Government policy and campesino values are changing. National development plans exhibit a significant rural thrust. Increasing numbers of rural communities are involved in petitions for school, health, and nutrition services. Part of the stimulus for this is increased communications; part is probably due to increasing awareness among peasants of the beneficial changes that can be brought about in their living conditions.

The fundamental value of the peasant is ensuring a minimum food supply for his family. This is constrained by factors such as the crops that are traditionally known to produce well in particular climate and soil conditions, his food tastes, the amount of land for cultivation and its productivity, the available technology, and his credit and marketing system. This value is related to the circumstances of the peasant economy and production activities discussed earlier.

An important value in peasant culture is the maintenance of family health. Concern about diseases and their cure is very high in most Honduran peasant communities. Personal identity and self-worth are high priority values. The characteristic of responsibility, including honesty and the keeping of one's word, is part of the personal value system of most rural Hondurans. Communication between change agents and the peasantry is often impeded by insufficient consideration of these values.

Extended family loyalty is a common value for Honduran peasants. This loyalty is one means of dealing with the insecurity of rural conditions. Alliances between equals, be they kith or kin, are strategies for dealing with this insecurity. Alliances with patrons, or asymmetrical alliances, are means of dealing with problems that cannot be handled through relatives or friends. Both of these kinds of relationship are important considerations in analyzing the organization of peasant communities.

A fairly well-developed system of traditionally explained illness and an active empirical curing system exists in Honduras. 12/ The

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12/ c.f., Adams, Richard. Cultural Survey of Honduras.

traditional curers are pharmacists, curanderos - parcheros, midwives, spiritualists, and "people who know". Traditional systems of curing are far from adequate. The infant mortality rate in rural Honduras is much higher than in urban Honduras. Of 1,000 births in the rural area, there are 128.1 deaths; the comparable urban ratio is 85.1 per 1,000. These conditions are due in part to the lack of sanitary prevention techniques and the conditions of available water supply in the rural areas.

The Honduran rural curing system is not antithetical to doctors or modern medicines. Adams has noted that where there are doctors available they are well accepted, and integrated into the peasant's curing system. The problem is basically a lack of medical personnel, not resistance to it.

c. The Typical Group Farm - Any attempt to characterize group farms is fraught with difficulties. Difficulties in land tenure, delivery of credit and extension services, organization of marketing and distribution, to mention a few have,beset the group farm enterprises. These are detailed in the studies of agrarian reform (Annex A).

Group farms can be classed into two main categories: those located in areas de concentración and others. The former have received concentrated government assistance, technical assistance, credit, marketing services, and the range of social services. Income and quality of life in these areas the Aguán project, Isletas, the banana cooperatives - are considerably higher than in most other asentamientos and cooperatives. USAID and GOH programs have been targeted to model asentamientos in specific target areas. An estimated 150 cooperatives and asentamientos of the 906 in existence have this concentrated assistance. The rest receive services in varying degrees of intensity.

There are three types of group farms - asentamientos, cooperatives, and empresas asociativas. Asentamientos are land grants made to a group of peasants under Decree #108. The term refers only to the process of granting land, without reference to the type of farm organization. Cooperatives and empresas asociativas are two organizational farms which are very similar but have one important difference. The empresa asociativa includes all laborers as members, whereas the cooperative can hire wage laborers who are not members. The empresa farm has been adopted by the banana reform farms in Isletas and one other large group farm in La Masica. The great majority of organized group farms are cooperatives.

(1) Labor on the Group Farm - The typical pattern is to organize labor collectively on a portion of farm land, and to allot some parcels to households. There are some group farms with no household parcels, and some with no collective labor, but most of them combine the two systems.

The pattern of division of labor by sex on small peasant farms persists. On some group farms it is accentuated by the fact that men are the members of the organization and they do all the collective agricultural labor. However, some group farms have attempted to provide organized opportunities for productive women's labor.

The division of labor by age is substantially modified on many group farms, partly because minors are not supposed to work in collective farming activities and partly because their families place more value on primary education. Most group farms have not been in existence long enough to adopt a clear policy for the incorporation of young adults into the labor force. Nevertheless, on many group farms young males older than 16 years become wage-earners along with adult males.

There is very little differentiation of labor by specialty. With the exception of work as a mechanic or tractor driver, most group farm laborers are functionally interchangeable. Work is organized in groups assigned to tasks on a daily or weekly basis. Seasonal farm plans for the collective enterprise are developed by the group, with assistance from technicians of INA, the Bank, or the Ministry of Natural Resources.

Labor on most agrarian reform farms is remunerated on the basis of number of days worked, assessed at the going wage rate. Payments are disbursed from advances on credit throughout the year, while this is technically not a wage, it is perceived as a wage by farm members. Credit is seen as supplying wages to workers in the enterprise, instead of being handled as an investment in production. The whole question of the relation of labor, credit, and wages is perceived so differently by members of the groups and government functionaries that this constitutes a critical problem in this sector. The transition from small farm organization to group farm organization, where labor is an investment toward production as well as are other inputs, has not yet been made on most agrarian reform farms. As one consequence, there are large problems in the payback of credit (c.f. study of agrarian reform, Annex A).

(2) Group Farm Social Organization - While the family remains the principal consumption unit, the farm becomes the principal production unit. Households within the farm continue to produce a considerable amount of income on individual parcels of land, either within or without the group farm land. However, the principal labor investment is in the group farm enterprise.

There are various patterns of social organization, depending mostly on the affiliation to one or another peasant league. However, none of the organizations fulfills purely economic functions. The cooperative or asentamiento becomes the community, with social, political and cultural functions. While the community and the peasant farm household are sharply differentiated, the group farm takes a production role, community

organization roles, and a variety of development roles that are not found in peasant farm communities.

There is, typically, at executive committee of the group farm with a president, vice-president, secretary, treasurer, and various committee chairmen for health, education, labor, and other functions. There is a watchdog committee (Junta de Vigilància) that oversees the executive committee. The assembly of all members is the deliberative and decision-making body of the group farm. While some day-to-day functions are delegated to the elected officers, the assembly serves as a town hall for a great number of organizational decisions -- from crop plans to educational matters.

The principal difficulties in group farm organization stem from the background that the members have as individual peasant farmers. There are notable differences between group farms in the degree of institutionalization of collective decision-making. While some of these are related to differences in education for group farming, to a great extent they are caused by the pattern of economic organization of the farm. Those with credit, a stable commercial crop, and group marketing arrangements have the strongest group organization in general. The absence of any or all of the these factors diminishes the importance of group organization.

It is clear that most members of group farms prefer group organization. Its advantages stand in contrast to their former position as landless laborers or impoverished peasant farmers. While it is true that on the average the group farmer earns less than the average peasant farmer, the majority of group farm members prefer the organization because of its superiority over their former individual farmer conditions.

(3). Indicators of the Quality of Life - Access to health and education is greater for group farms than individual peasant farmers. This is due in part to the emphasis placed on this target group in government service programs. It is due also to the ability of the group farm to mobilize its members' resources to help build schools, rural clinics, to participate in health training programs, and to place its children in school.

There is a much greater emphasis on access to education by children. First, children do not play as important an economic role in the group farm as on the individual peasant farm. Secondly, the group farmer values education as a career opportunity for his child. Thus, while the average educational attainment of the group farmer is not significantly higher than the peasant farmer, the attendance rates of group farm school-age children are significantly higher.

The nutrition assessment shows that group farms present no improvement in nutritional status over individual farms. 13/ This is to be

13/ SAPLAN. Nutrition Assessment. See data on Tocoa and nearby cooperatives.

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expected, as improvements in productivity and income had not yet been attained in 1974 when data were collected. Thus, there was little likelihood of a feedback into nutritional status.

The types and quality of houses are not significantly different, with the exception of those farms which are in publicly financed housing programs. Services of potable water and environmental sanitation are considerably improved, partly because of the group farms' ability to organize improvement projects.

(4) Cultural Value Systems - With the exception of the values relating to individualism and present-time orientation, there is no significant difference in the values of members of group farms and individual farmers. 14/ That this is so should not be surprising, since the values of group farmers were formed during their earlier experience as either peasants or laborers.

The value of individualism is explicitly rejected by a majority of members of group farms and in its place a group work ethic is supported. While there are still problems in translating this ethic into action, the group work ethic remains the goal toward which most group farm members strive. This has income effects. The ATAC survey showed that off-farm income for independent traditional farmers was a substantial element in family income; group farms are reluctant to authorize their members to work off-farm since it is believed this would weaken the collective mystique.

There appears to be a strong contrast in the values toward group organization between cooperatives in the concentrated development zones and asentamientos in other areas. A mystique of group identity unites many asentamientos who feel that as a group they sink or swim, while on many of the cooperatives in concentrated development zones the attitude of the member is that he is a wage laborer in an enterprise managed by the state. The difference may be due to the difference in the nature of recruitment of members - most asentamientos are local groups united by kinship and residence ties while the concentrated development areas recruit migrants from all over the country. Whatever the reasons, the difference is important, as the viability of group farms as units of self management depends on the attitudes of its members. It may, in fact, be possible to show that there is a negative correlation between the level of management assistance applied by the state in the short-run and the long-term viability of the farm as a management unit.

Most of the group farms with long-term investment credit should be working with a future-time orientation, rather than the short-term yearly planning characteristic of the peasant farmer. The introduction of future planning values remains one of the principal problems on group

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14/ CF: Hernández, Orlando; MA Thesis on Social Class and Values in Rural Honduras, 1978.

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farms, since the urgent necessities of everyday subsistence continue to absorb much of the energy and income of the group farmers. This value may be held, but it is hard for a farmer who must look after the daily care and feeding of his family to fully operationalize it.

d. The Rural Labor Force - The rural labor force is composed of the two sub-groups mentioned in VI.A.,i.e., landless families and families with micro-farms less than 1 hectare. These two are in most instances undistinguishable, since families on micro-farms derive 70% of their income from off-farm sources. There is a third sub-group of laborers permanently employed on commercial farms. They are not described or analyzed here, as their situation is very sui generis and as the commercial farms have been excluded from the target group a priori.

Historical developments in the last quarter of a century have greatly increased the size of the landless labor force. One factor is population growth. The more important factors relate to the shift from a semi-feudal agrarian structure to the present commercial farming patterns. Traditionally, a landowner supported a number of peasants through such arrangements as sharecropping, labor in exchange for land, land loans for labor at certain key times, and other paternalistic landlord - peasant relations. The mechanization of farming, fears of landlords that resident peasants will seek expropriation of farm land, and other recent trends in intensification of commercial farming have increased the numbers of landless laborers, who no longer can obtain milpas under the former arrangements.

The typical household in the rural labor force is not, on the whole, significantly different, in terms of internal organization or cultural values, from the peasant household. The following description will focus on the difference in these and other areas that do exist.

(1) Labor - The rural labor force deploys its labor in response to seasonal labor demands both at the local and regional level. Landless laborers work for large commercial farms, for peasant farmers, and in a variety of service occupations in rural towns.

Family labor, especially that of children between 13 and 18 years of age, is put on the labor market. Thus, the household is not a production unit as is the peasant farm household. Nevertheless, it retains its consumption functions.

The productivity of family labor is dependent, to a much greater extent than on peasant farms, on factors that are amenable to human control but beyond the control of the laborer himself. That is, while the peasant farmer can decide the intensity of his labor input on his land, the landless laborer is subject to decisions made by those who employ his labor.

(2) Community Organization - Studies in several parts of rural Honduras show that landless laborers are less likely to belong to community organizations of any type than are peasant farmers. This lack of participation is most likely explained by the lack of decision making power that the laborer has in other areas of action, which does not encourage him to believe that he can effectively participate in community decision making.

(3) Indicators of the Quality Life - There are no significant differences in general health and education conditions between peasant farm families and landless laborers. In the area of nutrition, however, significant differences emerge. The single-most important factor related to malnutrition, as identified in the nutrition assessment, is access to land. The minimal optimal size for a family farm is roughly 1.4 hectares. The nutritional status of families with less than this amount is significantly lower than that of families with more than 1.4 hectares.

Access to education, potable water, and environmental sanitation is not significantly different, as these are phenomena under the community rather than the household domain.

(4) Cultural Value System - The aforementioned study of the values of rural dwellers shows some differences between laborers and peasant farmers in terms of fatalism and the work ethic. The landless laborer is more fatalistic and has less faith in the efficacy of hard work. This is predictable, since intensification of labor efforts does not result in better results for the laborer but for his employer. That is, most rural laborers will earn the same wage no matter how hard they work. The peasant farmer knows that the greater his labor input, the higher is his production.

In most other significant respects, the value system of landless families is not different from their peasant farm neighbors.

4. Principal Constraints of the Target Sub-Groups - The following summarizes the principal constraints faced by landless laborers and peasant farmer, described more fully in Annex K. As the problems of group farmers are treated extensively in the section on agrarian reform, they are not analyzed here.

a. The Peasant Farm

(1) Resources and Resource Allocation - One of the most important findings of this assessment is that access to productive land is not a very important constraint in farms above 3 hectares. There is fallow and unused land, in increasing proportion, in farms above this

size. For smaller farms, the amount of cropable land is only sufficient to provide for base family subsistence needs; since on the average, 50% of the land area of these farms is in natural pasture and forest, and it is calculated that 1.4 hectares of crop land is required for subsistence. The survey data show that the farms in this size range do not have any unused land.

On medium small and medium large farms, cropped land could be increased by 50% with the provision of sufficient resources. Therefore, the constraint is not access to land but access to other factors of production.

Tenure status is likewise problematic for very small farms as one-third of farm land is rented or sharecropped. This poses a severe constraint in terms of access to credit on these farms. Furthermore, it is a constraint to identifying labor and input investment on these farms, because of the insecurity of continued use of rented and sharecropped land. Permanent improvements to this type of land by the peasant are unlikely, for the same reason.

The patterns of intensity of land use also represent a constraint to the very small farms in terms of the ability to practice shifting cultivation of productive land. Given current farm practices, shifting cultivation is an important method of regenerating the productive capacity of the soil. The amount of land that can be left idle for a suitable time between successive cultivations is severely limited on very small farms.

(2) Labor: Availability, Use, Utility - Family labor is underemployed on most of all of the traditional small farms, where the average number of days worked by adults is 150. The severity of this problem increases as farm size decreases. Nevertheless, wage labor provides 37% of all labor even on very small farms, though its importance increases as farm size increases. This apparent contradiction is due to the seasonal variation in labor demands. The constraint is that family labor is underutilized in some seasons while in times of peak demand, hand labor must be purchased.

Another constraint is that the profitability of labor decreases as farm size decreases. This is probably due primarily to the decreasing importance of technology on smaller farms, which reduces the productivity and profitability of labor.

It should be noted here that on none of the traditional farms is the profitability of labor so low as to represent an absolute constraint. There is no opportunity cost of family farm labor vis-a-vis available wage labor, as even on the smallest farms the returns to labor are sufficient to make it the preferable alternative.

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(3) Capital: Credit - Access to credit is a constraint on all traditional farms. Only 25% of these farms have access to credit. The demand for credit is 5 times greater than the supply of credit being used by farms. Popular belief to the contrary notwithstanding, this is not due to the risk that credit is to the lender, as bad debts represent only 5% of the total credit lent in one agricultural year. 15/ This compares very favorably with the average indebtedness on commercial farms.

The complexity of the credit issue does not foreclose the possibility of asserting the two principal constraints: (1) the demand for credit by peasant farmers is far greater than the supply, even after the farmer weighs his risk; and (2) even though indebtedness of small farms is not significantly greater than it is on commercial farms, the credit-lending institutions are much more reluctant to loan to small farms than to commercial farms.

(4) Crops: Production Mix, Disposition of Production - Few, if any, of the traditional farms are self-sufficient units. 16/ There are two indicators that measure the importance of subsistence versus market factors in the crop production process. One is a direct measure of the proportion of crop production that is marketed, taking into account the fact that some crops are sold to enable the purchase of other subsistence commodities. An indirect measure is the relative proportion of market vs. food crops that are produced on the farm.

The development of very small farms is constrained in terms of its crop mix. Almost 90% of production on these farms is accounted for by basic grains, which are subsistence crops and relatively poor producers of market exchange. The low market prices present a constraint that is compounded by the fact that some small farmers sell at harvest time at low prices and, for a variety of reasons, buy back food crops later when prices are much higher. It must be noted, however, that this does not represent a constraint to the small farmer himself; rather, it is a necessary measure taken to guarantee subsistence.

The degree of orientation to the market is constrained by farm size, as the very small farms market only a third of their production.

15/ Source: 1977 survey of small farms. This is based on the small farm's reports of credit vs. debits. It should be compared to BNF's figure of approximately 35% bad debts in its credit portfolio for non-reform farmers.

16/ Self-sufficiency is often confused with subsistence farming. The subsistence-oriented peasant farmer always is involved, to some extent, in an exchange system where crops produced on the farm are traded or sold to obtain items which the farmer cannot produce.

(5) Animal Husbandry - While income from farm animals accounts for a third of farm income, there are two serious constraints to this activity on small farms. One is the low proportion of land in improved pasture on very small and medium small peasant farms. The other is the dearth of technical assistance for animal husbandry. In addition to the absolute limit already discussed, there is a serious disproportion in the technical assistance for crops vis-a-vis animal husbandry. Less than 5% of available technical assistance goes to animal production activities, despite their profitability and contribution to farm income.

(6) Technology - The attitudes of traditional farmers toward improved technology do not represent a major constraint. (See V.C.) The appropriate use of technology is a constraint; there is, for example, a widespread uncertainty as to the most efficient method and amount of fertilizer application.

The low level of improved technology is a constraint to increased production on all traditional farms, but its significance increases as farm size decreases; but this constraint is significantly related to the question of credit and the market.

The principal constraint in this sphere is the low level of technical assistance, as only 10% of traditional farmers have received assistance in the form of classes, demonstrations or visits.

The distribution of technical assistance is heavily skewed to the larger farms. Of all farms in Honduras, according to census data, 11.8% of the farm units (those over 20 hectares) received half of all technical assistance measured in terms of number of visits.

b. The Rural Labor Force - The rural labor force faces three principal constraints; lack of access to land with which to provide an adequate income from family farming; insufficient and seasonally fluctuating demand for family labor; and low absolute and relative wage labor rates. These constraints are interrelated. Thus, removal of the land constraint would eliminate the labor demand constraint and considerably ameliorate the wage labor rate constraint.

Rural laborers living on farms with less than one hectare are not much better off than landless laborers. They derive more than 70% of their income from off-farm labor. They own only 25% of their land, which makes access to production credit extremely difficult. Their crop production is very labor intensive, as inputs account for only 10% of production costs.

Most of crop production on their farms is basic grains, which is a constraint in the sense that these are poor producers of cash exchange. However, this represents a distinct advantage over the completely land-

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less family which does not have even this small insurance of family subsistence. In fact, while labor on the small family plot may be less remunerative than wage labor, it is preferred by landless laborers because of its direct contribution to the family subsistence diet, without the intervening inflation factors.

5. Conclusion - The target groups in the sector are faced with a variety of complex problems. The most sizable group-the landless labor force-has been the target of agrarian reform efforts for a number of years. The fact that in 1978 there are almost four times as many landless families as there are reform families shows that the problem remains a very large one indeed. The landless labor force has the lowest income, the highest incidence of malnutrition, yet it is the group that is most difficult to reach with agricultural sector programs. While their basic health and education needs can be met, their income will not increase nor will their nutritional status improve unless there are increased employment opportunities. Since the impact of subsistence farming on family nutrition is direct, provision of some land to the landless labor force is preferable to increasing wage labor opportunities. Wages are subject to all the vagaries of inflation of food prices; peasant farmers keep part of their crops for family consumption as insurance against inflation.

The peasant farmer faces great problems not in terms of access to land, but in access to inputs and technical assistance. The delivery system in the public agricultural sector has focused on the group farmers, to the detriment of the majority of peasant farmers. Agricultural sector programs which do not focus on this target group will ignore more than two-fifths of the potential target group.

Peasant farms are important producers of the nation's basic grains food supply, yet they are the least important users of the inputs of industrial agriculture (fertilizer, improved seed, etc.). The inputs that are used on these farms go to cash crops like potatoes, tomatoes, melons, etc. The technology of basic grains production remains essentially unchanged, primarily because of the high cost of inputs in the relation to market prices. Any program which does not attack the problem on all levels, e.g., marketing as well as production, is doomed to have little impact on this target sub-group.

The reform sector, with its group farms, is probably the case of a target group that is expected to do too much too soon. The transition to complex commercial farming patterns is difficult at best for farmers recruited from the traditional sector. Bewildering shifts in policy and a lack of coordination between public sector programs for this target sub-group do not aid this complex transition. This group more than any other, requires a coordinated, long-term, stable public sector policy. Otherwise, it is likely to become the victim of its own desires and efforts to move from traditional to modern farming methods.

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IX. EXTERNAL ASSISTANCE

Table 1 of Annex D provides brief descriptions of the great majority of all loans and grants related to the agricultural sector, active or under negotiation, discriminated by the ten principal donors active in this area. There are several other donors active in a small way in this sector for which data was unavailable, e.g., the U.K., Israel, Japan. Also, Honduras participated in ROCAP regional projects totalling $24.1 million.

As of January 1, 1978, the participation of the ten major assistance agencies in financing activities in the sector was as follows (See Table V, of Annex D, for details):

	($000)
Active Loans	$ 225,340.0
Active Grants	39,775.0
Sub-Total	$ 265,115.0
Loans Under Negotiation	58,292.3
Grants Under Negotiation	23,575.0
Sub-Total	$ 81,867.3
Grand Total	$ 346,982.0

This works out to approximately $170.00 per rural inhabitant, equivalent to about double the average annual rural per capita income. Another way of examining the magnitude of the assistance effort is to compare it to the GOH public investment budget for the sector. For the 1976-1983 period, the Government plans call for an annual average investment of about $116 million per year, or $580 million over the next 5-year period. Their plans also call for approximately 60% external financing, i.e., $382 million. Since some portion of the active loans and grants have already been expended, the gap is larger than the $35 million difference between $382 and $347 million. However, 66% of all active loans and grants was scheduled for initiation in 1977 (See Table II, Annex D), thus it should not be too much larger. One can conclude that from the quantitative standpoint, external financing is not a constraint on development of the agricultural sector.

Looking at the composition of external assistance, several facts become immediately apparent from an examination of Annex D, Table VI:

1. The lion's share of external assistance goes to the forestry sub-sector--over 40%.

2. There is multi-donor intervention in every field of activity.

3. There is a tendency to utilize a multi-purpose type of project.

i.e., one which cuts across fields of activity and begins to approximate sector lending.

Several other tendencies are less apparent and require an analysis of the internal composition of the 82 projects described in Annex D, Table I: 1/

1. Fourteen of the projects (active and in negotiation) have a credit component. If one excludes the $143 million destined for the forestry sub-sector, it is found that approximately $53 million of the remaining $202 million (25%) is for agricultural credit. Of this, over 60% is either designated by the project or scheduled by the GOH to go to the agrarian reform sub-sector; another 25-30% is for medium size cattle and dairy producers; and only 10-15% is destined for small to medium independent farmers.

2. Again excluding the forestry sub-sector, but including credit, 50 to 60% of all external financing is for projects related primarily to assisting agrarian reform created collective farms.

3. The external financing shown for eleven irrigation, drainage and flood control activities (only 2.9% of total financing) is almost entirely for feasibility studies and institutional development. To the extent that these projects are successfully implemented, they will produce a requirement for major resource flows in the coming years.

4. In a relative sense, the field of activity with least external assistance in relation to potential need is agricultural education. There are no funds programmed under this heading for assistance to the university level for Agricultural Education.

1/Exact figures in this regard are difficult to come by and the conclusions should be regarded as orders of magnitude.

X. A.I.D. PROGRAM STRATEGY

1. GOH Priorities - It is clear that the focus of the Government of Honduras is now on the development of rural Honduras. New rural health and educational programs have been developed. Rural infrastructure and agricultural development programs have been greatly expanded in recent years. In summary, the Government of Honduras, supported by external assistance agencies, has demonstrated a commitment to rural development and specifically to the development of the country's agricultural sector.

It is also clear that the focus of the Government of Honduras is on the rural poor - especially the beneficiaries of the agrarian reform. The central thrust of GOH strategy for the agricultural sector during the past four years, i.e., the principal consideration around which individual strategy decisions have been taken, has been the implementation of agrarian reform.

There is no question but that the stated objectives and concerns of the Honduran Government provide a suitable framework in which A.I.D. can provide significant financial support. The issue is no longer whether the GOH will undertake a serious agricultural development effort, emphasizing greater equity, but how such a development effort should be implemented to maximize its impact.

2. Target Groups - Chapter VIII, Target Group Analysis, Profiles and Related Constraints, described in detail the three target sub-groups, i.e., agrarian reform farmers, traditional farmers and rural laborers, to which A.I.D. financial support can potentially be directed.

Over the past five years, the agrarian reform program has been accorded a high priority for Government resources. There is little doubt that the Government will continue to provide high priority for this program. As it has been developing, it appears clear that the agrarian reform program is not meeting its quantitative objectives and will not have as broad an impact on the intended target group as expected. Realistically, there is a need, therefore, to consider other solutions for landless laborers and for small-scale farmers with less than five hectares, i.e., the limit set by the Agrarian Reform Law for potential beneficiaries of that program. Moreover, small farmers with 5-35 hectares have been receiving virtually no services with the exception that a small portion has been receiving some credit. It is important that attention be focused on this group whose income generally falls well under the poverty level and who have considerable productive potential.

Most governmental programs, in particular agrarian reform, that effectively and significantly increase the standard of living of the

target population are in the nature of pilot projects and are too costly to be replicated on a wide scale. The basic development issue facing Honduras is how to increase efficiency in the use of resources to reach the mass of population with services and opportunities needed for their development.

3. Objectives 1978-1983 - Taking into account the combination of: (1) priority target groups, and the opportunities and constraints relating to them; (2) the broad range of policy/strategy issues -- many of which are matters where outside assistance is not called for; and (3) the favorable overall external assistance situation, the question was posed of where A.I.D. assistance could be most usefully concentrated over the 1978-1983 period. The conclusion was that A.I.D. efforts should be directed to assisting the GOH, primarily, but also through the GOH, sector development related non-governmental entities: 1) to improve their capacity to effectively and efficiently deliver goods and services which enhance income and employment opportunities for all three target sub-groups; 2) to develop information, inputs and more appropriate technology in a form and content which can bring about relatively rapid increases in target group income and employment; 3) to improve the Government's capacity to identify policy alternatives and to determine the likely costs and benefits of specific decisions; and 4) to expand non-farm employment opportunities, principally for landless laborers.

The first objective is based on the general recognition that the absorptive capacity of Honduras to use aid effectively and efficiently is still very much limited, but international financing agencies and donors, including A.I.D., have shown a disposition to expand aid and assistance significantly, and substantially. The human resource base for development is small. The institutional structure for development is weak, largely uncoordinated and partly duplicative. How much more development activity can be loaded onto a rather fragile governmental structure -- fragile even in comparison with most other Latin American governments? Absorptive potential must be increased. A.I.D. can help bring this about. When this occurs, there will be increasing opportunities for effective assistance for all donors to the target group.

The first objective is also based on the proposition that given the extreme poverty, particularly in the rural sector, the Government of Honduras must bring sufficient resources to bear efficiently, and in timely fashion to assure that the condition of the poor does not deteriorate, marginally, from year to year.

The second objective recognizes the current lack of information, inputs and technology which are appropriate to the situation of the target group. The third objective recognizes the importance of overall planning and analysis to ensure that individual policies, strategies and programs are compatible with each other. The fourth objective

recognizes the necessity for considering off-farm employment as a partial solution for assisting landless laborers not now being reached by the agrarian reform.

a. Improved Delivery Systems Objective - In support of this objective, A.I.D. should:

(1) Continue to provide support wherever feasible for the Agrarian Reform effort which maintains a high priority in the Government's strategy and directly benefits the poorest of the rural population, i.e., landless laborers and farmers with less than five hectares. It should be prepared to assist, if requested, in the development of new delivery systems, both governmental and private, e.g., second level organizations which can provide services - inputs and marketing - for agrarian reform farms and eventually release government resources to expand the program. In support of an existing government-operated delivery system, A.I.D. resources for credit, farm planning advisory services, and some training are already in the pipeline. The new A.I.D. resources required over the next roughly three years for the reform subsector will be for policy analysis and organization improvement. Subsequently, A.I.D. could consider providing additional credit resources for the reform effort, if needed.

(2) Encourage the Government to begin to deal effectively with the vast numbers of small farmers who operate plots of from 1-35 hectares and who generally have received no services from the Government. To service this group, as with the reform groups, low-cost experimental delivery systems must be devised. These systems could involve the use of para-professionals/volunteers, demonstrations, and multiple service cooperatives, eventually covering large areas of the country. Once developed, the installation of the delivery systems would proceed gradually, eventually covering the entire country. Considerable resources will be required for this effort over the next five years, including funds for small farmer credit.

(3) Consider the possibility that sector advances will result in the relative worsening of the position of the smallest-scale farmers, those farming plots of less than 2-3 hectares frequently on hillsides and who characteristically sell a portion of their production and buy it back at higher prices. Increased production nationally and quite possibly lower, attendant real farm-gate prices for basic grains could generate this effect. Special attention will need to be given to the problems of these farmers who, while constituting a subject of the agrarian reform program cannot, for the most part, expect to benefit from it under current conditions in the near future. Additionally, the prospects for hillside agricultural techniques involving minimal terracing and some crop diversification, including tree crops, should be explored.

(4) Expand GOH programs in small-scale infrastructure which provide social overhead capital and productive assets to the agrarian reform and traditional farmers and which may provide employment opportunities to landless laborers. Attention must be given to developing mechanisms for the identification of specific needs at the local level and for channeling resources to meet those needs.

b. Improved Information, Inputs and Technology Objective - In support of this objective, A.I.D. should assist the GOH to begin and/or expand its efforts in both agronomic and mechanical technology research and development directed at alleviating target group production constraints.

c. Improved Policy Analysis Objective - In support of this objective, A.I.D. should assist the GOH to expand its capacity in water resources management generally and to consider the implications and alternatives associated with several other areas such as the decentralization/regionalization of delivery systems, price regulations and/or supports, appropriate technologies, and production targets.

d. Expanded Off-Farm Employment Opportunities Objective - In support of this objective, consideration should be given to possible A.I.D. support for small industries development, including the development of village-based industry, and the possibility of increasing the labor intensity of rural works projects, e.g., road construction.

4. Program Composition - This section discusses the possibilities and desirability of A.I.D. support to activities in 7 major areas directly related to the agricultural sector. It should be noted, however, that much of the on-going and planned A.I.D. assistance to Honduras in health, education, urban and municipal development and nutrition has a rural focus. In a sense, the A.I.D. program in its entirety constitutes a rural development program. There are, consequently, opportunities for mutually supportive activities among the projects and programs in the above mentioned sectors. Some of these were explored in the Summary Strategy Statement of the May 1978 DAP document. Where appropriate, they will also be mentioned in this Chapter even though the preceding Chapters of this Assessment, given the scope of work under which it was undertaken, i.e., an agricultural rather than a rural development focus, do not deal with the specific items.

It should also be made clear that it is unlikely -- and might indeed be unwise -- that A.I.D. become involved in every activity mentioned at least in the immediate future. A major consideration in this regard is the willingness on the part of the GOH to reconsider and possibly modify certain of its current policies and strategies. Another consideration, of course, is the danger of spreading the A.I.D. effort too thin to have impact. In this regard, it will be noted that a very considerable part of what is proposed for A.I.D. activity over the next five years is

a continuation of on-going program and projects. One way of obtaining impact is by persevering over time in dealing with a specific problem, e.g., the shortage of specialized personnel.

A further consideration is that mutually supportive activities in policy analysis, human resources development, organizational improvement, and program extension will be required to achieve A.I.D. objectives in the agricultural sector. Activities in isolated areas are likely to be ineffective.

The specific areas for potential A.I.D. involvement are as follows:

a. Human Resources Development [1/] - This is probably the major under lying constraint to development of the sector or any of its component parts. The constraint is both quantitative and qualitative, with the emphasis probably on the latter.

A.I.D. as well as many other donors have already been active in this area in terms of financing out-of-country training, in-service training, middle level agricultural technical schools and farmer traini Nevertheless, there is continuing need and a useful role for A.I.D. assistance. Specifically:

(1) The School of Agriculture of the University of Honduras (CURLA) needs to improve the quality of the instruction given to its students and to develop its facilities to cope with a rapidly growing enrollment. It will need considerable external assistance if it is to resolve these problems and realize its potential.

(2) Upgrading quality of public sector entities by providing out-of-country specialized training to their personnel is -- and will continue for a long time -- to be a priority requirement. Also, there may be some possibilities for expanding the base from which the sector can obtain specialized personnel by providing agriculturally oriented out-of ry training to civil engineers, biologists, economists and others. Any A.I.D. strategy should provide for continuing an expanded scholarship program.

(3) There may be some possibilities for improving the facilities, course content, teaching staff, etc., for training public and private sector personnel dealing with rural women. A relatively small amount of effort and resources placed here might pay large dividends over the long

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1/ Potential A.I.D. involvement considered under this heading is limited to formation of formally trained professional and technical personnel and to farmer training. Particularly with regard to the former, the basis for proposed programs is effective demand, rather than need. Increased use of para-professionals is considered under programs or projects designed to use this human resource element.

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term.

(4) With regard to the remaining components of a human resources development program for the agricultural sector, i.e., in-service training and farmer training, direct A.I.D. input should be provided if needed. Current organizational constraints should be dealt with under the next element of Program Composition to be discussed.

b. Organizational Improvement - With the already large, and programmed to be substantially increased, amount of resources (domestic and external) destined to flow into the agricultural sector via public sector investment, the need for efficient organizational arrangements to manage these resources is increasing. A.I.D. is already providing considerable assistance in this regard; however, as with most institutional development type work, this must be regarded as a long and continuing effort over time. Thus, A.I.D. strategy should contemplate continuing and expanding its assistance in organizational improvement.

The range of needs and opportunities is great, and while some degree of flexibility is needed to take advantage of targets of opportunity, A.I.D. assistance under this heading should probably focus on the following priority areas:

(1) Entities and units within agencies concerned with planning, budgeting, and coordination at the sectorwide, individual agency and regional levels.

(2) The administration of credit programs.

(3) The development and/or improvement of separate organizational arrangements through which needed services and inputs can be provided, respectively, to small and medium independent farmers and to agrarian reform group farms. These should be conceived so as to have impact in the sense of reaching large numbers of farmers in both target groups. In addition to other things, this will call for the training and use of paid para-professionals and of campesino volunteers. Substantial resource inputs will be required.

(4) Improvement of marketing support activities, including basic grains, control of post-harvest losses, development of export and processing possibilities, price stabilization, and the creation of a suitable policy-oriented marketing entity.

(5) Improving the policy and planning structure and effectiveness of key Honduran institutions involved in selected areas of water management. This should include expanding, improving and unifying the current program of basic data collection; undertaking selected oper-

ational pilot activities; and providing operational support to key GOH entities involved in planning and coordinating water activities on a national scale.

(6) Reviewing the organizational and administrative systems of INA, along the same lines as assistance previously provided to the MNR and currently to the BNF, with a view to undertaking an administrative reorganization which could improve the efficiency of land redistribution, and provide better organizational support to beneficiary families.

In connection with certain of the above areas indicated for potential A.I.D. support within the context of direct assistance to the agricultural sector, attention should be given to the possible supportive role of on-going and perhaps future assistance to the National Autonomous Municipal Bank in connection with the development of agricultural market towns and service centers. Also, to the extent that a future A.I.D. program is undertaken for the urban sector and that across-the-board regional planning is a component of that program, the relationships and mutually supportive possibilities between support for regional agricultural planning mentioned above and the across-the-board regional planning should be supported.

c. Technology Development Adaptation and Delivery - A.I.D. is already involved in financing development work in light capital technology for farming operations and is currently considering assistance needs for the agricultural research program. A.I.D. strategy should put greater emphasis on the light capital technology program, particularly in strengthening and expanding the production and distribution elements with the objective of achieving significant impacts in the target sectors. Support may also be needed in accelerating the research program and for forging strong linkages with the light capital technology program and the delivery systems. Technical assistance and training are appropriate for A.I.D. assistance at this time and perhaps support for expansion of personnel in some areas.

In the area of delivery systems, much work is called for. A.I.D. support in development of some of the institutions involved in delivery is already on-going. Some additional assistance might be called for in developing a more comprehensive plan for delivery systems improvement and for experimentation with different organizational approaches in this area which is a key link with the target groups.

In the interests of job creation for rural landless labor, as well as creating additional non-farm employment in rural areas for small farmers and women, active consideration is being given to expanding the scope of activities of the Small Farmer Technologies project and including development of village-based light industry generally, e.g.,

brick manufacture, textiles, lime, food processing, in addition to farm implements. This would involve developing an industrial development advisory services capacity with a light capital technologies orientation. A.I.D. should be prepared to finance the credit needed to stimulate such development if it is not readily available from other sources.

d. Agricultural Research - The steps the GOH is taking to strengthen and reorient its agricultural research program are described in Chapter VI.B. of the Assessment. A project paper proposing A.I.D. support for this effort is nearing completion and will address the shortfalls in the present research strategy identified in that Chapter. This is believed to be a priority area for A.I.D. assistance. The strengthening of the GOH agronomic research capacity and coordination and the development of a research strategy in support of production objectives compatible with marketing prospects is vital to development of the agricultural sector. Considerable emphasis should be placed on research and development which is aimed at maximizing farm family employment and increasing farm income.

The approach to A.I.D. assistance should encourage close coordination between agronomic and mechanical technology research and development. It should also place priority on development of adaptable technological packages for use of new and expanding delivery systems for small farmers and for agrarian reform farms.

e. Small Farmer Infrastructure - The concept of integrated agricultural infrastructure investment packages developed on a zonal basis as a major element of regional planning has been discussed in several chapters of this Assessment. A.I.D. strategy should include provision of support and incentives designed to translate this from a concept to a reality. One possible way of accomplishing this objective would be to create a comingled fund against which regional offices could draw for approved investment packages which met pre-set criteria.

f. Auto-Consumption Nutrition Improvements - Several attempts have been made in the past -- and there are some minor on-going activities -- designed to assist the small farmer in producing a more abundant and varied set of foods for his own use, e.g., the family vegetable garden. Other related programs, usually on a small scale, have involved chicken and rabbit raising and similar activities. Many of these programs have had limited success because of the need for individual technical assistance and supplementary inputs. Nevertheless, A.I.D. strategy should include a component which attempts to further these objectives.

One possible initial action which might build on existing facilities and avoid some of the problems in previous projects would be to develop the tree nurseries that exist in each of the 7 regional offices

of the MNR to a point where they could provide on a grant basis a suitable package of food tree seedlings to large number of small farmers. The costs would not be great; the implementation relatively simple; and the potential benefits quite large.

g. Credit - At the appropriate time, A.I.D. should be prepared to provide new and additional resources to the BNF for lending to small and medium independent farmers as the BNF successfully completes its reorganization and shows evidence that it is taking steps to increase its portfolio in this regard. Subsequently, A.I.D. could consider providing additional resources for the reform effort, if needed.

5. Time Frame for Provision of Resources - It should be noted that many of the activities described above are already part of ongoing, A.I.D.-supported programs, especially in the areas of human resource development, appropriate technology, credit, and organizational improvement. The activities contemplated in agricultural research and water resources management are in an advanced stage of planning. Most of the other activities may be ready for inclusion in the proposed 1979 Agriculture Sector II Program.

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A. BASE GROUPS

1. Number and Size

At the present time there are 907 base groups of the Agrarian Reform. They are sometimes referred to as Unidades de Producción de Base (UPB's). The total membership of these groups has been most recently calculated at approximately 32,165, 1/ compared with 45,000 originally settled. A recent survey of 180 groups found the average size of member families to be 5.2, 2/ which would indicate a total current population of 167,000.

Table 1 represents a complete breakdown of the 907 groups according to region, affiliation, number of groups and members, and total landholding.

Following the formation of groups and their settlement on the land, there is usually a process of attrition as a certain proportion leave the groups either because of disenchantment with economic prospects or for other reasons. The reduction in size is often advantageous since in many cases the original group was excessively large in comparison to the amount and quality of land. In the Bajo Aguán, however, where the attrition rate has been around 75%, 3/ many of the reform groups have insufficient supplies of labor.

Groups also add to or replace membership in two ways. One is the addition of outsiders, which occurs chiefly in groups with relatively satisfactory landholdings in relation to size of the group and hence relatively substantial labor needs. In some cases an entire group disintegrates and is replaced on the same land by INA with a completely or essentially new group.

The other means of adding strength to the groups is the incorporation of the sons of members as they reach 16 years of age. This will become an increasingly important source. While reform groups generally have smaller families on average than independent farmers 4/ this appears to be because on average they are young families, which have not achieved full size but are rapidly growing.

It is difficult to estimate the extent to which the number of base groups and agrarian reform beneficiaries will grow in the future. Much depends upon the rate of Government action and presumably the nature and direction of continuing campesino pressures on the Government. The two

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1/ INA, Sept. 1977.

2/ ATAC baseline survey, Vol. I (Spanish) p. 35.

3/ As of Jan. 1, 1977, INA reported settling 14,555 campesinos in Bajo Aguán. As of September 1977 it reported 4,377 as the number of campesino members of the group. The overall attrition may be greater than the differences between these figures owing to additional recruiting in the first nine months of 1977; however, informal reports indicate that in the past year the rate of desertion has dropped sharply.

4/ ATAC baseline survey, Vol. I (Spanish), pp. 35.

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potential projects of greatest size are in the Valle de Aguán and Valle de Sula, in which COHBANA 1/ considers that additional reform groups might be settled to grow bananas on some 10,000 acres (5,000 in each valley) which would accomodate about 2,400 beneficiaries. If each were organized in the fashion of the Empresa Asociativa Isletas, this would mean the organization of two large groups. INA has made no decisions, however, with respect to these developments or the form of organizations that might be adopted. In addition to bananas, there are many other possibilities for forming new groups in these two valleys for the production of African palm, citrus, and other products.

In the settled areas of the country the annual rate of increase in number of base groups can probably be expected to be modest. This will be due in part to the lesser availability of land of high potential and the desire of the Government to digest and consolidate what has already been done. In addition, conversations with campesino organizations indicate that their pressures for the immediate future are likely to concentrate on seeking additional land for base groups which already have some than for new groups.

There are, of course, possibilities for opening up new areas of the country to colonization but this takes time.

2. Types of Groups

a. Groups without personería jurídica

The great majority of groups organized since Decree No. 8 are groups without personería jurídica. These groups can be referred to generally as asentamientos. They can also be subdivided as follows: (1) sub-seccionales of ANACH (National Association of Campesinos of Honduras), 387; (2) Ligas Campesinas of UNC (National Union of Campesinos) and UNCA (National Union of Authentic Campesinos), 217; and (3) Independent groups, 75. 2/ Some of the independent asentamientos that are electing to form cooperatives style themselves "Pre-cooperativas" 3/; some of these are also affiliated with FECORAH (Federation of Cooperatives of the Agrarian Reform). None of these asentamientos is individually of major size; a total membership of more than 100 is a rarity; some have as few as seven members; and the average number is about 30.

With respect to organization of the work of the asentamientos, planning is usually initiated by the Junta Directiva but debated, modified and approved at least in general outlines by the Asamblea General. In highly developed projects such as in the Bajo Aguán the planning is done essentially by INA technicians with little group participation.

1/ Corporación Hondureña del Banano.

2/ There are some other ligas campesinas, subseccionales and other organized groups not included in these estimates that either have no land or have not received preliminary titles from INA.

3/ There were 32 such groups in September, 1977, according to DIFOCOOP records.

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The average asentamiento has at least rudimentary accounts. These are rarely adequate to develop data on total income and total expenses, and it is rare to find a balance sheet, profit and loss statement, or trial balance prepared for any period. While asentamiento members have usually a pretty close idea of the size of their debts, it is desirable to go to BNF and other creditors to learn exact balances and degree of delinquency and refinancing. Rarely are the part time services of an accountant employed. In the Bajo Aguán INA maintains a centralized accounting system but this appears to be more for project administration than to maintain complete accounts on each group as a distinct enterprise.

One of the most important documents maintained by an asentamiento is a record of number of days worked by each member. If money (generally BNF bank credit) is available, the asentamiento will usually pay the individual currently about L.2 or L.3 per day worked, which is variously viewed as a wage, subsistence allowance, or drawdown on anticipated profits. In any case this record of days worked is used at the end of a farming season as a basis for dividing the proceeds of the harvest. In theory, the proceeds divided are those that remain after repayment of loan amounts due on both short and long term credit. This excess is regarded as the profit. It may be wholly in cash or kind or a mixture of the two; all or a portion of corn, beans and other basic foodstuffs are generally distributed in kind at least to the extent of average family needs. The process of debt collection, however, often does not operate effectively at this point in time, so that the entire harvest or its proceeds may be distributed and the loan defaulted. Further, even in years of excellent harvest, there is rarely any decision to save a portion of the proceeds to defray costs for the next planting or to establish reserves for replacement of machinery or for other investments. Almost no asentamientos maintain a bank or savings account of any kind. Finance planning is almost always based on the obtention and repayment of credit.

b. Cooperatives

The approximately 210 agrarian reform cooperatives organized by base groups will doubtlessly grow in the future as many asentamientos have indicated a desire to acquire personería jurídica in this form. The achievement of personería jurídica is particularly important for the independent groups in view of the difficulties of obtaining credit if this is lacking. The ANACH groups can use the endorsement of ANACH, which has personería jurídica, and it is for this reason primarily that UNC is applying for such legal status.

The practice of forming cooperatives as the organizational form of collective farms in Honduras predates Decree No. 8 by a number of years. By far the best known agrarian reform cooperative is Las Guanchías, which was formed in 1964 by 58 members, essentially former employees of United Fruit on land abandoned by the company and taken over by INA. It has grown to 134 members on 1,077 manzanas. It has become a large undertaking with millions of Lempiras in capital and, in addition to bananas, has undertaken livestock, poultry, and pig programs, together with the provi-

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sion of consumer goods, housing and credit to its members. There are five other cooperatives in the same zone constructed on the same model. A criticism of these cooperatives is that the members have kept the benefits to themselves rather than share them by significant additions to memberships. The work force reportedly consists 90% of non-members. It is also true that most of the outside workers are hired for short periods of time, usually less than 50 days a year.

About 50 small cooperatives were organized throughout the country in other agrarian reform projects prior to or about the time of Decree No. 8. While INA provided the impetus for this, the majority of the cooperatives later affiliated with the Federation of Cooperatives of the Agrarian Reform of Honduras (FECORAH), an organization described later in this paper. These cooperatives now tend to be treated in essentially the same manner as the newer groups under Decree No. 8 and are usually intermingled on INA lists of reform groups with the newer ones. 1/

Cooperatives are organized under the cooperative law, which enable the group to operate and contract debts with liability limited to cooperative assets. 2/. They also have the right to import for productive purposes without payment of duty and to exemption from certain taxes. The cooperative members are guaranteed a democratic organization based on one member, one vote. The obligations are to maintain the cooperative form of organization, to contribute to its capital, to establish reserves for education and other purposes, and to permit inspection of its affairs and examination of its books by the Dirección de Fomento Cooperativo (DIFOCOOP), an organization described later in this paper. The organization of a cooperative must be approved by DIFOCOOP.

UNC and ANACH have opposed cooperative organization for their groups on the grounds that for all practical purposes such organization is unnecessary; that they are and should remain within the organizational structure of the campesino organizations; and that the unity and independence of their movements would be impaired by subjecting their base units to the regime of the cooperative law and the control of the Governmental organization administering this law (DIFOCOOP). Having spent some years confronting the Gonvernment over land reform and competing with FECORAH (The Cooperative Federation of Land Reform groups), it is understandable that both UNC and ANACH are hesitant to fall into what they conceive to be a cooperative legal trap that could weaken their movements.

c. Empresas Asociativas de Campesinos

The agrarian reform law of 1975, in addition to providing for cooperatives as a form of organization for the execution of the Agrarian Reform

1/ There are a few other collective farms, all organized as cooperatives, that predate Decree No. 8 such as El Esfuerzo in El Paraíso, organized on land purchased by a group of campesinos. They are normally affiliated with FECOAGROH.

2/ The land acquired from INA, however, cannot be alienated.

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Program, also made provision for the organization of a new type of entity, to be known as an Empresa Asociativa de Campesinos. 1/

This form of association confers personería jurídica just as does the cooperative. The principal difference embodied in the Agrarian Reform Law is that cooperatives are organized by application to the Dirección de Fomento Cooperativo (DIFOCOOP), under regulations of the Ministerio de Economía, and are subject to inspection and auditing by DIFOCOOP, whereas the Empresas Asociativas de Campesinos are formed by application to INA, registered by the Ministry of Natural Resources, and governed by status proposed by INA and approved by MNR. Thus, this statutory provision could be used to create an agrarian reform association without reference to the conditions of the law of cooperatives. The only limitations are rather general ones such as that distributions of profits must be in relation to contribution and that contribution, should be "essentially" in terms of work

The rules governing empresas asociativas de campesinos have been amplified by the Estatuto de Empresas Asociativas de Campesinos, promulgated February 24, 1976. The Estatuto contains a number of specific regulations, the following being of particular importance in differentiating between an EAC and a cooperative·

1. The EAC's are prohibited from engaging in partisan political activities or activities of a religious nature. (Article 4)
2. The EAC's are permitted to import machinery and other goods for productive use duty free (a privilege also held by cooperatives).
3. INA is charged with exercising "la más estricta vigilancia" (strictest watch) over EAC's to assure conformance with the Agrarian Reform Law and the Estatuto. (Article 6).
4. Members are to be periodically paid for their work at not less than the minimum wage or the highest salary normally paid in the zone in which the EAC operates. (Article 8).
5. Members are also to receive annually 20% of the profits. The remaining 80% are to be used for capitalization, social development reserves, etc. (Article 63).
6. Persons unable to work cannot be members (Article 35) and must be removed from membership when incapacitated (Article 41).
7. Members are not permitted to work for their own account or away from the EAC's in the same activities as the EAC. (Article 38)
8. A member can resign with 30 days notice (Article 42) but this can be deferred if he is indebted to the EAC (Article 43).
9. The supreme body is the General Assembly (Article 68); the Junta Directiva is the highest executive body (Article 85); and the Secretary General (a member of the Junta) is the highest executive member, is responsible for the operation of the EAC, and is its legal representative.

1/ Articles 111 to 125 of Decree 170. All organizations formed under these provisions of law must bear in their titles the words "Empresa Asociativa de Campesinos" or the abbreviation "E.A.C.".

10. There is a Consejo de Vigilancia y Disciplina to supervise finances and maintain discipline (Article 101 - 110).

11. Committees of Production are established to realize the work of the EAC through work groups under the charge of members it designates (Articles 111 - 119).

12. EAC's can be of two types: (1) production and (2) transformation and services. The latter are to be constituted by the former (Articles 16 and 135). Federation and confederations are also envisaged (Article 139-141).

It may be observed that the Estatuto appears to contemplate organizations of some scale in which detailed organization and subdivision of functions is feasible. While the Estatuto requires only a minimum of five beneficiaries of the agrarian reform to constitute an EAC, the organizational requirements appear rather cumbersome for the carrying on of the affairs of smaller groups. In practice the smaller EAC's modify and simplify their organizational structures and methods and operate in a less formal style.

Up to the present time the number of Empresas Asociativas de Campesinos is twenty-four. Of these practically all are individual base groups.

There exists, however, one empresa asociativa de campesinos that has been formed with about 1,300 members embracing eight basic production units --namely the Empresa Asociativa de Campesinos ISLETAS (EACI). EACI is a major project organized and assisted by INA in collaboration with COHBANA (Corporación Hondureña del Banano), and involves approximately 5,000 acres planted in bananas, which was formerly operated by Standard Fruit Co.

The "Empresa Asociativa de Campesinos" form of organization is not looked upon with favor by any of the major campesino groups (ANACH, UNC or FECORAH). They all consider that it is an instrument contrived by INA to retain Government control over the reform groups. In particular, they regard EACI as an entity which, despite its democratic trappings, is essentially state controlled and in which members consider themselves either employees of INA or the Empresa rather than as owners of the soil. In addition, they feel that the concept of the EAC has ideological roots in foreign programs with which they are not in sympathy.

Isletas, organized on a large banana plantation with 1,300 members, would be a special case regardless of the legal form of organizations. The very size of such an organization would necessarily reduce the average member's sense of participation compared with what he would have in smaller groups. At the level of the elected representatives of the Empresa, however, there does appear to be a sense that the Empresa is running its affairs. Both the officials of the Empresa and those of COHBANA, which provides technical assistance, make a strong point that COHBANA's role is an advisory one and that the power of decision rests with the Empresa. Further, both the Empresa and the COHBANA group agree that it is the representatives of the Empresa that actually direct the work. Obviously, the role of COHBANA is very large in the planning of the activity, in overseeing technical operations, and

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ultimately in marketing the product. However, it is hard to see how a campesino organization of this size, regardless of legal form of organization, could operate much differently at this stage in its development. INA, though it would have the right to intervene in the event of mismanagement, does not involve itself in the management of the Empresa, which looks entirely to COHBANA, and not to INA, for guidance.

The members of Isletas receive L.6.00 per day for their work as well as free housing and some other fringe benefits. This is not as large as the L.10.00 per day paid by the banana companies. 1/ However, ultimately, as the Empresa is able to earn enough to repay COHBANA for development expenses, there will hopefully be profits to distribute. Further, the Empresa is entering into projects such as basic grains and pigs entirely independently of INA and COHBANA.

The organizational plan of Isletas would appear in one respect to be considerably superior to that of its nearest equivalent, the large Las Guanchías, in contrast, has relatively few members, who reap very substantial benefits, while the majority of the labor is hired for wages and does not enjoy the benefits of cooperative membership. There is, however, no legal reason why a cooperative could not be organized in accordance with the Isletas membership principle rather than that of Las Guanchías.

Leaving Isletas aside, the smaller Empresas Asociativas organized by INA are not distinguishable from small cooperatives or groups without personería jurídica. INA made over a short period an attempt to organize Empresas Asociativas in a few areas, especially La Masica. The plan in La Masica was to have, in addition to the base unit empresas, a second degree empresa to render services of machinery, marketing, etc. to all the groups. For a time this plan was widely heralded as a major project that would set a pattern for the future. However, the plan was never given much support by INA or by other Government organizations, and the campesinos were left with a second degree empresa which still holds meetings but has no program in operation. The few efforts made to establish machinery pools, etc., were badly planned and executed owing to the combination of limited campesino capability and spasmodic, uncoordinated Government support. The impression is that INA has simply abandoned the concept of the Empresa Asociativa, and it is apparent that the existing empresas would very readily change to cooperatives or some other form of organization if this would mean involvement in a program with substance to it. In the major development area of the Bajo Aguán, except for Isletas, INA has organized no Empresas Asociativas whatever and has no intention of doing so.

It is difficult to escape the conclusions that the concept of the Empresa Asociativa should be allowed to die. There are a sufficient number of organizational complexities in the reform movement (cooperatives of

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1/ Isletas is achieving production per acre of about 75% that of the fruit companies. There are apparently a number of factors which make it unlikely that it would achieve parity with the fruit companies in productivity.

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FECORAH, ligas campesinas, subseccionales, cooperativas independientes, etc.) without having one more form of organization to impede the possibilities of collaboration among the groups on regional and zonal bases.

3. Economics of Collective Farm Organizations

Various reports indicate that about 90% of all reform groups farm at least a portion of their land collectively. 1/ About half of these operate on a mixed basis with both collective and individual parcels.

The ATAC survey demonstrated that the average asentamiento member has a preference for the collective system of farming, which coincides with the preference of the Government and campesino organizations. Of nearly 1,000 members interviewed, 63% stated they preferred collective farming; 11.4%, mixed farming; 25.1%, individual farming; and .5%, no opinion. A strong factor creating incentives for collective farming is obviously the superior possibility of obtaining credit. The average individual producer with 3 to 6 manzanas has almost no chance at all. Most asentamientos (74% in the ATAC survey) received loans in 1975. The more restrictive credit policies of BNF during 1977 have reportedly resulted in some asentamientos reverting completely to individual operation--though scattered field reports suggest it cannot be a widespread phenomenon. In any case, the reduction in credit, as well as past failures in collective farm operations, has probably eroded to some extent expectations from credit farming. No study has been made to determine whether, if credit were as easily obtained individually, there would be a significant shift of preference to individual farming.

Although, collective farming is the preferred method for agrarian reform groups, it has long been evident that there are serious problems in the effective operation of such farms and that results thus far have been unsatisfactory. The following data from the ATAC baseline survey point out some of the dimensions of the problem as it was observed for the farm year 1975 in the North, South and Olancho only.

It is interesting to note from the figures that in value terms collective farms hire about 20% of the labor that they use. The total labor cost (including market pricing of unpaid family or member labor) amounted to 26% of value of production and 35% of total expenses on collective farms, compared with 35% and 53%, respectively, on farms of individual producers with credit. In other words the collective farms are less labor intensive.

1/ ATAC. Encuesta de Pequeños Agricultores y Grupos de la Reforma Agraria. Año Agrícola 1975, Vol. I, p.44-46.

1. The following figures show the average results of the 166 collective farms surveyed: 1/

Gross income on crops:		
Production basic grains and beans	L. 15,478.0	
Other annual crops	8,014.3	
Permanent crops	2,757.5	
Gardens	14.3	
Total crop production		L. 26,264.1
Gross income and capital gain on animals and animal products		718.9
Forestry and miscellaneous production		1,566.2
Other income		414.2
Total gross income		L. 28,963.4
Expenses		
Labor of members: 2/		
Used in production of crops	5,778.0	
Used in production of animal income	51.5	
Other uses	161.1	
		L. 5,990.6
Labor of non-members:		
Used in production of crops	1,472.0	
Used in production of animal income	5.7	
Other uses	11.5	
		L. 1,489.2
Other expenses:		
Crop expenses	13,293.2	
Animal expenses	198.2	
Other and general expenses	1,263.6	
		L. 14,755.0
Total expenses		L. 22,234.8
Net Income		L. 6,728.6
Net income plus value of members' labor		L. 12,719.2
Net income per member (including value of members' labor, whether paid or unpaid)		L. 515.0 3/

1/ The average collective farm interviewed has an average of 24.7 members during the year.

2/ Calculated at L. 2.50 per day whether or not paid.

3/ There are three principal reasons for the difference between this figures and the L. 430.1 shown as income from collective farming in item (2) below: (a) some groups paid themselves more than they earned by using bank credit; (b) other groups paid themselves less than they earned by capitalizing part of their income through repayment of principal on loans for capital expenditures; (c) distribution of profits do not exactly correspond with agricultural years.

2. Comparison of results between reform groups members farming at least in part communally with those farming entirely on an individual basis:

	Income per family (average)	
	Collective	Non-collective
	(656 members)	(64 members)
Income from individual farming	L. 242.6	L. 502.0
Income from collective farming	430.1	8.2 1/
Sub-total, farm income	L. 672.7	L. 510.2
Other family income	172.6	230.8
Total	L. 845.3	L. 741.0
Average number manzanas per member	6.3 mz.	4.4 mz.
Average farm income per member per manzana	L. 107.0	L. 116.0
Average number manzanas cultivated per member	4.4 mz.	3.1 mz.
Average farm income per member per cultivated manzana	L. 153.0	L. 164.0

The figures suggest that in proportion to land held and cultivated there was not much difference between results in the two methods of farming. If one takes into account that the average collective group received over L. 26,000 in credit in 1975 (over L. 1,000 per member, or more than the average member earned from all sources) and that much of this is of doubtful recuperability, the comparison becomes unfavorable to the collective group. Groups in which each member farms individually and in which there are no collective activities receive no credit.

1/ Mainly fruit and firewood gathered from collectively held land for home consumption.

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3. The average income of small traditional farm families compared as follows with members of collective groups in the area surveyed:

	Collective group families	Individual Farm Families: With BNF Credit: All	With BNF Credit: Those with farms of 6 mz. or less	Without BNF Credit: All	Without BNF Credit: Those with farms of 6 mz. or less
1. Income from individual farming (individually farmed parcels and house lots in the case of reform group)	L. 242.6	1,152.4	682.2	1,194.0	612.6
2. Income from collective farming	431.1	-.-	-.-	-.-	-.-
3. Other income 1/	172.6	552.6	506.6	454.5	559.8
Total income	L. 845.3	1,705.0	1,188.8	1,648.5	1,172.4
4. Average landholding (Mz)	6.3	9.0	4.1	8.8	3.8
5. Average landholding under cultivation (mz)	4.4	6.2	3.7	5.1	3.1
6. Average males in family over 13	1.1	1.5	1.6	1.5	1.6
7. Farm income (1 plus 2) divided by average land holding (4)	L. 106.9	128.0	166.4	135.7	161.2
8. Farm income (1 plus 2) divided by cultivated land (5)	153.1	185.9	184.4	234.1	197.6
9. Farm income (1 plus 2) divided by average number adult males in family (6)	612.4	768.3	426.4	796.0	382.9
10. Farm income per manzana per adult male in family (7 divided by 6)	97.2	85.3	104.0	90.5	100.8
11. Other income per active male over 13	156.8	368.4	316.6	303.0	349.9

1/ Principally work on private farms of others.

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These figures demonstrate that the reform group families have significantly lower incomes than individual farmers, even those with landholdings smaller than the average per family landholding in the asentamiento. However, the average asentamiento member's family is different from an individual producer in that each adult male becomes an independent member of the asentamiento at age 16. Therefore, the average number of active males in an asentamiento member's "family" is only slightly greater than one, whereas in the individual producer's family, where sons form a part of the family economic unit for a longer time, it is 1.6. 1/ If, therefore, we divide total income by number of active males (line 9), we find that in terms of farm income per active male, the relative income of the asentamiento family shows up much more favorably. If we go further and calculate the income per manzana per active male (line 10) we find that all of the groups surveyed, both reform groups and non-reform group, have almost identical farm incomes.

The one respect in which the reform group farmers lagged badly in relationship to individual farmers was in other income--that is, income from working as hired labor on other farms or from other income sources. In this respect, as shown on line 11, the reform group had very low income compared to all groups of individual producers. This could be in part due to a tendency of reform group members to conceal other employment both from members of the reform group and from interviewers, because of group policies opposing such other employment. More likely it is primarily because joining an asentamiento tends to cut off a campesino from previous opportunities of working on private farms and because of the lower education and skill level of the reform group campesino.

4. Conclusions

Since the nature of the data imposes on us the necessity of dealing with both varied sizes of families, varied sources of incomes, and varied sizes of landholdings and land use patterns, the above calculations do not lead themselves to simplification if reasonable conclusions are to be drawn. We can, however, summarize that the calculations presented in (1) thru (3) above suggest as follows:

1. During the farm year 1975, if we adjust for differences in family size and farm size, there were no great differences in farm incomes achieved as between the reform farmers farming collectively, the reform farmers farming individually, and traditional farmers farming individually. All did about equally well.

2. The heavy costs to the State of supporting collective farming through technical assistance and credit (with the potential of significant amounts not recuperable) did not result in higher incomes in 1975 for the groups so benefitted.

1/ The Survey treats all individuals 14 or over as active adults, except those incapacitated by old age or otherwise.

3. In terms of total income, members of collective farms were at a disadvantage in relation to all other groups owing to their more complete dependence upon collective farm earnings and relatively little income from other sources.

4. The less intensive use of labor relative to other inputs may be a significant factor in limiting incomes from collective farm operations.

As had been stated, the results are for the farm year 1975 only. The survey would have to be repeated in order to determine whether the results are different in a more favorable farm year or whether the efforts expended on the collective farm achieve a cumulative impact that could not be discerned in the base year. Further the Survey does not cover the Bajo Aguán.

B. CAMPESINO ORGANIZATIONS

There are three principal campesino organizations, each of which can claim the support of large numbers of agrarian reform groups. In order of size they are: ANACH, UNC, and FECORAH. ANACH is organized under labor legislation and has close associations with the north coast unions. UNC is an association affiliated with the Christian Democratic movement and labor unions. The third is a Federation organized under the law of cooperatives. There has also been recently formed a fourth organization, which claims to command the support of a substantial number of groups--UNCA.

1. Asociación Nacional de Campesinos de Honduras (ANACH)

a. Background 1/

ANACH, oldest of the Honduras campesino associations, was founded in 1962 as a result of organizational efforts by FESITRANH, the largest labor union in Honduras. FESITRANH's sponsorship of ANACH arose from a feeling of kinship among the unionized banana plantation workers with landless and near-landless unemployed campesinos.

At the time of ANACH's organization, Honduras had a reformist government which had just created the Instituto Nacional Agrario (INA) and passed agrarian reform legislation. In the following year, however, the administration was changed by the military, and a conservative regime was installed.

1/ Some of the data in this section has been taken from the report of John D. Hatch and Aquiles Lanao Flores, in a Report on the National Association of Honduran Peasants, Rural Development Services, Ann Arbor, Michigan, April 16, 1977.

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Following the election of Reyes Rodríguez Arévalo as President of ANACH in 1967, ANACH redoubled its efforts to organize the campesinos for a sustained effort to press for land reform. The country was divided into eight regions and 28 zones, each assigned a full-time activist. With growing membership and the additional political strength of a large labor movement behind it, ANACH constituted a pressure group which was neither easy to ignore nor possible to appease with a token land reform program. To bring further pressure on the Government and large landholders, ANACH also organized land "invasions" to settle campesinos on essentially unused land. The Government was thus faced with the awkward alternatives of yielding to pressure or conducting multiple operations to remove well-organized and disciplined invaders from many tracts of land. To make the latter choice more difficult, ANACH developed tactics of invading with much larger numbers than would remain settled on the land, by using whole families, including women and children, and by reinvading as soon as the military retired.

During the period 1963-1971 the Government and its military supporters were ambivalent with respect to land reform. While not eager to press forward with land reform, they found it desirable to rely in some measure for support from the more liberal north, including both business and labor interests, as a balance against more conservative pressures. The attitude may be understood by the statement of the President (and military Commander) in 1969: "I am going to let the campesinos get what they want, but they will have to fight for it just like the north coast labor unions did." 1/

In 1972, during the brief regime of a civilian conservative government, ANACH and other groups organized a "hunger march" on Tegucigalpa, which led the military to take over the Government again and issue Decree No.8 which provided for accelerated land reform, including a process of legalizing campesino possession of invaded lands. Considering progress still too slow, ANACH continued to press INA with demands for particular tracts of land and by organizing further invasions.

b. Size of ANACH

The size of ANACH's membership has always been a matter of conjecture. ANACH likes to claim something on the order of 80,000 to 85,000 members though it will agree that many are inactive. An estimate made in early 1971 2/ placed active membership at about 18,000, though even this figure probably strained the concept of active. On the other hand, the concept of membership in an activist organization of essentially landless campesinos with little or no financial capacity is a difficult one. Neither nose counts of dues payers or attendance at meetings is an accurate indicator of participation. At any given time and place, ANACH has had the capacity of organizing for such specific purposes as land invasions larger numbers than its local hard core adherents. In any case, ANACH's political strength is greatly augmented by its affiliation with labor unions with up to 25,000 members.

1/ Quoted by Robert A. White, Structural Factors in Rural Development: The Church and the Peasant in Honduras, May, 1977.

2/ ATAC, An Evaluation of AID and AID Contractor Programs in Promoting Cooperatives in Latin America, Field Trip Background Report on Honduras, Washington, D.C., June, 1971. p. 89.

The most recent detailed ANACH membership statistics list 638 base groups with a total of 23,257. 1/ Many of these groups are probably dormant and in others some proportion of household heads have probably retired without being removed from the count. The latest INA statistics (Sept. 1977) show 387 ANACH groups with land on which over 15,000 members are settled.

About half of the strength of ANACH is in the north of the country with other centers of strength in the west and south, and some strength in Comayagua and Olancho.

The nature of ANACH membership has drastically changed as a result of the progress of agrarian reform. Whereas formerly most members were landless or near-landless, the great majority of groups are now settled on asentamientos.

c. ANACH organization

The ANACH base group, called a sub-seccional, generally consists of the members of an asentamiento (or of a group that aspires to obtain land under the agrarian reform). In any region in which there are five or more base groups, there is a regional office known as a Seccional Departamental. There are now eight such offices. Nationally, ANACH has a National Convention, consisting of base groups (with females recently granted equal representation with men), which meets every two years. Under this is a National Executive Committee of seven members of the National Executive Council which is the supreme authority when the higher bodies are not in session. There is a President and other appropriate officers.

d. ANACH Economic Program

ANACH realized early that, once campesinos are settled on land, they need assistance in order to farm it effectively and achieve adequate incomes. Accordingly, in 1967 it established a "Plan Cooperativo Nacional Campesino, Ltdo." (Plan Cooperativo or CONACAL). This was organized as a single national cooperative to serve participating groups that would be informally structured. During its first four years, the Plan Cooperativo worked with some 55 groups, many settled on land to which they had dubious tenure.

The program worked by assisting the groups (some of whom farmed collectively and some individually) to obtain inputs and to market their output, chiefly of basic cereals. Financing for a staff of three technicians and a secretary, organized as the ANACH Technical Department, was

1/ Datos Estadísticos del Plan de Regionalización ANACH, 1976. While dues payments are apparently collected (at L. 1.00 per head per month) from less than this number, the economic circumstances of many groups is such that dues payment is an unlikely indicator of effective strength.

obtained from AIFLD, and about $30,000 for a revolving credit fund was obtained from AIFLD, GOH and ANACH. Delinquency, much attributed to hurricanes since the projects were largely in the north, was considerable. In 1970 the fund was supplemented through a loan of $75,000 from BNF. 1/ Through September 1972 the fund had made 81 loans to 35 ANACH groups totalling Lps. 151,000. 2/ In 1976 the Fund approved loans to 29 groups (exact amount not clear from available data); this suggests about the same level of lending as in earlier years.

ANACH has managed to keep the rotating fund at least partially intact despite vicissitudes, including Hurricane Fifi and forced removals of some groups from the land, and the fund was recently reported to be capitalized at Lps. 148,000. This is at least partially due to the fact that ANACH (through AIFLD) pays the Technical Department's administrative costs, so that interest (at a moderate 6%) can be added to the fund, and to some further donations following Hurricane Fifi.

e. Development Since Decree No. 8

While the Plan Cooperativo has benefitted a number of groups, in recent years it has become unequal to the task of having significant impact on ANACH groups now that there are hundreds of them settled throughout the country on asentamientos. The Technical Department with a professional staff of five is not much larger than it was originally. 3/

Many of the asentamientos, of course, have been receiving loans from BNF. In this respect, many have received assistance from the Technical Department and other ANACH officials in presenting their cases for credit. In addition, ANACH has been active in seeking formalized support agreements from government agencies. ANACH currently has such agreements with the following organizations: BANAFOM, MRN, INFOP, DIFOCOOP, and Peace Corps.

The BNF agreement of 1974 commits BNF to provide a special fund at Lps. 2 million to finance agricultural and livestock loans to ANACH affiliates. These loans are to be jointly prepared and supervised by BANAFOM and the ANACH Technical Department. The interest is 9%, of which 3% is to go to ANACH to cover its technical assistance costs. Given the delinquency of many of the groups, however, BANAFOM has refused to make any interest rebates to ANACH.

According to data supplied by BNF, BNF has, through December 31, 1976, approved loans to ANACH Subseccionales totalling Lps. 2,888,000,

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1/ BNF has been asked several times for data on management and repayment of this loan, but it does not appear to maintain records in such a way that such information can be produced.

2/ Informe Contable del Plan Cooperativo de ANACH, 1970-1974.

3/ Budgetary data are not readily available, but the probability is that budget of the Technical Department does not exceed Lps. 200,000 annually.

of which Lps. 1,976,500 was used. Of this, BNF has recuperated Lps. 377,000 and Lps. 826,000 was delinquent. The bank, in ANACH's views, does not take into account the causes which have led to delinquency and default in credit repayment. Many of its groups have suffered total or near-total losses from inundations and droughts. ANACH considers it unfair to attribute such to the lack of business management of the groups and to cut off delinquent groups regardless of the circumstances.

Furthermore, the policies of the Bank, in ANACH's view, invite delinquencies and defaults. The Bank stresses loans for basic cereals, which involve high risks and little return. Especially on the numerous asentamientos where there is no more than two to three manzanas per family of cleared land, there is no possibility that members can make a living. There needs to be a diversification into other products with less risk and greater return. The Bank does not want to give loans for this. Also, if the groups have additional uncleared land, they must have credit to clear it, But BNF steadfastly refuses credit for this. If groups do not have the resources to do these essential things, it is not the failure of the groups. It is the failure of the bank.

ANACH also points out that credit to reform groups is not credit based on normal banking guarantees. The guarantee is, and must be, the harvest. The credit must, therefore, be supervised and supported with technical assistance to assure that it is well utilized, that there is a harvest, and that repayment is made from the harvest. The Bank with its traditional approach to credit and reliance on traditional guarantees, does not seem to understand this.

ANACH describes the relations of its representatives with the bank as very poor. To get a loan from the bank is like running an obstacle course in which everything is considered except the points that are important. While the requirements vary from one BNF office to another, the intent seems to be to hinder rather than help the client. For example, some offices require a legal certification that the group is not indebted, submission of tarjetas tributarias for all group members, a certificate from INA clarifying the group's land, completion of soil samples, and the preparation by a lawyer of a document of repayment guarantee (in addition to the loan contract). ANACH case reports suggest that legal fees alone to apply for a loan costs up to 4% of the amount of credit obtained, not to mention transportation and other costs incurred by representatives of the groups and ANACH.

ANACH is particularly annoyed by the attitude of the Bank that individual groups should have personería jurídica. The bank asks for it, although its officers agree that it is not significant. In its view pressures to have each asentamiento individually organized as a distinct entity reflect desires to weaken and destroy the unity of ANACH by lopping off its base groups one by one and luring them into other organizational systems.

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ANACH is also dissatisfied with BNF's grain pricing and marketing policies. This can best be explained by the following quotation from the Hatch/Lanoa Flores report: "While it is possible to understand why BANAFOM is not an efficient or committed supplier of small farmer credit, it is impossible to justify why this institution actually makes it difficult for its small farmers clients to repay the loans they receive. It would seem only reasonable that the Bank would give priority attention to buying the production of its own credit clients at support prices, thereby controlling harvest deliveries and deducting client obligations. ...After questioning representatives of 53 ANACH groups in six regions of Honduras, the authors did not encounter a single case of a group which was able to sell its 1975 harvest to a BANAFOM granary at the support price ...The stories told of grain marketing difficulties...might be discounted as gross exaggerations were it not for the fact that their details were reported so consistently...To begin with, most groups did not simply haul their produce to the nearest BANAFOM granary; they took the precaution of going to the regional bank offices and obtaining a delivery order. Even with the order, granary personnel would not receive their production, explaining that their storage facilities were already full. Several groups (in Olancho and El Paraíso) were told to take their grain to Tegucigalpa. In Tegucigalpa it was suggested they take it to San Pedro Sula, where again they were told there was not room; and many groups waited outside BANAFOM granaries for days and in a few instances as long as two weeks. Waiting outside the granaries were also the coyotes, (who offered) to buy up their available grain at prices 25-30 percent below the BANAFOM guaranteed price. These middlemen would eventually load their trucks, drive to the granary gate, and be permitted to unload. ANACH leaders in Olancho took the trouble of documenting this process, naming the intermediaries and the license numbers of their trucks, and presented their information to BANAFOM's top administrator, but no corrective action was taken."

The MNR agreement committed MRN to provide ANACH groups with agronomic assistance intended to raise crop and livestock production, as well as some technical training to ANACH membership. Whether this agreement gave ANACH some advantages is difficult to establish, but in any case the services given to ANACH asentamientos are not noticeably different from those given others.

The INFOP agreement commits the National Technical Training Institute to provide ANACH members with 4,333 trainee-days of preparation in technical subjects, especially business management, machinery operation and maintenance. In 1976 INFOP trained 645 ANACH participants and ANACH was pleased with the results.

The DIFOCOOP agreement commits the Directorate of Cooperative Development to assist ANACH in developing its Plan Cooperativo by helping to organize cooperative centrals, training leaders and members in accounting, bookkeeping and business management, creating a standardized accounting system, assisting with marketing plans, and preparing feasibility studies. Under this agreement some ANACH members have been participating in DIFOCOOP

courses. Also, DIFOCOOP and ANACH representatives have jointly studied the feasibility of a cooperative central in Jamastrán; this has not, however, resulted in a definitive plan, and financing for the project is not available.

The Peace Corps agreement (March 1977) commits the Peace Corps to assign, as of November 1977, four agronomists and four experts in small business management to ANACH's Technical Department. They are to work with 50 base groups in modern technology, grain storage, and marketing.

The amount and kinds of assistance the ANACH group asentamientos are currently receiving is very uneven. There are a few groups, notably dairy operations, in the San Pedro Sula area, which are receiving intensive support from the Technical Drpartment, as well as credit from BNF, and are building up their herds and reportedly making good incomes. Another example is an irrigation plan for tomato and rice production in Comayagua that has been approved for BNF financing. The Technical Department also has two trucks and a tractor in San Pedro Sula, which provide some services to groups in that area.

By and large, however, the services of the Technical Department are spread too thin to provide continuing support or to develop and follow up on long run development projects. Most technical assistance received from the groups comes from MNR, and some groups receive very little attention from any source.

f. ANACH Regional Cooperative Plan

Over the past three years, ANACH has been planning a system of regional organization of affiliated asentamientos. The essence of the plan is that a dozen or more base groups organized as ANACH subseccionales will organize a regional cooperative or Central, through which they would develop their farm plans, negotiate for credit, receive their inputs, centralize accounting, coordinate technical assistance, operate machinery pools and storage facilities, and market production. The plan has been carried forward on paper for some ten Centrales. They have assemblies composed of delegates from the base groups as well as officers and directors. Thus far they have done little except to meet and discuss plans. A few have received donations of land on which they plan to build offices and other facilities. However, without financing or professional management, nothing much can be done and nothing much has been done. The greatest amount of planning has taken place in Jamastrán, where DIFOCOOP is also participating.

The ten Centrales that have been organized to date are located in El Paraíso (1), Comayagua (1), Choluteca (2), Santa Rosa (1), the North (3), and Olancho (2). Others are in the process of organization in Olanchito and Guaymas and one each is proposed in Santa Bárbara and Francisco Morazán.

g. Education and Social Services

ANACH places great stress on member education. It has its own extensive training program, largely funded by AIFLD, in labor unionism, community

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development, and cooperativism. It has arrangements with INFOP and DIFOCOOP to provide supplemental training for thousands of its members. Some local groups also organize adult literacy classes.

ANACH also sponsors a women's organization, Juntas Femeninas de Desarrollo Comunal (JUFEDECO): results to date appear rather moderate.

In housing it has organized (through INA) a project of construction of 520 do-it-yourself houses in some 21 base groups, as well as another small housing project in an agrarian reform community.

The ANACH Technical Department sponsors "impact projects" (small community development projects financed by AIFLD). These include schools, community centers, community access roads, crop storage facilities, potable water systems, etc. About 15 to 20 projects are undertaken each year.

2. Unión Nacional de Campesinos (UNC)

a. Background

The Christian Democratic movement began seriously organizing in Honduras in 1963 with the formation of a university student front and the entrance into the country of the Latin America Trade Union Federation (CLASC). In 1963 a Christian Democrat Labor Union Federation was organized. The following year a campesino organization under the name Ligas Campesinas, now known as Unión Nacional de Campesino (National Union of Peasants) was established. In 1970 the campesino and industrial labor organizations formed a national organization, Central General de Trabajadores (CGT) in Tegucigalpa. Meanwhile, in 1969 a Christian Democrat Party had been organized for political action. 1/

The operation of the Christian Democrat labor and campesino unions was of course a challenge to FESITRANH and to its campesino affiliate, ANACH. There has been continuing rivalry between the two groups to organize both workers and campesinos, although this rivalry is now less intense.

b. Size of UNC

The size of UNC is even more difficult to estimate than that of ANACH. Leaders indicate that they have 650 campesino groups, of which 600 now have some land (though not all they need or want) and 50 may have no land at all. They also estimate the average size of a group at 40. This would suggest a total membership of 26,000, which would be larger than ANACH. It is generally believed, however, that the size of UNC is about half that of ANACH, and INA statistics record only 217 groups for which land has been provided.

1/ Robert A. White, Structural Factors in Rural Development: the Church and the Peasant in Honduras (Thesis), May, 1977, pp. 91-294.

c. Organization and Functions of UNC

The UNC organization is similar to that of ANACH. At the bottom are the base groups; there are twelve Comités Ejecutivos Regionales (Regional Executive Committees); and at the top in Tegucigalpa is a Comité Ejecutivo Nacional (National Executive Committee).

The functions of UNC are similar to ANACH with the significant difference that UNC does not have within its organization the equivalent of ANACH's Plan Cooperativo or Departamento Técnico. Instead, it relies primarily upon technical assistance provided by the PPA, agricultural promotion program of ACPH, which is described in Section C below.

Like ANACH, the UNC organization has formal agreements with various organizations to supply economic services to its groups. One is with ACPH and the other with MNR. It has good relations with INFOP and appreciates the training its members receive from it; however, it has not entered into an agreement with INFOP because it claims INFOP desires one of ten years' duration, whereas UNC officers are elected for only two years and do not want to bind their successors.

d. Outlook of UNC

UNC is even more wary than ANACH of having too close relations with the Government. It does not want its program or groups to be subject to a control that would weaken the organization or blunt its effectiveness in pressuring for reforms. Accordingly, it is reluctant to support any type of organization of its base groups with personería jurídica. With respect to cooperative organization, UNC takes the view that the action of UNC itself is cooperative and that organization of distinct cooperatives at the base is not necessary. While it maintains cordial relations with FECORAH, the Agrarian Reform Cooperative Federation, it would not agree to groups having concurrent affiliation in UNC and FECORAH. UNC recognizes that lack of personería jurídica is a problem, particularly in the obtention of credit. Like ANACH, it believes that it is BNF that makes this an obstacle. UNC is, however, itself applying for personería jurídica, and hopes that this will solve or help to solve the credit problem.

UNC is also opposed to the concept of an Empresa Asociativa for base groups as developed by INA. It asserts that these organizations, in effect, turn the participants into salaried workers, who consider the payments made to them as wages, rather than as returns to them as owners of the land.

In any case, UNC appears to place less emphasis on the importance of credit than does ANACH. This is perhaps because it takes a more evolutionary view of the development of collective farms. In its view, many defaults have been the result of the failure of base groups to take into account, the risks of droughts and floods or to give sufficient attention

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to the availability of a secure market. There must, in UNC's view, be a clear focus on how to take advantage of credit. Credits have to evoke a "mystique de trabajo". In some measure, groups can progress through self-financing. Many of these ideas seem to be related to educational concepts of ACPH and affiliated organizations that have placed heavier philosophic emphasis on the conscientization (consciousness raising) and education of the campesinos to recognize and solve their own problems rather than on the provision of material assistance. On the other hand, the past pressure of the UNC and its groups on FUNHDESA to provide credit on a liberal basis has been a significant factor in bringing about FUNHDESA's current insolvency and substantial inability to grant new credits.

At the present time the Christian Democrat movement, including the UNC, appears to be torn by a considerable amount of factionalism. It lies outside the scope of this study to explore these cleavages or predict their outcome. In any case, at the level of the campesino movement there appear to be serious differences as to policies to be followed. There is now in process of formation in the north of the country a new organization, known as the Unión Nacional de Campesinos Auténticos (UNCA), which is organizing groups discontent with UNC leadership, which is sometimes regarded as more doctrinaire than practical. UNCA appears to be gaining significant support in the area from Cortés to Tela, but whether it will be able to establish a viable organizational structure remains to be seen. It appears to be more pragmatic than UNC and to endeavoring to bring cooperatives and empresas asociativas into its orbit as well as ligas campesinas. Many groups seem to be unclear at the moment whether they are affiliated with UNC or UNCA.

3. Federation of Cooperatives of the Agrarian Reform of Honduras (FECORAH)

The Federación de Cooperativas de la Reforma Agraria de Honduras received its personería jurídica under the cooperative law in 1974 although it had been functioning for several years previously.

FECORAH currently claims to have 132 member cooperatives and pre-cooperatives 1/, each of which is a group which has received land under the Reforma Agraria and which has organized itself in cooperative form with personería jurídica. In addition, FECORAH estimates that it is working with 100 additional groups, of which about 60 have land and are seeking personería jurídica and 40 are groups which have not yet received their land. 2/ INA records show only 117 FECORAH cooperatives as of September 1977 (see Table I above), but INA probably still carries some of the newer groups affiliating with FECORAH as independents.

1/ Groups registered with DIFOCOOP whose personería jurídica is pending completion of tramites that generally take up to one year.

2/ These approximate figures appear on the high side.

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FECORAH estimates its total constituency at 16,000 families. It more likely between 4,000 and 4,500 in organized cooperatives and pre cooperatives 1/ and a smaller number in groups without cooperatives s

The emphasis of FECORAH is different from that of ANACH and UNC that it does not try to organize groups unless they have reasonable p pects of obtaining land from INA. In other words its focus has been the practical organization of groups of the agrarian reform rather th on mobilizing campesinos for political and direct action.

In organizing groups FECORAH has several assets. First of all, can serve as a pole of attraction for groups that do not want to affi with a campesino organization such as ANACH or UNC. Second, there is certain appeal to groups in becoming "true cooperatives" and having tl own personería jurídica. Given these assets, FECORAH would probabl even more successful in developing a federation of substantial size i had greater resources.

FECORAH has a small national office consisting of its President Secretary and claims to have 16 activistas in the field that work on tl organization of groups. It has a regional office in the south (Cholut with two accountants that assist cooperatives in the area with their b In the Aguán and Progreso zones, FECORAH has regional organizations, e with a small office and a secretary.

Although it renders no physical services such as marketing or sup of inputs, FECORAH assists cooperatives in solving some of their probl These include applying for credit to BNF, seeking payment from compan with which production has been marketed, obtaining technical assistanc etc. FECORAH, like ANACH and UNC, has an agreement with MNR for the rendering of technical assistance.

FECORAH believes that an important reason for the losses of BNF lending to agrarian reform groups has been the result of bad planning the part of INA, MNR, and the BNF, such as developing and supporting p jects to grow crops on land that is not suitable for them. A great de of credit arrives too late to be used at all or to be used effectively FECORAH would like to see greater coordination in farm planning, credit, and technical assistance.

C. THE CONCORDE ORGANIZATIONS

1. Honduran Popular Cultural Action (ACPH)

The Honduran Popular Cultural Action (ACPH) had its origin in 1960 in a program of the Catholic Church to establish a rural education program based in large part on the system utilized in Colombia. The "radio schools"

1/ 132 Cooperatives with a probable average of 33 members would be about 4,300 members.

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broadcast programs in after-work hours to teach literacy to adult groups who meet in classes led by volunteer instructors called monitors. The radio schools in Honduras quickly became imbued with a rural philosophy whose center of gravity was in the south of the country but which has achieved in varying degrees a diffusion throughout the country, particularly with the active support of rural Catholic religious and lay leadership. This philosophy is based on the belief that it is important for the campesino to acquire "conscientización" (awareness) of his problem, of his campesino society and of his capability to do something about them. Education was deemed to be an integral part of the process--education not only to develop basic literacy, but also to achieve social, political and religious awareness, to learn how to organize for community action, to adopt new agricultural techniques, and to improve health practices. The campesino himself could become an agent and not simply a subject of change and development.

The radio schools achieved a maximum of around 15,000 students in any given year. From 1961 to 1970 alone, they enrolled 108,000 students. While results in proportion to effort expended were not as great as might have been hoped, a Stanford study found that during that period nearly 9,000 individuals gained significantly in literacy capacities through the radio schools. 1/

About 1970, ACPH established a program to provide technical assistance to campesinos with marginal farming operations, which was later expanded to include a series of cooperatives based on the supply of consumer goods and other related agricultural functions. While the radio school had been operated on a slender budget (largely funds from varied Catholic organizations such as MISEREOR and a small budget from the GOH), the new programs required financing on a large scale. About this same time, two new organizations were established: FUNDHESA (Foundation for Honduran Development) as a fund-raising organization for ACPH and related organizations; and CONCORDE (Coordinating Council for Development) as a coordinating body for the variety of development organizations that had been created out of Catholic religious and lay action. Other members of CONCORDE were Asociación de Promoción Humana (APH), involved in housing and other activities, an Instituto de Investigaciones y Estudios (engaged in research on development problems); a Honduran chapter of Volunteers International for Technical Assistance (VITA), CARITAS, and a housewives' organization. 2/

Under the leadership of FUNDHESA a concentrated effort was made to raise funds for the new agricultural and consumer crop program. 3/

1/ Robert White, Mass Communication and the Popular Promotion Strategy in Rural Development in Honduras. Stanford University, July, 1976.

2/ The last three have subsequently withdrawn from CONCORDE. The latter has been converted into a Federación de Mujeres Campesinas (Federation of Peasant Women) now affiliated with UNC (Unión Nacional de Campesinos). The Pre-Federación de Servicios Múltiples (outgrowth of ACPH's consumer cooperative program) has since become a member of CONCORDE.

3/ The consumer cooperative program is discussed in a succeeding section on the Pre-Federación de Servicios Múltiples.

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FUNHDESA achieved a considerable measure of early success and was able to expand its lending to Lps. 1,381,000 in 1973. The CONCORDE group developed in 1973 an ambitious program to expand the agriculture/consumer goods project on a nation-wide basis, with detailed studies and estimates of financial needs over a five-year period aggregating $6.5 million to serve 25,000 to 30,000 campesinos; funding was never obtained, however, beyond about a quarter of this level.

The ACPH agricultural program became known as the Programa Para la Promoción Agrícola (PPA)--Program for Agricultural Promotion. The plan was to train para-professionals from among the campesinos, each of whom would handle a number of groups that he would visit periodically. The training has been done in a regional rural educational center in Choluteca affiliated with ACPH and in other locales available to the CONCORDE group. In each of five regions of the country, two agronomists supervised the program. This was later changed to use practical agriculturists in some cases instead of agronomists. In addition, the program was reduced to four regions owing to civil strife in Olancho. Small amounts of credit were to be supplied to buy inputs and provide for storage. Average credit required per farmer was estimated at $60.

Facts external to the program have affected its functioning. In the first place, land reform greatly altered the program from working with small marginal groups to giving priority attention to newly settled farmers of the agrarian reform. 1/ A second factor was Hurricane Fifi in 1974, followed by a year of inundations and drought in 1975. Both events created an immense demand for loans to help the groups being served, as well as causing many groups to default. The PPA system, designed to work with para-professionals and to extend small loans with modest risk, was not capable of husbanding its resources through larger loans with great risks. With inadequate repayments from the PPA groups and other borrowers, FUNHDESA had to default on its own obligations, has had little success in raising new funds, and consequently can no longer provide significant funding to PPA.

The shift in emphasis to working with groups benefitting from agrarian reform also meant that, whereas originally PPA was alone in providing the campesinos it served with assistance in agriculture, now there are also INA, MNR, and BNF. A complementary non-duplicating role is not easily achievable nor is the specific impact of PPA readily observable. In one respect, PPA has developed an activity which is complementary and has measureable independent value. This is the programa de ensayo, which consists of farms to test and demonstrate various crops suitable for production by campesino groups and the development of small demonstration and testing plots on their own land for products of interest to them. This program

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1/ While ACPH has always maintained that it does not service any one faction but is prepared to assist all, in practice the core of its clientele has been the groups of UNC with which it shares ideological affinity.

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appears to be a positive step in the direction of assisting campesinos to diversify their production along lines that may be practicable for them. The program is, however, weak in professional management and financial support.

The ACPH program today consists of the same two elements as before --the Radio schools and the PPA program. Recently, however, it was decided that the two programs should be merged in order to reach, insofar as possible, the same people with both programs. This is based on the concept that the two programs are, or should be, mutually reinforcing. Literacy, general education, and conscientization should be linked with the practical agricultural program so that the one can have relevance to and impact on the other. Awareness and education are now considered not enough without something (agricultural development) to use it on; conversely, agricultural development depends heavily on awareness and general education.

Accordingly, ACPH is now merging the two programs. This merger will be carried out at all levels. Nationally, the two technical departments have been merged as one with an educational technician as the head and an agronomist as assistant. There will now be only one regional chief where there were two, and one zonal supervisor where there were two. At the base level the functions of the agricultural promotor and the radio school monitor will be combined and the best of the two incumbents selected to continue the combined factors. Personnel who have been previously working only on radio schools will get agricultural training and those working on agriculture will get radio school training.

The combined technical department at national level now has three sections: Teaching, Agriculture, and Training and "Ensayos". The latter combines staff training for both education and agriculture with the direction of the agricultural demonstration plot activity.

For the current year ACPH expects to have 14,000 students in 600 to 700 radio schools. 1/ Its radio school budget is Lps. 50,000, including a Government subsidy and funds from MISEREOR and various resources. In agriculture it expects to work with about 300 groups (mostly of the Agrarian Reform), which may mean about 8,000 to 9,000 campesinos. It estimates its expenditures for agriculture at Lps. 800,000, but without a breakdown it is hard to know how much of this is anticipated lending volume, which in light of FUNHDESA's funding problems, may be overestimated.

2. Pre-Federación de Cooperativas de Servicios Múltiples de Honduras

A program of regional multiple services cooperatives was instituted in 1972 under the sponsorship of FUNHDESA. A "Pre-Federación" of these cooperatives was organized in 1975. From the beginning, it was intended that the cooperatives would be engaged primarily in the sale of consumer goods but would also deal, as appropriate, in agricultural trading activities useful to their essentially rural constituency. Of the total claimed

1/ Many observers feel this figure is considerably inflated.

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membership of approximately 7,000, about 80% are believed to be campesinos. The pre-federation doubts whether more than 10% of these are members of reform group organizations such as UNC, and field observation tends to support this.

There are now seven regional cooperatives, one each located in the provinces of Choluteca (also covering Valle), Intibucá, Comayagua, Santa Bárbara, Copán and two located in Yoro (covering also the departments of Atlántida and Cortés). There is an eighth affiliated cooperative situated in Colonia Popular No. 1 in Tegucigalpa.

Each of the regional cooperatives works through a network of local "filiales" in the various towns and villages. These "filiales", of which there are 152, purchase goods on credit from the regionals and sell for cash. Each "filial" has a small store.

The principal products handled by the cooperatives are foodstuffs and other staple consumable household goods. Originally, the cooperatives tried to handle agricultural inputs, but they gave up because they lost money.

The Pre-federation has established a Department of Marketing to deal in basic grains and other products grown in quantity by members of the regional cooperatives and their "filiales". The most important project organized by this Department is Proyecto SECOPA ("Servicios y Comercialización de Productos Agrícolas") in Santa Rosa de Copán, with an investment of Lps. 210,000. There they have built a plant with storage capacity of 25,000 quintales which, on the basis of a field visit, appears to be well built. As there is no other storage facility in this important area, it would appear to fill a need. Services offered by SECOPA include:

- Marketing of the product
- Storage
- Threshing
- Cleaning
- Drying
- Sorting and husking rice
- Supply of seed and fertilizer

SECOPA began its activities in January, 1977 and during the first four months marketed about 8,000 quintales of production--chiefly corn and beans, but also including some rice and coffee. It will require a full farm cycle of operation before the potential of SECOPA, with respect to volume and profitability, can be adequately appraised. In any case, the project is well worth following as an indicator of the viability of cooperative projects of this type throughout the country as a complement to Governmental and private enterprise storage systems. Farmers are currently experimenting with the production of 22 manzanas of soybeans with seed supplied by SECOPA. It is also planned to experiment with peanuts.

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Although it lacks the services and facilities available in Santa Rosa, the Department of Marketing has also engaged in marketing for some of its other regional groups. Total results were as follows:

(in short-tons)

		Jan. 1 - Apr. 30
	1976	1977
Corn	625	250
Beans	50	471
Rice	170	27
Sesame	55	78
Salt	1,475	458

A significant portion of these products were marketed through the Regional Consumer Cooperatives. Other production is sold in San Pedro Sula, Tegucigalpa, or exported. The salt is produced by a small pre-cooperative of salt producers in the south (San Lorenzo).

One of the Department of Marketing's major new projects is the establishment in El Progreso, Yoro, of storage facilities and a marketing program equivalent to SECOPA in Copán. Another major project is the establishment of a plant in the Department of Choluteca for the hulling and decortization of sesame. This plant, which should be in operation late in 1977, is being financed 30% by FUNHDESA and 70% by the Corporación Nacional de Inversiones (CONADI).

The Department of Marketing uses banks and FACACH for financing the purchase of grain. The Pre-Federation has three vehicles of its own and hires others.

The Pre-Federation has not been granted personería jurídica because, leaders claim, of their alleged alliance with the Christian Democratic political movement.

The Pre-Federation is reputed to be one of the better managed programs within CONCORDE. While significant amounts were lost during the earlier years of development of the consumer cooperatives, the management of the Pre-Federation appears to be shaping the organization along business lines to conserve its resources and slowly extend its activities.

In addition to marketing projects of the Federation, one of the consumer cooperatives in Yoro has a very attractive project to supply chile peppers to the McIlhenny Company of New Orleans. Both asentamientos and individual farms are provided with assistance to produce chiles for the project. The project is reportedly successful and now in its second year of operation.

3. Honduran Development Foundation (FUNHDESA)

FUNHDESA is the fund-raising agency for a group of private agencies (united under the name CONCORDE, described in a previous section on ACPH). FUNHDESA itself is a small organization that relies primarily on its associated organizations for the planning of projects and for their supervision.

FUNHDESA's success in raising funds made it possible to greatly expand its lending to associated groups from 17,000 Lempiras in its first year (1969) to 234,000 Lempiras in 1972, and 1,381,292 Lempiras in 1973. While we have been unable to obtain more recent data, it is possible that FUNHDESA's outstanding loans, including amounts uncollectable, may have reached at one point as high as Lps. 3,000,000.

This success encouraged FUNHDESA and ACPH to conceive a comprehensive program to serve some 30,000 campesinos in five regions of Honduras. Extensive feasibility studies were prepared, including budgets estimating total capital requirements over a five-year period at nearly Lps. 13,000,00 The plans never materialized since only a fraction of this amount could be raised. Elements of the plan, however, are represented by the current activities of ACPH's Programa para la Promoción Agrícola (PPA) and of the Pre-Federación de Servicios Múltiples.

At the present time, FUNHDESA is facing many problems. In 1975 and 1976 it was pressed to make a large volume of loans to reform groups being assisted by the PPA. Some of the funds it used for such purposes were obtained from commercial banks at relatively high interest. Many of these groups are unable to pay and FUNHDESA has to repay the commercial bank loans. In consequence, FUNHDESA has substantially ceased to lend money and is concentrating on securing repayment of existing loans. This, of course, is difficult if FUNHDESA is not able to provide new financing for its clients.

FUNHDESA had particular difficulties in Olancho owing to an assault on CONCORDE headquarters there by large landowner interests, which resulted in CONCORDE's withdrawal from that department of Honduras. In the South, where most of the money was invested, the lack of rains has made farming results precarious. Groups become discouraged if there are two crop failures in a row. The only programs financed that are reportedly successful are in sesame and cashew. The cashew program involved planting 1,000 hectares with small farmers. About 300 hectares were destroyed either because the farmers lost patience in waiting for a five-year period for trees to mature or because of fires. The remaining areas, according to FUNHDESA, are expected soon to be in production and the producers in a position to make loan repayments. 1/

With respect to funds borrowed from commercial sources, FUNHDESA has in the past enjoyed Overseas Private Investment Corporation (OPIC) guarantee Under this guarantee, it has submitted claims for payment of numerous loans regarded as uncollectable. In most cases, the reasons for inability to collect is stated to be the failure of a crop and the extreme poverty of the borrowing groups, which are generally Ligas Campesinas or Clubes de Amas de Casa or Clubes de Monitores. There were also a number of failures of small commercial and industrial projects, such as storage and sale of basic grains.

1/ Other reports suggest this may be an optimistic appraisal.

Best Available Document

To add to FUNHDESA's problems, its sources of financing appear to have dried up. It is delinquent on Lps. 387,000 of its Lps. 769,000 credit from BNF, so that it is unable to obtain more funds from that source. It is also delinquent on a Lps. 168,000 loan from FACACH. 1/

In contrast to private foundations in other Latin American countries, (such as Fundación del Centavo in Guatemala) FUNHDESA does not tap local industry (including international companies) as a source of financial support. This may be due in considerable measure to its organizational affiliations.

D. COOPERATIVE ORGANIZATIONS OF INDEPENDENT FARMERS

1. Federación de Asociaciones Cooperativas de Ahorro y Crédito (FACACH)

a. Origins and Growth

FACACH was founded in 1966 following a year of intensive work in the organization of credit unions under a program financed by AID, which included technical support through CUNA International, Inc. The original 46 member cooperatives (6 forerunners and 40 organized under the AID/CUNA program) had total membership of 5,346. The movement grew rapidly to 126 cooperatives with nearly 30,000 members by 1970. Subsequent growth has been slower, involving the weeding out or consolidation of smaller and weaker cooperatives. At the end of 1976, FACACH united 112 cooperatives with a membership of 32,000.

The FACACH credit union movement has been even more impressive and consistent in the growth of its financial strength and volume of financial activities than in size of membership. The following data show the rate of increase:

Year	FACACH Portfolio of Loans to Affiliates and Others	Affiliates' Portfolio of Loans to Members
1966	Lps. 16,000	Lps. 500,000 (approx.)
1970	1,058,000	4,333,000
1973	3,164,000	13,100,000
1976	5,496,000	19,000,000

There is a duplication in the above figures in that FACACH as a Federación had outstanding loans to cooperatives of Lps. 3,500,000 for relending to credit union members. On balance, therefore, FACACH and its members, as a group, constitute the equivalent of a bank with outstanding loans of about Lps. 21,000,000.

1/ This loan was made from AID funds. AID auditors found that FUNHDESA did not keep adequate records on these funds and commingled them with funds from other sources, with the result that use in accordance with terms of the loan could not be established.

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The sources of these loan funds are as follows:

	Amount in Lempiras	Percent
Loans from Government of Honduras (including AID funds)	Lps. 2,650,000	12.5
Loans from COLAC (Confederation of Latin American Credit Unions)	877,000	4.1
Savings generated by members	16,515,000	77.6
Loans from cooperatives	371,000	1.7
Other loan sources	385,000	1.8
Donations to Capital	488,000	2.3
TOTAL	Lps. 21,286,000 1/	100.0

From this it will be observed that nearly 80% of the funds utilized by FACACH have been generated by savings within the Honduran Cooperative Movement.

b. Credit Union Activities

Since its beginning in 1966, the member cooperatives of FACACH have lent to their members Lps. 85,000,000, most on short-term. As of 1970 about 18% of loans were for agriculture and another 5.6% for animals. In 1976 the corresponding figures were 12% and 2%. Some of these loans may be for marketing rather than production; on the other hand, there were also many loans categorized as commercial that doubtless relate to agricultural goods or their derivatives. The impact of normal savings and loan activities on low income farmers has, however, been small. Though FACACH has a substantial rural membership, many of these are employees (e.g., of Standard Fruit Co.), commercial and professional people, government employees, and the like. A rural cooperative such as that at Danlí, for example, believes less than ten percent of its members are farmers. There are, however, a few local cooperatives in which lower-income farmer participation is strong and, as described below, FACACH is now placing more stress on working with small farmers.

In addition to providing savings and loan opportunities, the FACACH system also provides life insurance for payment of loans taken out by members (a form of insurance which helps the cooperatives reduce delinquency as well as benefitting the member); additional family and individual life insurance is provided for 3,261 members who pay for it.

c. Programa Crédito de Producción (PCP)

In recent years FACACH has instituted a Credit Program for Production (PCP) which is basically for agriculture but includes small industry. This program was launched on a small and experimental basis, but the intent is

1/ Total exceeds size of portfolio since FACACH and its affiliates also have other current and fixed assets.

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to expand it as rapidly as possible, consistent with good business judgement and availability of resources.

During 1976 FACACH conducted projects in eight cooperatives. The total amount of credit provided was Lps. 523,000 (of which Lps. 427,000 was for seven cooperatives in agriculture and one for Lps. 96,000 for one cooperative in industry). In 1977 FACACH is supporting PCP programs involving several hundred participants in ten cooperatives. New projects added relate to irrigation and cotton. The 1977 projects involve loans totalling Lps. 636,000.

The agricultural projects involved corn, rice, beans, vegetables, pigs and bees. Most of the projects were with individual farmers but in one project (bees, rice and vegetables) the operation was done on a collective basis.

In these projects FACACH endeavors to provide a complete package of services, not credit alone. It negotiates agreements for supply of inputs at reasonable prices with various suppliers. It has a staff of three agronomists in the field and another at national headquarters to select projects, advise cooperatives in their promotion, planning and organization, provide technical direction to the projects, and to assist in marketing. In the case of three cooperatives it has made arrangements with commercial firms to integrate production with marketing. It has secured quotas for marketing basic grains through BNF. It has also made an agreement for the sale of production to COHAAT (Cooperación Hondureña Alemana de Alimentos por Trabajo). There is also an agreement between the Governments of Honduras and Western Germany, signed in 1976, to provide two technicians to PCP for a period of four years.

The ATAC baseline survey included a sample of 40 participants in FACACH's corn and bean projects in Olancho. The results showed that the participants achieved somewhat better farming results per manzana than either clients of the BNF in Olancho or members of the control group. They may actually have done better than the statistics show since on average they were holding a much greater part of production for future sale rather than selling all at the time of harvest. The FACACH group also received somewhat larger loans on average than the BNF clients. FACACH has informed us that there was almost 100% recuperation of the amounts loaned. 1/

The FACACH PCP program is open to any cooperative that is organized with personería jurídica and has good management. It need not be a credit union. Some of the credit unions participating in the program have organized departments to sell inputs and even consumer goods. Thus they are tending to become cooperativas de servicios múltiples, though continuing their active FACACH affiliation.

1/ FACACH also claims continuing good repayment of loans in 1976 except in a ride project, on which, owing to climatic factors, all production was lost. It, nonetheless, expects the amounts to be recuperable with only moderate loss in succeeding farm years. A potential danger to FACACH as to all lenders, of course, is the risk of successive crop failures that could ultimately make control of delinquency unmanageable.

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FACACH has been financing this new program in part with funds from BNF (Lps. 720,000 at 6%). It has no record of delinquency. It is not happy with this type of financing, however, both because it is far less than it needs has asked for, and because most of it is for a term of only 15 months. FACACH considers it important for good management to have the use of funds over a period of years to permit the orderly planning and development of the program. FACACH also would like a lower interest rate inasmuch as it considers the 5% spread between the cost of money and the 11% paid by the farmer inadequate to cover the costs to FACACH and to the participating cooperatives in a program requiring this degree of technical assistance and supervision. An alternative source of financing for FACACH would be COLAC (at 9% or more), but this is prohibitive.

For the development of its PCP program, FACACH would like to secure financing of Lps. 5,000,000 over a 10-year period, to be increased to Lps. 10,000,000 over fifteen years.

d. FACACH as Banker to the Cooperative Movement

In addition to operating as a credit union federation, FACACH has always aspired to be banker to the cooperative movement. Indeed, for a period of time it acted as a channel for AID loans to FECOAGROH (see below) before that agricultural federation became insolvent with significant losses to FACACH.

To a certain extent, FACACH has achieved its aim as the following table showing recipients of its loans in 1976 indicates:

Recipients	Amount	Percent
Affiliated cooperatives (credit unions)	Lps. 1,898,613	43.6
Coffee cooperatives	1,195,136	27.5
Industrial cooperatives	748,553	17.2
Agricultural cooperatives	12,802	.3
Development institutions	498,733	11.4
TOTAL:	Lps. 4,353,837	100.0

FACACH thus provides a supplementary source of funds for cooperatives and institutions (FUNHDESA) over and above what may be available from BNF's cooperative window or other sources. The development value to the cooperative movement of lending to coffee cooperatives appears dubious in light of their capability to use BNF and private banking sources. Moreover, since FACACH in turn also borrows from BNF, to some extent, the operation involves money chasing itself around in circles. FACACH helps to build up its funds for lending not only by securing obligatory deposits from credit union members but also by requiring non credit union borrowers to make time deposits (Certificados cooperativos de depósito a plazo fijo). This, of course, means that net lending is less than the figures indicate.

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e. Institutional and Financial Soundness

A credit union federation cannot be judged by the profits it makes because that is not its purpose. The two most relevant factors are: (1) whether it is continuing to accumulate capital at a healthy rate and (2) whether it is satisfactorily covering its operating expenses out of income.

On both points the books of FACACH show satisfactory results. Its total capital (patrimonio y resevas , less reserves for bad debts) has been growing as follows:

1973	Lps. 1,005,000
1974	1,317,000
1975	1,788,000
1976	2,162,000

With respect to the covering of operating expenses, the books show that FACACH has in a sense reached its goal of self-sufficiency. The margin is not very great--a surplus of Lps. 14,500 in 1976. The surplus was computed before deducting Lps. 108,000 in costs defrayed from "donations" from Inter-American Foundation, Fundación de Desarrollo y Paz del Canadá, and the Instituto Austríaco de Cooperación Internacional. This, however, is reasonable as the donations were not made as general contributions to capital but rather to enable FACACH to undertake extra-budget activities. A further point to be made is that FACACH is not capitalizing in equity form the spread between its soft loan of AID funds and a normal interest rate. In this sense, there continues to be a moderate subsidization of FACACH's expenses.

The very serious and difficult problem to analyze is the extent to which FACACH's portfolio of loans is safe and whether its reserves for bad debts are adequate. An indication of the scope of this problem is that FACACH refinanced in 1976 debts amounting to Lps. 1,683,000. This is over 38% of FACACH's lending for the year and, by any criteria, is a lot of refinancing. FACACH did add nearly Lps. 60,000 to its reserve for bad debts during the year, which reserve now totals Lps. 195,000. This reserve amounts to something better than 3% of the total amount of its portfolio of Lps. 5,889,000 at the end of 1976.

An analysis of the refinancing that took place in 1976 shows that nearly 37% was on loans from FACACH to member credit unions. Much of this is doubtless due to overlending on the part of affiliated cooperatives and to their own difficulties in getting timely repayments from their members. The whole credit union system works through essentially short-term credits, which result in frequent short-term delinquencies which, for the most part, can be cleaned up in a reasonable period of time. Many of FACACH's clients have been pressed on liquidity by Hurricane Fifí, the inundations and drought of 1975, and the contraction of credit from BNF during a period of expanding need. The real problem for FACACH arises if in a given cooperative the situation becomes so

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critical as to threaten the cooperative's solvency and ability to continue in business. It would, therefore, require considerable study of the principal cooperatives in need of refinancing to determine the degree of risk involved. A recent study by COLAC 1/ suggests that member credit unions have about Lps. 1,300,000 of uncollectable debts. However, it is not clear how much of this may be recuperable from member "aportaciones" or covered by local cooperatives reserve for bad debts.

The balance of the amounts refinanced constituted loans to coffee cooperatives, industrial cooperatives, and development institutes in that order. The refinancing for coffee cooperatives, which are prospering, is probably not too serious; the loans to the industrial coops may or may not be risky; and the loans to development institutions (mainly if not wholly FUNHDESA) should be cause for considerable concern.

During 1976 FACACH instituted a series of measures to bring delinquency under better control. These measures include:

1. Care in granting sound credits

   a. Requiring solid guarantees
   b. Assuring that length of loans is adequate
   c. Requiring feasibility studies, as necessary

2. Active program of debt collection, including visits to borrowers

3. More effective control of budgets on the part of individual cooperatives.

FACACH has a continuing educational program. This included in 1976 some 80 courses and seminars, usually of two days duration, for over 2,000 members. FACACH has been stressing the importance of the prevention and control of delinquency in its cooperative education courses.

The COLAC report on FACACH (referred to above) cites many weaknesses in the FACACH organization, including its recent lack of growth, lack of sense of direction, lack of auditing of cooperatives in the South (where delinquency is particularly serious), and deficiencies of administration and control. These observations conform with general impressions that FACACH has the potential to be a stronger and more dynamic organization than it is. A particular observation of COLAC that should be noted is its caution that an overstress on high risk loans to agriculture could be dangerous for the organization.

2. Federación de Cooperativas Agropecuarias de Honduras (FECOAGROH)

A program for developing a system of agricultural cooperatives to serve independent small farmers was instituted by the GOH and AID in 1967. This led to the organization of a Federación de Cooperativas Agropecuarias de

1/ Evaluación de la Federación de Asociaciones Cooperativas de Ahorro y Crédito de Honduras (FACACH), Confederación Latino-Americana de Cooperativas de Ahorro y Crédito, March, 1977, p.47

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Honduras (FECOAGROH) in 1969. By December, 1970 there had been united under the Federation a total of 28 primarily village level groups scattered in ten departments of the country with a total membership of about 3,200. Most of these units were in existence prior to the institution of the program; only two had more than 300 members; nineteen had *personería jurídica*, while the remainder were new pre-coops.

At the end of 1970 the groups had total working capital of Lps. 289,000 During 1970 they had made input purchases of Lps. 836,000, marketed produce totalling Lps. 1,213,000, and enjoyed loans of Lps. 565,000. The organization was lop-sided, however, in that two coops (one a feed producer and the other a collective sugar cane and banana farm) accounted for 62% of working capital, 57% of total purchases, 66% of marketing and 54% of loans. Both of these coops have subsequently disaffiliated. The 23 cooperatives composed wholly or partly of farmers primarily engaged in basic grain production were low in volume of activity. They were also at the time of a 1971 evaluation, 20% delinquent on their loans.

The operation of most cooperatives participating in FECOAGROH was similar to that of credit unions. Members were required to purchase shares. Members were also granted loans from such funds as well as from credit provided by the Federation. FECOAGROH's major plans for development of services were to expand the availability of production credit to members and to construct grain storage facilities and engage in the marketing of grain. For this, funds were to have been supplied indirectly from AID through a loan from FACACH, the credit union federation. The amount earmarked for these purposes out of AID Loan 522-L-018 was $756,000 for production credit and $744,000 for the grain projects.

An evaluation report on FECOAGROH dated June, 1971 commented as follows: 1/

"It is clear...that much more remains to be done before a significant organization will result. Up to the present time, the primary assistance rendered to the member cooperative has been to assist them with their production inputs through centralized buying (which helps to hold down prices) and by provision of some credit. Technical and marketing assistance are as yet relatively undeveloped although in process of expansion...

"One of the major problems of the organization would appear to be that it consists of many small groups at widely dispersed locations. The sheer burden of holding together an organization of 3,196 members divided into 28 groups will doubtless be a continuing problem. The Federation's staff Of 14, plus 12 Peace Corps volunteers and two ACDI technicians add up to 28 people. With most of the staff based in Tegucigalpa or travelling back and forth from one small group to another, and with much attention devoted

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1/ ATAC, Evaluation of AID and AID Contractor Programs in Promoting Cooperatives in Latin America, Field Trip Background Report on Honduras, June 1971, p. 87.

to organizational concerns and bookkeeping, the question may be raised whether the project might not better have been launched by working with a group of farmers of equal number concentrated in a more restricted geographical area."

In 1972 FECOAGROH reached its zenith with 34 cooperatives and pre-cooperatives aggregating a total claimed membership of 4,421. It also received from FACACH and disbursed Lps. 499,000 in production credit. That year, however, proved disastrous to FECOAGROH. Bad weather conditions, coupled with administrative problems, resulted in serious delinquencies on its credit from FACACH (Lps. 320,000 of Lps. 499,000). Meanwhile, in the light of BNF's grain policies and development of storage facilities, there were second thoughts as to the viability of FECOAGROH's grain storage and marketing plan. Both AID and FACACH decided not to provide continuing support to FECOAGROH. In effect, the Federation became insolvent and unable to continue operations.

The Dirección de Fomento Cooperativo took over administration of what remained of the Federation. Fomento Cooperativo supports the Federation and works with member cooperatives through its own staff. Recently, small quarters have been provided for the Federation in a separate location, but this does not signify any basic changes in the reality of the Federation's dependence upon Fomento Cooperativo.

FECOAGROH now consists of about 18 cooperatives, of which 12 with perhaps 1,500 members are reasonably active. Their main business is the sale of inputs. A few have tractors. A few also have been able to maintain or restore their credit status so as to obtain small amounts of production credit. FECOAGROH has aspirations to affiliate as member cooperatives some of the agrarian reform groups. Unless it has services to provide, however, its power to attract such groups would appear weak.

3. Honduran Federation of Coffee Grower Cooperatives (FEHCOCAL)

There are 27 coffee grower cooperatives, which are affiliated with a federation, Federación de Cooperativas Cafetaleras, Ltd. Membership is approximately 6,000. This represents the organization of a sizeable proportion of the 38,000 farmers in the country that have one manzana or more land planted in coffee (perhaps 50,000 if miniproducers were included).

Since 80% of the production of coffee in Honduras is by small and medium sized producers with under twenty manzanas, the membership of the coffee cooperatives is largely composed of them. The large producers are more likely to have more extensive facilities of their own and to have close relationships with private processing, marketing and exporting organizations. On the other hand, the very smallest coffee producers tend not to be members of FEHCOCAL cooperatives.

FEHCOCAL buys, processes and sells, both domestically and for export, coffee produced by its members. It is generally credited by IHCAFE and others with doing a good job in maintaining quality and enjoys a good

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reputation in the export market. More than 70% of its exports are to Europe, where the Europeans usually mix the Honduras coffee with poorer qualities from Africa, and most of the rest of the United States. FEHCOCAL has a large facility in San Pedro Sula, where it is headquartered.

Of total national production of about 180,000 quintales annually, FEHCOCAL handles about 80,000 quintales. It also accounts for about 25% of total national exports.

FEHCOCAL works in close relationship with IHCAFE (Instituto Hondureño del Café) and AHPROCAFE (Asociación Hondureña de Productores de Café), a private body. All three have a common interest in improving the quality and productivity of coffee production and the quality of the marketed product, particularly for export.

One of FEHCOCAL's most important current efforts is to work with member cooperatives and provide them with technical assistance to develop centrales beneficiadoras and related facilities throughout the country. Up to now, the cooperatives have had only warehouses for temporary storage. It is hoped that by providing regional collection and washing points, a more uniform quality of product can be achieved.

FEHCOCAL and its affiliates have good relations with BNF and obtain considerable financing from this source for the development of their own facilities. In addition, a large proportion of the membership obtains credit from BNF, in part directly but in large measure through the cooperatives, which distribute the credit to their members. Since BNF receives its repayment from FEHCOCAL, which can make deductions from amounts payable for its coffee purchases, this obviously minimizes BNF's problems of credit supervision and debt collection. While formerly FEHCOCAL and its affiliates relied entirely on BNF, they now find that private banks are also actively interested in lending to them. Notwithstanding this generally good credit picture, FEHCOCAL does have to contend with some excessive delinquency and make repeated efforts to secure full cooperation in the reduction of delinquency.

FEHCOCAL is interested in extending its network of cooperatives to serve more farmers and in this is aided by AHPROCAFE, which makes the analyses for the organizations of cooperatives. On the other hand, it wants to move gradually so as to consolidate what it has. Through technical assistance and education programs, FEHCOCAL makes a continuing effort to train and motivate the membership, improve the quality of cooperative management, and last but not least, to struggle to achieve good accounting and to bring accounts up to date.

FEHCOCAL has a very well developed department to distribute inputs, which operates profitably. Fertilizer, chemicals and a considerable variety of other goods are handled. The development of the cooperative's input supply services as well, as those of private firms, is one of the factors that had diminished the need felt for BNF's input sales facilities.

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FEHCOCAL, as well as AHPROCAFE and IHCAFE, aim to achieve an equilibrium between production and marketing to obtain just prices. They do not encourage the planning of additional land in coffee since average production per manzana in Honduras is only 8 quintales, which they would like to see increased to 20 so that the farmer will get a better return. IHCAFE has 86 extensionists in coffee, many working closely with cooperatives. Often the aim is to get a reduction in the amount of land a farmer devotes to coffee, while increasing production and profits on what remains.

This has led FEHCOCAL (as well as IHCAFE and AHPROCAFE) to develop interest in diversification of the production of coffee farmers. Among products of interest to them are basic grains, sesame, honey and bees, wax, pigs, allspice, 1/ and castor beans.

In proportion, as FEHCOCAL succeeds in encouraging its membership to diversify, the coffee cooperative groups will take on some of the characteristics of general agricultural cooperatives for independent producers, including the development of marketing and processing facilities for other products. In the coffee growing areas of the country, therefore, it is possible that diversification of the coffee cooperatives, including admission to membership of farmers not producing coffee, might be the best way to fill the existing gap of a lack of cooperative structure for independent producers engaged in general agriculture.

FEHCOCAL notes that it has never been brought in as a participant in programs of international organizations such as AID to assist small and medium sized farmers. It believes that this arises from a misperception that it is an organization of larger producers rather than of many medium and small cultivators. While it will agree that a small coffee producer, by reason of the value of his production, is often better off than small holders in other crops, it regards as mistaken the idea that the average coffee grower has money. The aim of the Coffee Cooperative Federation, moreover, is not just to work on coffee but to help generally to improve the condition of its membership in a general way.

4. Comités Económicos of Small Coffee Producers

IHCAFE (Instituto Hondureño del Café) has a program of organizing small coffee producers cultivating 3 or 4 manzanas each of coffee into "pre-cooperatives" called Comités Económicos. Each group consists of about 10 to 15 farmers, largely located in areas not served by cooperatives.

The groups receive technical assistance from IHCAFE extensionists as groups rather than as individual farmers. They also obtain credit from BNF as joint liability groups. If a farmer is delinquent, however,

1/ There is an extensive CIDA report on prospects for allspice.

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the Institute pays for him and throws him out of the group. The Institute extensionists prepare the plans of investment for the groups.

At the present time, there are more than 100 such groups. In the opinion of the Institute, these small farmers are more receptive to technical improvement than the larger ones.

5. Cooperativa Agrícola Algodonera del Sur

The Agricultural Cotton Cooperative of the South is, in fact, a national cooperative, which unites almost all of the cotton producers of Honduras. It is an efficient organization that concentrates on doing one thing well and has no interest in joining the Confederation of Honduran Cooperatives or otherwise participating in cooperative or political activities.

In mid-1977, it had 408 members, of which 27 were collective farms (some cooperatives organized by INA before promulgation of Decree No.8, but mainly newer asentamientos). The cooperative has very few small independent farmer members since a minimum of 15 hectares is necessary to warrant aerial spraying. There are, however, a number of new small scattered cotton producers in the north of the Department of Francisco Morazán that produce without fumigation. This activity will presumably continue until such time as infestation strikes the area.

The cooperative reports that in the 1976-77 agricultural cycle, there were only 127 cotton producers--including 30 collective farms (coops and asentamientos). Of these, 50 producers were in Choluteca, 36 in Valle, 25 in Olancho, 12 in Francisco Morazán, and 4 in El Paraíso. Only six cultivated over 200 manzanas and none over 450; two-thirds produced on less than 50 manzanas. The total area cultivated was 7,222 manzanas, of which production was lost on 624. Total production was 192,516 quintales.

The number of manzanas in production in 1976-77 was down by 44% from the previous year and the volume produced by 39%. The cotton cooperative attributed this to expected price weaknesses in cotton and the Government guarantee of favorable prices for basic grains, which caused many producers to shift from cotton to grains.

The results of this year's operations were highly favorable despite the reduced volume , which gave the cooperative less opportunity to spread its fixed costs. The Cooperative was able to pay Lps. 42,00 a quintal compared with Lps. 33.66 the previous year.

The Cooperative had total assets of Lps. 2,718,000 as of July 31, 1976, and capital and reserves of Lps. 2,219,000. Its sales of cotton and cotton by-products in 1976-77 totalled Lps. 9,449,000 and its sales of inputs slightly over Lps. 1,000,000. It made a profit of Lps. 997,000. The Cooperative supplies only a portion of the inputs used by its members.

Cooperative members receive financing directly from BNF and commercial banks as does the Cooperative for its operations. The Cooperative itself extends little credit. It does, however, repay member's bank loans out of the proceeds of their harvest which, of course, guarantees BNF repayment unless a crop is substantially lost. In addition, the cooperative was able to borrow abroad on favorable terms (principally 6 months credit from the Bank of New Orleans to finance exports). Practically all production is exported.

The Cooperative provides technical assistance to its members in all aspects of cotton production. It has a staff of fifteen technicians (better than one to each 10 producers) consisting of 11 agronomists, two entomologists and two social workers. 1/ Of these, eight are provided by the Cooperative itself, three by INA, two by the Peace Corps, one by BNF, and one by the Israeli Agricultural Mission.

6. Forestry Cooperatives

DIFOCOOP (Directorate of Cooperative Development) and COHDEFOR (Honduran Corporation for Forestry Development) have been collaborating in the development of small cooperatives for production of forestry products. In this program, the role of DIFOCOOP is to organize the groups as cooperatives and educate them in the operation of their cooperatives. DIFOCOOP is provided with budgetary support by COHDEFOR for this purpose (Lps. 100,000 in 1977). COHDEFOR provides the groups with forestry exploitation privileges, technical assistance and credit.

Up to the present time, some 114 groups have been organized, of which 26 now have personería jurídica. The great majority are for the production of resin. A few are engaged in other fields, principally production of lumber. Total membership of the groups is between 3,000 and 4,000.

With respect to resin, the members of the cooperative groups distribute the difference between sales and costs according to the production of each member. Cooperative members who do administrative work or service funtions for the cooperative also receive shares. At the present time, members complain that the price of resin is too low, which apparently reflects a fall in price on the international market. However, for a reasonable day's work it still appears possible for a member to make about Lps. 4.00 per day. This is higher than normal pay for agricultural labor. Some members work full-time, while others also have other employment.

There is a small federation of five resin producers, which operates in a single area. It is not considered by DIFOCOOP and COHDEFOR to have potential as a general federation of the forestry cooperatives. There is a current tendency to unite small groups into zonal cooperatives.

1/ The social workers, provided by the Cooperative itself, serve primarily producers organized as groups. Three of the agronomists serve 18 agrarian reform groups and eight serve the balance of 109 producers, which also include some agrarian reform groups.

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The lumber producing cooperatives are required by COHDEFOR to operate with hand saws, which results in very rough cut lumber. While this provides more employment than machine operation, it raises the question as to whether cooperatives of small campesinos should be quite that disadvantaged in relation to other lumber producers and as to whether it might not be more economically advantageous to the localities served to be able to obtain lumber sawn to more precise dimensions.

COHDEFOR is interested in the possibilities of promoting agro-forestry groups that would be involved in both agricultural and forestry activities. This can offer advantages in terms of provision of better year round use of campesino labor. Agrarian reform groups, for example, that are located in forest areas but have somewhat limited agricultural potential, might well be able to work out a more advantageous work program by combining agricultural and forestry activities.

E. CENTRAL COOPERATIVE ORGANIZATIONS

1. Dirección de Fomento Cooperativo (DIFOCOOP)

This is an autonomous organization of the Government reporting to the Minister of Economy and Finance. Its responsibilities are essentially the development of cooperatives (including assistance in their formation and in the subsequent conduct of their educational and operational programs), the legalization of cooperatives, auditing and inspection of cooperatives, and general administration of the cooperative law.

The total budget of the office for 1977, including Lps. 412,900 for foreign donations, is Lps. 1,893,100 and the total staff (including some regional offices) is 112, including six contract empolyees.

The growth in the number of legalized cooperatives and federations from only a handful in 1960 to cover 600 indicates it has been active in working with cooperatives to achieve legal status. There have also been significant numbers of cooperative failures which have involved the office in a considerable amount of the unglamorous work of winding up their affairs.

With respect to cooperative development, DIFOCOOP has been endeavoring with 12 cooperative extensionists to cover the following cooperative fields: agriculture, livestock, forestry, fishing, small industry, commerce, transport and rural housing.

DIFOCOOP has recently been working with 20 ANACH groups in Jamastrán (consisting of 400 or more campesinos) that wish to form a regional cooperative organization. The work has consisted of developing a plan of organization and operation that would include credit and technical assistance for farm development and production, as well as marketing and storage programs

and facilities, a machinery pool, accounting center, and other facilities. If such a plan could be financed and realized, DIFOCOOP hopes that it would provide a pattern for organization of regional agrarian reform cooperatives through the country.

Cooperatives organized under the cooperative law are subject to periodic inspection by DIFOCOOP. This inspection takes two forms. The first is a general inspection to determine whether the cooperative, as a whole, and its various organizational entities and officers are functioning effectively, whether it is developing its program, whether it maintains current books of account, to what extent it maintains an educational program, etc. The second is a detailed auditing of the books of the cooperative.

DIFOCOOP's División de Inspección y Auditoría schedules approximately 100 inspections and 100 audits per year, with a staff of four inspectors and thirteen auditors. In practice, it accomplishes more so that it may be able to reach each cooperative and cooperative federation about every third year. The cooperatives to be inspected or audited are chosen in part on a rotation basis. In addition, some are selected because they have a particular need or desire to be audited—for example, if they have a financial or management plan or wish to negotiate for credit. Some cooperatives are not audited because they have failed to maintain current books or have never really established them. This is usually the situation with respect to agrarian reform cooperatives.

In the course of its work over the years, DIFOCOOP has been able to identify a number of promising possibilities for development of cooperative agricultural activities that would benefit small farmers. These include such projects as vegetable marketing, construction of storage facilities, production of fibers (henequen, jute, and ramie) and their processing into finished products, a cacao processing facility, a resin plant and honey production and marketing. While DIFOCOOP has been able to achieve some constructive results on some of these projects, it lacks the capital or access to capital necessary for export feasibility studies or for carrying out adequately financed development projects.

2. Honduran Confederation of Cooperatives

The Honduran Confederation of Cooperatives has been in existence for about two years. It was established as an outgrowth of ground work laid by the Comité Nacional de Integración Cooperativista, which was organized in 1974. The Confederation leaders consider that it has two primary functions.

1. To represent the entire Honduran Cooperative Movement before the Government.

2. To support its constituent federations.

The Confederations unite most of the cooperative federations of the country--including FACACH (credit unions), FECOVIL (housing), FENACOTRAL (Passenger transport), FECOAGROH (Agriculture), FECORAH (Reform Sector, Agriculture), FENACOCAL (sugar cane), and FEHCOCAL (coffee). Applications are pending from FECAFOR (forestry) and FECOTRAC (transport of goods). It is anticipated that an industrial federation will be formed and will affiliate. In addition, the Pre-Federación de Cooperativas de Servicios Múltiples (consumer goods plus some agricultural activities) considers that it is already participating informally and would join when it acquires legal personality. The Confederation also has a working relationship with FUNHDESA (especially through its educational institute, described below).

The main cooperative groups in the country not affiliated with the Confederation consist of the cooperatives organized by the labor Federation FESITRANH and its campesino affiliate, ANACH. The basic reason for this is a difference in philosophy between the Labor Federation and the Cooperative Movement. The Cooperative Movement views itself as non-political and wants to unite people regardless of their political or other affiliations.

The labor unions on the other hand, regard themselves as instruments to further politically, economically, and socially the interests of the particular constituencies they represent. Accordingly, they do not organize cooperatives on an open membership basis but rather for the specific purpose of furthering the economic interest of the groups they serve. While in form of organization, their cooperatives are similar to those of the main cooperative movement, they do not have roots in the Rochdale philosophy.

The organizations participating in the Confederación feel that they share a basically common philosophy. One element of this is that they do not wish to clash with private enterprise, but rather seek coordination and complementarity. The Confederation leaders also feel that the essence of the cooperative spirit is for members to wish to help others and that this includes an obligation on the part of those strongly organized to assist those who are weakly organized or not organized at all.

The Confederation itself does not have an independent staff. Its officers and committee members are officials of member cooperative organizations. The Confederation does, however, have one important dependency (an educational and research institute) which has physical facilities and which is described immediately below.

One of the important projects of the Confederation at this time is to prepare a draft of a revised cooperative law to meet the needs of the more mature cooperative movement that exists today.

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Leaders of the Confederation are aware of the lack of cooperatives to serve a large section of the rural population, both members of the agrarian reform and independent small farmer outside specialized sectors, such as coffee and cotton. They believe that the Confederation can play an important and useful role in the planning and development of such cooperatives. They point out that the cooperative movement is interested in small farmers as well as larger ones. The current president of the Confederation, Francisco Rodezno, who is also President of FEHCOCAL, is a small farmers with about a dozen manzanas of coffee. The Secretary, Rubén Solano Díaz, has been active over a period of years, working in organizing and assisting agricultural and other types of cooperatives.

3. Instituto de Formación e Investigación Cooperativista (IFC)

The Institute for Cooperative Education and Research was founded late in 1974 by the Comité Nacional de Integración Cooperativista (forerunner of the cooperative confederation). The primary objective was to develop an organization that would be able to provide a comprehensive cooperation education program for all sectors of the cooperative movement of the country. In the process of developing the Institute, it obtained substantial external support, primarily from the Naumann Foundation of Germany (which has made various contributions and is providing technical assistance over a period of five years) and the Inter-American Foundation. Some of its courses have also been financed by Catholic Relief Services.

The Institute also received initial support through donations from FACACH and FEHCOCAL and through advance payments from various Honduran cooperative organizations for services to be rendered.

During 1976 the Institute had income from all sources (including external aid) of Lps. 335,000 and expenses of Lps. 228,000. Local receipts, including payment by cooperatives for courses offered, amount to Lps. 47,000. The Institute hopes to be 75% self-supporting within five years.

During 1976 the Institute gave 127 seminar courses totalling 3,040 hours to a total of 3,686 students. Most of these courses were for, general cooperative committees and officers--Consejo Administrativo, Junta de Vigilancia, Comité de Educación, Comité de Crédito, Gerentes and Technicians. In 1977 courses in accounting were added. The Institute has been giving priority attention to the agricultural sector, including agrarian reform cooperatives and forestry cooperatives. About 34% of participants in courses came from agricultural cooperatives.

With respect to research, the Institute is prepared to draw on its own staff and outside experts to make studies on any problems related to cooperatives. In 1976 studies were made of (1) the impact of cooperative education in changing attitudes of members and elected officers in improving the cooperatives; (2) the consumer cooperative sector, and (3) the reasons for success of credit unions and of their weak points, comparing this type of cooperative with others.

The Institute also maintains a small printing facility which produces very attractive educational materials and does other printing for the cooperative movement, such as bus tickets for the transport cooperatives. It has a particular interest in acquiring printing equipment to produce accounting materials.

The Institute has a staff of 20, including secretaries and clericals, as follows:

Directorate	2
Administration and Printing	7
Planning and Research	2
Education	9

During the early part of 1977 the Confederation caused a change in management of the Institute which it believes is making it into a stronger and more useful organization. The basic change was to get away from giving courses based primarily on the Institute's analysis of needs and to concentrate on meeting the actual demands of cooperatives themselves by designing courses they want.

The Institute does not require that participants in its courses be members of legally constituted cooperative groups. Thus, it would be glad to have among its participants members of ANACH, UNC, or independent groups. It would, moreover, be willing to structure courses specifically to meet the needs of such groups. While ANACH now participates in courses sponsored by DIFOCOOP, it has little awareness of the Institute other than a general impression that it is doctrinally oriented. The nature of the recent change in direction of the Institute suggests that a relationship with ANACH might now be more feasible.

F. OTHER ORGANIZATIONS

1. FENAGH and its Associations of Farmers and Cattlemen

There are forty associations of farmers and cattlemen in Honduras, of which 33 are affiliated with the Federación Nacional de Agricultores y Ganaderos de Honduras (FENAGH--National Federation of Farmers and Cattlemen of Honduras).

The purpose of the associations and the Federation is to bring together individual cattle raisers and farmers of the country to exchange ideas on how to develop and protect their business interests. The Federation and associations present the viewpoints of their membership to the Government and to the media. The Federation does not concern itself with local problems but is used when strength is needed on national matters.

The size of the landholdings of the members varies considerably. Some have as few as 50 manzanas while, on the other end of the scale, there are many with very substantial holdings. The associations are not large in number and total membership probably does not exceed 2,000. However, the groups include many individuals who are important in their communities and in national affairs.

The Federation and associations are organized under the law of associations, which is adequate for their purposes. This is simpler than to organize cooperatives. Further, the associations are not engaged in any type of business. They do not buy, sell, import, export, provide technical assistance, provide credit, etc. AGAS, in San Pedro Sula, sponsors an agricultural, livestock and industrial fair.

Reform Group Zonal Centers

If the diagnosis that collective farms suffer from a lack of integrated management both internally to the farms and externally in the organization of the support provided to them is correct, then the prescription must lie in organizational changes that permit an integrated management approach. One solution is that collective farms be grouped in zones consisting of about 20 farms in each zone, and that each group of collective farms be served by a service center that has the responsibility to render comprehensive and integrated management and support services. Such centers would replace the current pattern of services and visits now provided by INA, MNR, DIFOCOOP and other Government agencies, and would exercise detailed supervision over credit from BNF.

Each such center would be provided with an integrated professional technical assistance group that would consist of the following:

1. Manager/Farm Management Technician
2. Agronomist
3. Accountant and Business Manager
4. Promoter/Coordinator of Cooperative and Collective Farm organization and operation.

The manager would have overall responsibility to work with the collective groups in the development and execution of farm plans, the securing of credit, the development of markets and market arrangements, and the coordination of all aspects of the program. As the key man in the center, the manager should be an individual with the capacity (and preferably demonstrated record of experience) to manage and operate a farm successfully. As Honduras is a farming country with many successful farms, persons of such administrative capability must exist. He should also have the personal qualities of leadership and empathy with the campesino groups to work patiently with them to develop their potential to manage their farms rather than dominate their affairs.

The agronomist would assist in the farm planning and do most of the field work in providing technical agricultural assistance to the groups and identifying and solving production problems. The accountant would work continuously with the groups on basic accounting and other records that must be maintained at farm level, in preparing periodic statements, in discussing financial planning, and in supervising credit. The Promoter/Coordinator would provide technical assistance to the groups to organize their cooperative and collective efforts so that they can work efficiently and solve organizational and personality problems that impede effective operation. He would coordinate training needs (including on-the-job) and assure follow through. He would also coordinate with Food-for-Work Programs, activities of campesino organizations, Junta de Bienestar Social, and others that can benefit the groups.

While each of these individuals would have particular specialties (and the combination is designed to provide complementary talents) the basic concept is that the four would work as a team for a single employer and under the direction of the Manager.1/ Each would be expected to complement and assist the others, and functions would not be allowed to lapse during temporary absence of one team member. Further, the technicians would be supported by a small group of para-professionals selected from among the campesinos for ability and trained principally on-the-job to perform recurring operations and assist in trouble shooting.

The center should also be able to draw on outside support from MNR, INA, DIFOCOOP and other Government agencies for assistance in specialized problems requiring expertise or services that it does not possess, or alternatively to turn to private sources where this appears appropriate. The aim of the center, however, should be to become as self-reliant as possible and to avoid dependence upon uncertain sources of support.

The establishment of viable zonal centers involves several organizational issues. The first is that the zonal system must be regarded as a substitute for existing Governmental support systems and not the addition of a new layer of staff. Otherwise, the cost of supporting collective farms would become so great as to discredit the system entirely.

The second problem is the organizational form that the centers themselves should take. There are three basic alternatives:

1. To organize centers as cooperative or quasi-cooperative zonal (second degree) organizations of the reform groups themselves, with full integration of the professional teams into the management of the cooperatives as employees directly responsible to the campesino Asamblea General and leadership.

2. To organize centers as cooperatives as above but with the professional staff serving as a technical advisory team supplied by Government.

3. To organize centers as Government technical advisory units without formation of zonal second-degree campesino organizations.

Whatever form of organization is adopted, the program must work in such a way as to achieve a balance between respect for campesino management of their own affairs and protection of the interests of the Government in its investment of time and money. There has to be partnership in which

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1/ Possibly, MNR, INA, regional agricultural offices, or a zonal cooperative. Having each specialist work for a different agency would probably be fatal to the plan.

the campesinos themselves participate in planning and technical discussions, have the ultimate power of decision-making and grow in the capacity to manage their own affairs with diminishing reliance on technical staff. This means that technical staff must not, in its desire to see things done, simply seek to impose its will. At the same time, the Government must have effective protection against the misuse of Government services, property and loans.

The first system would probably be the more effective working model since it would give the technical staff the strongest sense of identification with the zonal organization and the participating reform groups. In this model the Government would heavily subsidize the technical staff, but the groups would be expected to provide some part of the support. The campesinos would have the right to select or approve the technicians, subject to approval of their professional qualifications by Government agencies concerned (e.g., BNF and DIFOCOOP with respect to the accountant). These and related points could be covered by an agreement between the Government and the cooperatively organized center or a sponsoring national campesino organization. If, however, this type of organization cannot be agreed upon or achieved, the second possibility could be undertaken; it would be easier to establish and experience would lead progressively toward the first form.

The third alternative is the least attractive, but the facts of life may make it the only feasible form of organization in certain areas. A major problem in the achievement of cooperation and of zonal organizations among agrarian reform groups is the factionalism that divides the groups. ANACH groups will work with ANACH groups; FECORAH groups with FECORAH groups; Empresas Asociativas with Empresas Asociativas; independent groups probably in most cases with other independents; and UNC groups with other UNC groups, except perhaps to the extent they have defected to UNCA. To what extent groups with different affiliation will work together, however, is less clear. Some probably can, but the level of acceptance may not be the same in all cases at both local and national campesino leadership levels.

Probably the best solution for Government is to leave it up to the reform groups themselves to decide how they want to group. In many areas this will probably mean that groups of the same affiliation will wish to group together. In areas in which there are few groups of any one affiliation, at least some may be able to work out an arrangement. In other areas it is possible that not enough groups are willing to work together jointly to form a central, in which case the third option would be the only choice left. Over time better solutions should emerge. In any event, there will probably be need for considerable flexibility to meet varying requirements in varying zones.

The cost of a zonal center program to the Government should not exceed costs now incurred to support collective farms through an unintegrated

system. Instead, there should be the prospect of significant savings. However, there is implicit in the plan the expectation that the center will be given significant support in farm planning, credit, etc., on terms similar to those now provided under various model programs and special projects but not available to all groups.

Inspection of Agrarian Reform Centers

It will not be enough simply to organize agrarian reform service centers and then to assume that all will function well. There should be a system of continuing inspection to assure that they are in fact conducting efficient integrated programs which are producing results in developing campesino management capability, improved farm operations, and the effective use of credit.

Accordingly, a small inspection service would be organized to make periodic visits to centrals for the following purposes:

1. To assess the effectiveness of the functioning of the center;
2. To prepare efficiency reports on key personnel;
3. To appraise the quality of farm development plans and the progress being made in following them and intelligently adopting them in the light of circumstances encountered; to pinpoint problems and to determine the factors responsible;
4. To determine whether credit is being solicited and managed effectively and prudently;
5. To audit the accounts of the center and collective farms;
6. To meet with and hear complaints of the campesino directors of the collective farms being served;

The inspection teams could be designated by and report to the Agrarian Policy Commission (CPA), where problems that were not resolvable at the local level would be surfaced. Participation by campesino federations should be considered.

Administration of Credit through the Proposed Centers

Probably the single most difficult program in the support of collective farms is the administration of credit on a basis that provides the agrarian reform groups with what they need in timely and continuing fashion while at the same time protecting the State against unreasonable losses. An improvement in the solicitation, administration, and utilization of credit is one of the major objectives of the proposed reform group centers, it merits some specific comment.

Through centers it would be intended to improve credit in the following respects:

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A. Integration of credit with the farm management process

Credit would be applied for by the zonal center on the basis of plans developed by the groups with the technical assistance of the zonal teams and approved by their general assemblies. This will assure that credit sought is well related to farm plans and needs. It will also assure continuing supervision over the use of the credit and continuing emphasis on the solution of operating problems (untimely arrival of inputs, quick response to disease or other technical problems, etc.) that may jeopardize farm results and the recuperability of credit.

B. Guarantees against the harvest

Loans would be granted with guarantees of payment out of harvest and with suitable arrangements for payments by purchasers through the central accountant. There would also be periodic pre-estimates of harvests by the center agronomist to establish a basis for investigation of possible diversion

C. Flexibility in loan components for wages and subsistence

The system of providing reform groups automatically with money to make wage payments to members for days worked would be abandoned, particularly where there is high risk that such amounts could not be repaid out of harvests. The center should attempt to develop additional income through arrangements for food-for-work programs, farming of individual parcels and on house lots, auto-financing out of surpluses from harvests in good years, and other means to shift from a wage to a profit-sharing system. Obviously, in many cases (e.g., where a group is largely concentrating on the development of a permanent crop that takes years to reach production), loans for subsistence purposes will be desirable. The size of loans for such purposes, however, should depend upon the subsistence needs of the groups rather than an arbitrary formula of so much per day of labor. Generally speaking, it is the desire of the groups to be joint entrepeneurs rather than wage laborers on their own farms. Credit programs should contribute to this kind of enterprise.

D. Program of capitalization

Through centralized accounting assistance, it would be contemplated that programs would be developed for capitalization of the collective farms in an orderly way, consistent with wishes of the groups, practical potentialities, and terms of credit.

E. Identification of causes of credit delinquency and means of correction

As soon as the delinquency occurs it should be immediately investigated to determine its cause. If, in fact, the cause is abuse of the credit by

the borrowing group, this may justify the suspension of further credit, at least until adequate corrective steps are taken. The basic aim of investigating delinquency, however, should be constructive--to determine as specifically as possible the extent to which delinquency may have resulted from such factors as natural catastrophe, faulty support services, unanticipated technical, managerial or marketing problems, etc. The investigation should also determine what measures can be taken to correct the problems that caused delinquency and to achieve proper financial management both of the delinquent amount and of future credit necessities.

Investigation of the cause of credit delinquency should be made in the first instance by the Junta de Vigilancia of the center (if organized in the form of a second-degree reform organization) with the assistance of the accountant. There should be a further review by the Inspection Service, which would be especially required to comment on credit delinquencies in its reports.

Regional Private Farm Cooperative Network

The model of regional agricultural cooperatives proposed is based on that now used in Guatemala. 1/ This involves the establishment of a single legally established cooperative on a regional basis (more or less of department size) through which services are rendered to individual members, most of whom are organized into informal groups in the various villages. The cooperative program consists of savings and credit, supply of fertilizer and some other inputs, and some technical assistance. The orientation is mainly towards basic grains. However, there are a number of reasons why a carbon copy of the Guatemalan model would not serve for Honduras. First, while the Guatemalan concept of regional organization is commendable, it goes too much in that direction with not quite enough attention to organization at village level. Second, the Guatemalan regionals declined to deal with already organized cooperatives within their region; a more open system in which the regionals can service existing local cooperatives and even work with agrarian reform groups is preferable for Honduras. Third, the focus of interest of the cooperative should be broader--that, while it should take interest in improving and increasing production of basic grains, it should also focus attention on diversification possibilities. Finally, the Guatemalan model was conceived as a self-sustaining system independent of the Government extension service (although in a few cases Government extensionists were provided to the cooperatives). For Honduras it is preferable from the outset, that the system involve the effective participation of MNR; a small farmer cooperative system in Honduras is simply not going to be able, at least for some time, both to achieve financial viability and to pay the salaries of an adequate number of agronomists on its own staff.

Accordingly, the model proposed would involve essentially the following elements:

1. Base Unit Organizations: Village level farmer associations normally organized without *personería jurídica*, bookkeeping systems, etc. They would have officers to call meetings and to maintain liaison with the cooperative, MNR extension service, etc.

2. Regional Cooperative Organization: A regional cooperative with *personería jurídica* would be organized at Department level. All members of village level associations would be automatically members and in addition those in isolated areas of the region would be able to join individually. The regional organization would have strong professional management.

3. Extension Service: MNR would assign extension agents to work exclusively with the cooperatives and their organized groups

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1/ Federación de Cooperativas Agrícolas Regionales (FECOAR).

Best Available Document

and to train para-professionals to extend the scope of such services.

The program suggested for the regional cooperatives would be roughly as follows:

1. Savings and Credit. The credit system should be similar to that used by the credit union movement and also by small farmer agricultural cooperatives such as FECOAR in Guatemala. In other words, members should be required to make a small capital investment and then continuously to save through the capitalization of a portion of the loans they receive. It insures peer pressure to require repayment of loans. It creates savings, which eases the Government's burden, strengthens the development process, and encourages self-reliance rather than perpetual dependence on credit for all of a farmers' needs.

As a prudent initial savings and credit policy, which is flexible and generous enough to have impact while both sufficiently limited and diversified to reduce risk, the following is suggested as a basis for preliminary consideration.

(a) Requirement of annual aportación of L. 5.00 for farmers with less than 5 manzanas and L. 10.00 for those with over 5.

(b) Credit for inputs purchased from the cooperatives not to exceed four times the amount of aportaciones, or the amounts technically recommended for three manzanas of production, whichever is greater.

(c) Credit on medium term up to four times the amount of aportaciones for members preferring to use credit for acquisition of animals, other capital improvements, or planting of permanent crops. This could be exceeded for members participating in specific animal or permanent crop development projects for which technical assistance is provided.

(d) In the case of farmers lacking adequate family manpower or animal power, credit for such inputs to the extent they can be supplied by other members who will accept payment in the form of an increase in their aportaciones.

(e) Monthly interest of 1% and a requirement to borrow 10% in addition to loan amount to be capitalized as aportaciones.

(f) Capitalization of 1% of proceeds of any goods marketed through the cooperative.

(g) Acceptance of rural deposits (against which no borrowing would be permitted) at a rate of 6% for those interested only in a savings plan. Holders of such accounts could also receive a

small discount for cash purchases of inputs.

(h) Consideration, particularly in drought areas, of some further provision, possibly against payment of an interest premium, for "crop" insurance (partial forgiveness of debt for serious crop failure).

2. Input Supply. The cooperative would supply at competitive prices the principal inputs generally required in its area or in connection with specific projects it sponsors.

3. Production Assistance. MNR technicians would meet with the various village organizations as groups, the meetings to be arranged and scheduled through the cooperative structure. The cooperative and extension agents would mutually work out the program, which might well include (a) basic grains, (b) three or four diversified cash crops for which there are good markets, (c) poultry and animals; and (d) garden plots and fruit trees for diversified home consumption and limited local marketing. One or more members of each group would be trained at central points in the region and through on-the-job training as para-professionals for each project. At least one farm of a para-professional in each locality would be used as a demonstration farm. Para-professionals would be essentially unpaid volunteers, but could receive benefits in the form of free inputs.

Before the program is initiated in any given area there should be a thorough agro-economic study made of the region to determine the following things: (a) an economic profile of the small farmers of the region and their problems as objectively observed and as perceived by them; (b) the crops and other products that should be promoted and for what markets; (c) the types of technology and inputs that should be recommended, with particular care to avoid the recommending of extensive use of fertilizer and other inputs under conditions of high risk for moderate economic return; (d) the types of backup support that can and should be provided to extensionists, such as soil testing and research information, to supplement their general information and to enable them to find solutions to specific problems; (e) the feasibility of collaborative projects with COHDEFOR.

4. Marketing Assistance. The regional cooperative would endeavor to negotiate improved marketing arrangements for its groups.

5. Grain storage. The regional cooperative would work with local groups to establish village (aldea) level grain storage facilities, essentially to meet year round village demand. It would consider other facilities at central points where economically justified.

6. Communications and Transport. Each regional cooperative could be equipped with vehicles that would make regular rounds to the aldeas of the region. These vehicles would be in effect combination mobile rural banks and input supply stores. (For bulkier products, such as fertilizer, supplementary arrangements would have to be made.) This system will eliminate the inefficiencies of village level stock-keeping and bookkeeping.

A plan along these lines should be tested in two or three regions before being adopted with national scope. The capital required to mount a strong effort should be around $1,000,000 per region spread over a four year initial period, after which the cooperative should be essentially self-sustaining.

At the beginning, no attempt should be made to establish a federation for the regionals. This could be considered at a later point in time. However, it would be desirable for the regionals to have a formal relationship with FACACH for technical assistance and support in the operation for their savings and loans program. Indeed, there would be no objection to their formal affiliation with FACACH if FACACH were prepared to accept them and if this would in no way preclude dual affiliation with second degree agricultural cooperatives.

TABLE I

SUMMARY DESCRIPTIONS OF PROJECTS PROVIDING EXTERNAL FINANCING TO THE AGRICULTURAL SECTOR BY DONOR AGENCY*

I. INTERAMERICAN DEVELOPMENT BANK (IDB)

A. Active Loans

1. National Animal Health Program (395/SF-HO)

Donor Contribution: $4.4 million. Dates: Dec., 1974 - July, 1979

Description: Assistance to Ministry of Natural Resources in the creation of a national animal health infrastructure to effect control and eradication of brucelosis and bovine tuberculosis.

Inputs: Technical Assistance
Training
Commodities

Status: 20% disbursed

2. Integrated Agricultural Development of the Lower Aguán - Stage II (479/SF-HO)

Donor Contribution: $40 million. Dates: Jan. 1977 - June, 1982

Description: Comprehensive assistance to National Agrarian Institute to consolidate the development efforts with 3,200 families settled in 20 cooperatives in Stage I and to settle an additional 3,000 families. Program finances African palm cultivation for the domestic market, citrus for external markets and basic grains and garden vegetable production as well as certain supporting services and infrastructure.

Inputs: Technical Assistance
Commodities
Credit

Status: 10% disbursed.

3. Olancho Industrial Development Project - Stage I (495/SF-HO)

Donor Contribution: $59.5 million. Dates: Jan., 1977 - March 1981

Description: Assistance to the Honduran Forestry Development Corporation (COHDEFOR) and the Ministry of Communications, Public Works

* Data as of January 1, 1978.

and Transportation with Stage I in the development of the Olancho Forest Reserve. Involves construction of the main road infrastructure connecting the proposed pulp and paper industrial complex and Puerto Castilla on the north coast of Honduras. Also finances feasibility studies and design of the three sawmills and training for COHDEFOR staff.

Inputs: Technical Assistance
Training
Commodities
Other Costs

Status: Awaiting completion of conditions precedent to disbursement.

4. Olancho Industrial Development Project - Stage II (16/UF-HO)

Donor Contribution: $25 million. Dates: June, 1977 - July, 1980

Description: Assistance to the Honduran Forestry Development Corporation in financing the construction of the main sawmill through provision of financing of the capital stock for establishing the Financial Corporation of Olancho. Also includes feasibility studies, worker housing and training programs in logging operations and mill management.

Inputs: Technical Assistance
Training
Equity Financing

Status: Undisbursed

B. Non-Reimbursable Assistance (Active)

1. Institutional Reorganization (Animal Health) Ministry of Natural Resources (ATN/SF-1291-HO)

Donor Contribution: $420,000 Dates: Dec., 1974 - June, 1979

Description: Assistance to the Ministry of Natural Resources in reorganizing the Office of Animal Health so as to improve the implementation of the National Animal Health Program (Loan 395/SF-HO) by improving the skills and productivity of program participants. Training is in organization, epidemiology, biostatistics, administration and organization of pathology laboratories.

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Inputs: Technical Assistance
Training

Status: 10% disbursed

2. Technical Assistance to the Sula Valley (ATN/TF(SP)-1336-HO)

Donor Contribution: $750,000. Dates: Dec., 1974 - Dec. 1978

Description: Assist the Ministry of Communications, Public Works and Transportation with feasibility plans and design studies for flood control and integrated development of the Sula Valley.

Inputs: Technical Assistance

Status: 60% disbursed.

3. Institutional Reorganization for the Honduran Forestry Development Corporation (ATN/SF-1337-HO)

Donor Contribution: $125,000. Dates: Dec., 1974 - June, 1978

Description: Preparation of institutional and organization guidelines and manuals for improving the administrative, accounting and financial skills within the Honduran Forestry Development Corporation.

Inputs: Technical Assistance

Status: 80% disbursed.

4. Technical Assistance for the Quimistán Valley (ATN/TF(SP)-1367-HO)

Donor Contribution: $370,000. Dates: June, 1975 - March, 1978

Description: Completion of the feasibility studies and design for the Ministry of Natural Resources of a system to irrigate 3,080 hectares in the Quimistán Valley.

Inputs: Technical Assistance

Status: 65% disbursed.

5. Aguán Valley Institutional Support for the National Agrarian Institute (ATN/SF-1493-HO)

Donor Contribution: $150,000 Dates: Jan. 1977 - May, 1981

Description: To assist the National Agrarian Institute with Lower Aguán Valley Development Program Stage II by improving the technical and administrative capacity of the National Agrarian Institute's technical and professional staff and that of participating agricultural cooperatives concerning cultivation and processing of African palm and citrus.

Inputs: Technical Assistance
Training - Local and overseas scholarships

Status: Initiating implementation

6. Overseas Scholarships for the Honduran Forestry Development Corporation (ATN/SF-1519-HO)

Donor Contribution: $100,000. Dates: Jan., 31, 1977 - March, 1981

Description: Scholarships for the Honduran Forestry Development Corporation staff in Forestry Management and Development, Forestry Production, and Administration of forestry-based industries for post-graduate and technical special studies.

Inputs: Training/Scholarships

Status: Undisbursed.

7. Institutional Support to the Honduran Forestry Development Corporation (ATN/SF-1570-HO)

Donor Contribution: $49,500. Dates: Sept., 1977 - March, 1979

Description: Institutional technical support to the Honduran Forestry Development Corporation in preparing and implementing the Olancho Industrial Development Project.

Inputs: Technical Assistance

Status: Undisbursed.

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8. Pilot Corn and Beans Project (PROMYF) (TF-1415-RE(3)

Donor Contribution: $525,000. Dates: April, 1976 - April, 1979

Description: An applied research and extension project which will establish a methodology for testing and transferring technology designed to increase the production and productivity of corn and bean crops for small and medium-sized individual and group farmers.

Inputs: Technical Assistance
Training
Commodities

Status: Implementation on schedule.

9. African Palm Industrialization (SF-1420-HO)

Donor Contribution: $200,000. Dates: 1977 -

Description: Assistance is being provided to the National Investments Corporation (CONADI) to support improvement of its capacity to participate in the expansion of African Palm processing in Honduras.

Inputs: Technical Assistance

Status: N.A.

C. Loans Under Negotiation

1. Corn and Bean Project - Stage II

Donor Contribution: $6 million.

Description: Expands Stage I (grant-funded) research and extension assistance to MNR to increase research and extension outreach in corn and bean production to Agrarian Reform beneficiaries. Includes new components of improved seed production, soil management and small livestock production.

Inputs: Technical Assistance
Commodities
Training

Status: In early negotiation stage.

2. Olancho Industrial Development Project - Stage III

Donor Contribution: $15.0 million.

Description: To assist COHDEFOR with the design, construction, and construction supervision of the secondary roads planned for the development of the Olancho Forest Reserve.

Inputs: Technical Assistance
Commodities

Status: Undergoing study and project document preparation.

3. Development of Fisheries (Cooperatives)

Donor Contribution: $1.58 million.

Description: Credit to fishing cooperatives through MNR, BNF, and DIFOCOOP for small motor-boats, fishing equipment, and equipment for storing and processing shrimp and fish.

Inputs: Credit
Commodities

Status: Approved by BID, awaiting final signature by GOH.

D. Non-Reimbursable Assistance Under Negotiation

1. Corn and Bean Loan Administration

Donor Contribution: $1.75 million.

Description: To assist MNR administer and implement the Stage II Corn and Bean Loan.

Inputs: Technical Assistance
Commodities

Status: In early negotiation stage.

II. WORLD BANK - INTERNATIONAL DEVELOPMENT ASSOCIATION (IBRD - IDA)

A. Active Loans

1. Second Livestock Development Project (434-HO)

Donor Contribution: $6.6 million. Dates: Sept., 1974 - Sept., 1983

Description: Funds to Central Bank of Honduras to assist in financing dairy, and livestock fattening operations.

Inputs: Technical Assistance
Credit

Status: 50% disbursed.

2. Agricultural and Livestock Development Project (628-HO)

Donor Contribution: $14 million. Dates: Aug., 1977 -

Description: Financing to the National Development Bank and Ministry of Natural Resources for investments for dual purpose small beef/dairy farmers, livestock fattening operations, seed and crop improvement, 2 rice mills and 4 food processing industries, and technical assistance to strengthen agrarian reform efforts. IICA is funding $140,000 for the coordinator of the $2.2 million Seed Research and Extension Program component.

Inputs: Technical Assistance
Credit
Other costs

3. Education and Training of Professionals (452/954-HO)

Donor Contribution: $6 million. Dates: Nov., 1974 - June, 1978

Description: Agricultural Education loan that includes funds to improve the educational facilities of the pre-university level agriculture schools in Catacamas and La Esperanza.

Inputs: Technical Assistance
Commodities
Vehicles
Construction Financing

Status: Almost all disbursed.

III. UNITED NATIONS - WORLD FOOD PROGRAM (WFP)

A. Food Assistance - Active Grants

1. Production of Basic Grains and Development of Rural Infrastructure (HON/2283)

Donor Contribution: $5,456,000. Dates: Aug., 1977 - Aug., 1981

Description: Food-for-work commodities supplied to the Ministry of Natural Resources and the National Agrarian Institute to assist the agrarian reform participants in the first year of cooperative establishment.

Inputs: Food

Status: Food deliveries initiated August, 1977.

2. Rural Development and Rehabilitation Through Cooperation Phase I (HON/718)

Donor Contribution: $1,771,500. Dates: May, 1973 - June, 1978

Description: Food-for-work commodities coordinated by the Superior Council for Economic Planning (CONSUPLANE) to create labor intensive employment in the construction of small socially beneficial agricultural and other sector infrastructure projects. Target participants are non-agrarian reform small farmers outside of Choluteca.

Inputs: Food

Status: N.A.

B. Food Assistance - Grants Under Negotiation

1. Rural Development and Rehabilitation through Cooperation Phase II

Donor Contribution: $7,236,700 (est.).

Description: Food-for-work commodities coordinated by CONSUPLANE to create labor-intensive employment in the construction of small socially beneficial agricultural and other sector infrastructure projects. Target participants are non-agrarian reform small farmers outside of Choluteca.

Inputs: Food

Status: Scheduled for initiation in July, 1978.

IV. UNITED NATIONS DEVELOPMENT PROGRAM (UNDP AND OTHER UN TECHNICAL AGENCIES)

A. Active Grants

1. Development Planning - Phase II (HON/76/001)

Donor Contribution: $447,400. Dates: July, 1977 - July, 1979

Description: Assist the Superior Council for Economic Planning evaluate implementation of the 1974-78 National Development Plan and to formulate the agriculture sector portion of the 1979-83 National Development Plan.

Inputs: Technical Assistance in development planning, agricultural economies and water resources.

Status: 20% disbursed.

2. Crop Improvement and Diversification (FAO) - Phase II (HON/77/001)

Donor Contribution: $578,870. Dates: July, 1977 - March, 1979

Description: Technical training assistance to the Ministry of Natural Resources' agricultural extension staff and recipient small farmers by specialists in agricultural extension, rural sociology. horticulture, rice cultivation and irrigation to increase agricultural production and productivity.

Inputs: Technical Assistance
Training
Commodities
Administrative Support

Status: 35% disbursed.

3. Agrarian Reform Farmer Training - Phase II (FAO) (HON/77/002)

Donor Contribution: $534,000. Dates: Feb., 1978 - Feb. 1981

Description: Assist the National Agrarian Institute in formulating policies for the reform sector and in implementing the technical training program to develop the organizational, technical and administrative skills of the beneficiaries of agrarian reform. Technical assistance is in agricultural extension, mechanical agriculture, business administration, veterinary medicine and domestic science.

Inputs: Technical Assistance
Training/Overseas Scholarships
Administrative Support

Status: Implementation to begin February, 1978.

4. Forestry Production and Industry Development (FAO) (HON/75/004)

Donor Contribution: $1,112,375. Dates: Dec., 1975 - Dec., 1979

Description: Assistance to the Honduran Forestry Development Corporation (COHDEFOR) in organizing and coordinating their forestry operation and management activities and completing regional forestry inventories. Also includes feasibility studies for possible secondary industrial uses of forestry products.

Inputs: Technical Assistance
Training/Scholarships
Commodities
Administrative Support

Status: 50% disbursed.

5. Forestry School Assistance - Phase II (RLA/75/006)

Donor Contribution: $150,000. Dates: Feb., 1978 - Feb., 1979

Description: Assistance to the Honduran Forestry Development Corporation (COHDEFOR) to train staff and students of the Forestry School in Siguatepeque, Honduras. Technical assistance is in forestry planning, forestry management and forestry education.

Inputs: Technical Assistance
Commodities

Status: Scheduled for initiation in February, 1978.

6. Flood Control and Irrigation in Southern Honduras (FAO) (6/HON/03/I)

Donor Contribution: $93,000. Dates: Oct., 1977 - Sept., 1978

Description: Technical assistance is being provided to assist in a regional activity to design and construct small dams to control flooding and to provide a source of water for irrigation.

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Inputs: Technical Assistance

Status:

7. Campaign Against Coffee Rust and Broca (FAO) (6/HON/04/E)

Donor Contribution: $65,000. Dates: Oct., 1977 -

Description: Technical assistance to the Government of Honduras to combat and control coffee rust and broca in Honduras.

Inputs: Technical Assistance

Status: N.A.

8. National Livestock Development Planning (HON/77/007)

Donor Contribution: $105,000. Dates: March 1, 1978 - May, 1978

Description: Assist the MNR, Office of Animal Health to carry out a health assessment, to develop a national livestock plan, and to formulate recommendations for specific development projects.

Inputs: Technical Assistance

Status: Agreement signed Nov. 25, 1977. Project begins March 1, 1978.

B. Grants Under Negotiation

1. Watershed Management Project (HON/77/006)

Donor Contribution: $674,343. Dates: April 1, 1978 - 33 months

Description: Assist COHDEFOR in activities related to watershed preservation, concentrating on the watersheds of Sierra Omoa and Santa Ana and subsequently of the Aguán, the El Cajón Dam, and Lake Yojoa. T.A. are in reforestation.

Inputs: Technical Assistance
Overseas Scholarships
Equipment
Administrative support

Status: Previous assistance (HON/75/109) was completed Nov. 30, 1977.

V. ORGANIZATION OF AMERICAN STATES (OAS)

A. Active Grants

1. Integrated Rural Development - Western Honduras

Donor Contribution: $379,000. Dates: June, 1977 - June, 1979

Description: Grant Assistance to several agencies of the Government of Honduras, including the Superior Council for Economic Planning, the Ministry of Natural Resources and the National Welfare Board, to carry out a pilot, integrated development project in Western Honduras. Project activities include crop improvement, livestock development, marketing and forestry development, in addition to housing, water supply and access road improvement.

Inputs: Technical Assistance
Training/Overseas Scholarships
Commodities

Status: N.A.

2. The OAS also responds to requests for short-term technical assistance and training to confront specific development problems as they surface in the agricultural sector. Academic scholarships are also made available on a limited basis.

VI. INTERAMERICAN INSTITUTE OF AGRICULTURAL SCIENCE (IICA) (OAS)

A. Active Grants

1. Agricultural Planning

Donor Contribution: $62,000 per year Dates: Mar.,1975 - indefinitely

Description: Assistance to the Superior Council for Economic Planning (CONSUPLANE), the Ministry of Natural Resources (MNR), National Agrarian Institute (INA) and National Development Bank (BNF) in project formulation, staff training, and completion of basic resource studies and regional assessments.

Inputs: Technical Assistance
Local Support Costs

Status: Continuing

2. Support for Irrigation Districts

Donor Contribution: $20,600 per year Dates: Feb.,1975 - indefinitely

Description: Assistance to the Ministry of Natural Resources in the areas of Water Law and Administration and the organization and administration of irrigation districts.

Inputs: Technical Assistance

Status: Continuing

3. Agricultural Research

Donor Contribution: $23,500 per year Dates: Dec., 1975 - Dec., 1978

Description: Assistance to Agriculture Sector Coordinating Committe (COCO) to establish a national agricultural sector information retrieval system in the Ministry of Natural Resources.

Inputs: Technical Assistance

Status: Two-thirds Completed

4. Program Management Assistance - Seed Improvement Program

Donor Contribution: $140,000 Dates: Jan.,1978 - Dec.,1981

Description: Financial and technical assistance to the Ministry of Natural Resources for a coordinator to direct the Program of Research and Extension in seed production, livestock, and crop improvement.

Inputs: Technical Assistance
Training
Commodities
Administrative Costs

Status: Not yet initiated

5. Assistance to the National Agricultural School in Catacamas

Donor Contribution: $180,000 Dates: Mar., 1977 - Mar., 1979

Description: Technical assistance to the Ministry of Natural Resources to help staff the Catacamas School. Assistance provides for 4 consultants: in agricultural education, agricultural extension, zootechnics, and agricultural engineering, for two years.

Inputs: Technical Assistance

Status: Implementation on schedule

6. Institutional Assistance for Agricultural Development of the Rural Frontier Areas of Honduras

Donor Contribution: $250,000 per year Dates: Mar., 1977 - June, 1980

Description: Technical assistance to help the Ministry of Natural Resources train and organize small farmers in the Occidental Zone, Marcala sub-region to increase their production of basic crops and livestock. Technical assistance includes 4 consultants in rural development, agronomy, and livestock.

Inputs: Technical Assistance
Vehicles

Status: On schedule

7. Institutional Development for Agricultural Planning

Donor Contribution: $73,000 Dates: Jan., 1977 - July, 1978

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Description: Technical assistance to the Superior Council for Economic Planning (CONSUPLANE) to formulate the 1979-83 National Agricultural Development Plan. Technical assistance is provided in the areas of credit, agriculture, livestock and extension.

Status: N.A.

8. Coffee Modernization Project

Donor Contribution: $130,000 per year Dates: Jan., 1978 - Jan., 1981

Description: Institutional support to the Ministry of Natural Resources and the Honduran Coffee Institute to increase the professional and technical skills of staff in order to improve coffee production.

Inputs: Technical Assistance
Training/Overseas Scholarships

Status: N.A.

VII. CENTRAL AMERICAN BANK FOR ECONOMIC INTEGRATION (CABEI)

A. Active Loans

1. Improvement of the Irrigation System in the San Juan de Flores District (BCIE-128)

Donor Contribution: $640,000 Dates: April, 1977 - April, 1980

Description: Assistance to the Ministry of Natural Resources in the rehabilitation of the main and secondary irrigation canals and access road and bridges to stimulate increased production of sugar cane.

Inputs: Technical Assistance/Construction Supervision
Commodities

Status: Awaiting completion of conditions precedent to disbursemen

2. Agua Fría Industrial Complex (Phase I)

Donor Contribution: $16,000,000

Description: Loan to COHDEFOR for investment in a mixed public private company to produce sized lumber.

Inputs: Financing

Status: N.A.

B. Loans Under Consideration

1. Agricultural Development Study - Talanga Valley

Donor Contribution: $988,300

Description: To help the MNR determine the feasibility of increasi crop production in the valley by constructing a dam and canal system to irrigate 6,000 hectares.

Inputs: T.A.

Status: Terms of reference for study being prepared by GOH.

2. Integrated Agricultural Development Study - Siria Valley

Donor Contribution: $340,000

Description: Study to help the MNR determine the feasibility of

increasing crop production in the valley by constructing a dam and canal system to irrigate 5,100 hectares.

Inputs: T.A.

Status: Terms of reference for study being prepared by GOH.

3. Integrated Agricultural Development Study - Cuyamapa Valley

Donor Contribution: $525,000

Description: Study to help MNR determine the feasibility of increasing crop production in the valley by irrigation of 9,900 hectares.

Inputs: T.A.

Status: Terms of reference for study being prepared by GOH.

4. Grain Storage and Processing Facilities

Donor Contribution: $7,800,000

Description: Construction of processing and storage plants in Tocoa, Juticalpa, Danlí, Choluteca, and La Entrada, plus a rice mill in San Pedro Sula.

Inputs: Commodities

Status: Project under consideration by BCIE.

5. Cultivation of Cashews

Donor Contribution: $2,541,371

Description: Programs to plant 7,000 has. of cashew in the South Zone in small farmer cooperatives. MNR and INA will direct the technical assistance and BNF the credit component.

Inputs: T.A.
Commodities - equipment, seeds
Credit

Status: Under consideration by bank

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6. African Palm Feasibility Study

Donor Contribution: $130.000

Description: To help INA determine feasibility of planting 6,000 has. of African Palm in the Guaymas Cooperative, Northern Zone.

Inputs: T.A.

Status: Under consideration by bank

7. Citrus Feasibility Study

Donor Contribution: $100,000

Description: To help INA determine the feasibility of planting 1,000 hectares of grapefruit in the La Masica Cooperative, La Ceiba and 500 has. of lemon trees in the Lean Cooperative, La Ceiba.

Inputs: T.A.

Status: Under consideration by Bank

8. Cocoa Feasibility Study

Donor Contribution: $100,000

Description: To help INA determine the feasibility of planting 1,000 hectares of cocoa in La Masica Cooperative, La Ceiba.

Inputs: T.A.

Status: Under consideration by Bank

9. Grapefruit and Lemon Growing - Lean Valley

Donor Contribution: $4,987,300

Description: Cultivation of 2.400 hectares of grapefruit and lemon over a 5 year period.

Inputs: N.A.

Status: Feasibility study requested

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10. Rural Agro-Industry

Donor Contribution: $1,500,000

Description: Line of credit to various private financial institutions for sub-lending for the establishment of rural agro-industries.

Status: Under consideration by bank

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VIII. CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)

A. Active Loans

1. Agricultural Machinery

Donor Contribution: $2 million Dates: June, 1977 - June, 1982

Description: Five-year line of credit to buy agriculture machinery plus associated technical assistance. Include: $0.5 million to the Honduran Banana Corportation (COHBANA), $0.6 million to the National Investments Corporation (CONADI), $0.5 million to the National Development Bank (BANAFOM) and $1.4 million to the Ministry of Natural Resources (MNR).

Inputs: Technical Assistance
Commodities
Credit

Status: Undisbursed

2. Forestry Development Assistance

Donor Contribution: $12 million Dates: March, 1977 - March, 1982

Description: Five-year line of credit to the Honduran Forestry Development Corporation (COHDEFOR) to purchase equipment, machinery, and services for the conservation, and maintenance of national forests and the access roads.

Inputs: Technical Assistance
Commodities

Status: Undisbursed

B. Active Grants

1. Technical Assistance to the Honduran Forestry Development Corporation (COHDEFOR).

Donor Contribution: $6,665,000 Dates: June, 1977 - June, 1982

Description: Consists of four sub-projects assisting COHDEFOR's forestry programs: A feasibility study for hard woods - $555,000, starts August 1977 for 1 1/2 years; a fire prevention program in Olancho - $1.2million stars in 1978 for 3 years; a forestry inventory - $2 million starts in 1978 for 3 years; and institutional assistance $2.9 million, started in 1977 for 5 years.

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Inputs: Technical Assistance
Training/Overseas Scholarships
Commodities

Status: 2% disbursed

2. Technical Assistance to the Superior Council for Economic Planning (CONSUPLANE)

Donor Contribution: $125,000 Dates: August, 1977 - August, 1980

Description: Technical assistance to help administer and implement the $3 million CIDA loan to buy agricultural machinery.

Inputs: Technical Assistance

Status: 10% disbursed

3. Training Assistance to the Honduran Government

Donor Contribution: $900,000 Dates: August, 1977 - August, 1981

Description: Four-year line of credit administered by the Superior Council for Economic Planning (CONSUPLANE), to finance studies and training for various government agencies in Honduras, 80% is earmarked to agriculture: small irrigation crop feasibility, fisheries, marketing opportunities, etc.

Inputs: Technical Assistance
Training

Status: Undisbursed

C. Grants Under Negotiation

1. Technical Assistance for Irrigation in the Guayape Valley

Donor Contribution: $3.6 million

Description: Comprehensive study for MNR of 12.000 has. in Olancho to produce a development plan for the valley.

Inputs: Credit
T.A.

Status: Project scheduled to start around September 1978

2. Basic Grains Marketing Center for Small Farmers.

Donor Contribution: $700,000

Description: Financing to DIFOCOOP for construction of three multiple service centers in grain producing areas (Juticalpa, San Diego, Jutiapa) to store, dry, and clean grain.

Inputs: T.A. - construction management
Commodities

Status: Under negotiation

3. Training - COHDEFOR

Donor Contribution: $1.5 million

Description: Assistance to the National School of Forestry Sciences in Siguatepeque.

Inputs: T.A.
Commodities

Status: Under study

4. Forestry Inventory Studies

Donor Contribution: $2 million

Description: Technical assistance to COHDEFOR in conducting studies of timber inventories in Comayagua, Yoro, Francisco Morazán, and El Paraíso.

Inputs: T.A.

Status: Under negotiation

5. Forestry Program Assistance

Donor Contribution: $3.8 million

Description: Assistance to COHDEFOR in their forestry management and protection program and to make an inventory of the forestry resources of the Central Meseta.

Inputs: T.A.
Commodities

Status: Under study

IX. FEDERAL REPUBLIC OF GERMANY

A. Grants

1. Agricultural Training

Donor Contribution: $12 million Dates: 1974 - open

Description: Assistance to the Government of Honduras coordinated by the Superior Council for Economic Planning (CONSUPLANE) to improve the skills of technical and professional personnel involved in agricultural activities. Financing of equipment, scholarships, food, and funding to the following:

German/Honduran Cooperative Food-for-Work Program (COHAAT)

Technical assistance, equipment, food-for-work, tools

National Forestry School - 10 Scholarships

Panamerican Agricultural School - 8 Scholarships

Savings and Credit Cooperatives Federation (FACACH) - Technical assistance, credit funds.

Comayagua Valley - Irrigation and small integrated rural development projects.

Status: Ongoing

X. AGENCY FOR INTERNATIONAL DEVELOPMENT (A.I.D.)

A. Active Loans

1. Agricultural Sector - I

Donor Contribution: $12 million Dates: Dec.,31, 1974 - Dec.,31, 1978

Description: This loan and an accompanying Grant represent the initial A.I.D. assistance to Honduras to treat the agriculture sector as an integral whole, emphasizing the small farm subsector. Interrelated activities of the program which were identified during a sector analysis include: farm production and farm investment credit; extension, vehicle maintenance and improved seed services; access road construction and improvement, agricultural education; and a planning, management and evaluation improvement effort in the major public agriculture institutions.

Inputs: Technical Assistance
Training
Commodities
Credit

Status: Approximately 20% disbursed

2. Nutrition

Donor Contribution: $3.5 million Dates: Nov.,2, 1976 - Nov., 1980

Description: To increase Honduras' ability to combat malnutrition, especially among the rural poor. The loan, and a complementing grant project, support a major program of potable water supply and environmental sanitation in rural communities as well as activities involving nutrition education and the introduction of new and more nutritious foods. Also, the project will increase the national government capacity to carry out analysis, planning, coordination and evaluation activities related to nutrition.

Inputs: Technical Assistance
Training
Commodities
Other local costs

Status: Implementation in initial stages

3. Rural Reconstruction II - Agricultural Credit and Access Roads

Donor Contribution: $7.5 million Dates: Nov.,2, 1976 - Nov.,1980

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Description: Credit funds to the National Development Bank: $5 million for production loans to small farmer cooperatives and technical assistance and training of National Development Bank employees to administer the program; and to the Ministry of Communications, Public Works and Transportation (SECOPT): $2.5 million to repair and upgrade 400 km. of access roads to all weather status in the zone affected by Hurricane Fifi.

Inputs: Technical Assistance
Training
Credit
Commodities

Status: Undisbursed

4. Small Farmer Technologies

Donor Contribution: $6.0 million Dates: Nov. 1977 - Nov. 1980

Description: This loan and a companion grant of $1.24 million support a program to increase the productivity of small farmers by improving their access to more efficient, appropriate technologies and improving their capacity to plan and manage all resources and inputs available to the farm. The loan will finance operations of the Farm Planning Advisory Group, part of an investment credit fund through the National Development Bank, and training for farmer service personnel, farmers and rural artisans. A related project, the Productive Credit Guaranty Program, provides, in conjunction with the Central Bank, guarantees of up to 75% of funds loaned by commercial banks to stimulate lending by those banks to potential manufacturers of newly developed farm equipment.

Inputs: Credit
Training
Technical Assistance

Status: Undisbursed

5. National Cadaster

Donor Contribution: $6.0 million Dates: 1974 - 1979

Description: To improve land use, the effectiveness of agricultural credit and the administration of property taxes, the Government is carrying out a National Cadaster Program which includes establishment of an improved property registry system, improved bases for tax administration and natural resources inventory.

Inputs: Technical Assistance
Equipment
Training

Status: 39% disbursed

6. Public Law 480 Title I Loan

Donor Contribution: $3.2 million (in 1975, 1976 Agreements)
Dates: 1975 - 1978

Description: Proceeds from the sale of imported United States foods are used to further several national objectives. Sales proceeds are being used to repair national grain storage facilities, to finance agricultural studies, to finance new crop introduction activities, to finance irrigation studies and works, and other key elements of Government of Honduras agricultural development programs.

Inputs: Basic foods on concessional loan terms

Status: N.A.

B. Grants Presently Active

1. Agricultural Cooperatives (522-0105)

Donor Contribution: $288,000 Dates: June,1975 - Mar.,1978

Description: Assistance to improve the capacity of the Directorate of Cooperative Development (DIFOCOOP) to train administrators and accountants/bookkeepers for small farmers organizations(especially cooperatives) and other institutions, public and private, involved in the development of small farmer organizations. The training is directed at improving cooperatives and other farmer group's ability to manage efficiently their farm business.

Inputs: Technical Assistance
Training
Commodities

Status: Almost completely disbursed

2. Core Services (522-0118)

Donor Contribution: $600,000 Dates: July,1974 - July,1979

Description: Assistance to key GOH agencies (MNR, BNF, INA) involved in agricultural sector activities to improve their capacity and efficiency to reach and serve small farmer groups as a companion to implementing the Agricultural Sector Loan I (025). Assistance in data development for improved project design, fisheries, and planning, implementation and evaluation in the Agricultural Sector is provided under this project.

Inputs: Technical Assistance
Training
Other Costs

Status: Approximately 75% disbursed

3. Agro-Industrial Export Development

Donor Contribution: $1.7 million Dates: Sept., 1976 - Mar., 1980

Description: To increase the capability of the Government of Honduras to systematically stimulate, support and coordinate agri-business projects, to identify, develop and market non-traditional crops with export potential. Funds demonstration projects in processed and fresh vegetables/ fruits for export, processing trials, feasibility studies, planting trials, marketing trials, and training.

Inputs: Technical Assistance
Training
Commodities
Other Costs

Status: Initial trials and feasibility studies underway

4. Small Farmer Technologies

Donor Contribution: $1,240,000 Dates: Sept., 1976 - March, 1980

Description: In conjunction with a loan of $6.0 million, provides assistance to the Ministry of Natural Resources to initiate research, development and testing of appropriate technologies for small farmers and to improve farm planning services to farm groups. The Pan American Agricultural School will carry out research and development. The National Farm Planning Advisory Group was formed to develop farm planning methodologies and support work of regional farm planning groups. Training for farmer service personnel, rural artisans and farmers in equipment selection, use, maintenance and repair will also be financed under the grant.

Inputs: Technical Assistance
Training
Vehicles

Status: Farm planning activity well advanced; other elements in initial stages.

5. Water Resources Management (522-0134)

Donor Contribution: $600,000 Dates: June,1976 to Oct.,1978

Description: Project is assisting the Government of Honduras to improve its ability to plan, implement and coordinate the uses of water and related land resources, especially as they relate to agriculture. In this project, which is expected to be followed by a loan in 1978, Honduras' water resources and water resource problems are being analyzed in order to prepare a basis for a water management strategy. Especially tailored academic training and in-country training in several aspects of water management are being provided.

Inputs: Technical Assistance
Training
Commodities

Status: Out of country training and analytical study in process

6. Pespire Valley Integrated Development (IPG) (522-0128)

Donor Contribution: $200,000 Dates: Sept., 1976 - Sept., 1979

Description: Funds to the Community Development Foundation to strengthen and expand a sorghum cooperative and extend credit for crop diversification and small-industry development such as beekeeping, mango puree production and marketing, fishponds, terracing and others.

Inputs: Technical Assistance
Training
Credit

Status: Activity well underway

C. Loans Under Negotiation

1. Water Resources Management

Donor Contribution: $5,000,000

Description: Carry out the recommendations of the grant financed project now nearing completion.

Inputs: Technical Assistance
Training
Commodities
Other Costs

Status: Approval expected late CY 1978

2. Rural Electrification

Donor Contribution: $10,000

Description: Establish a rural electrification system in the Aguan Valley and small adjacent valleys, including the design and construction of transmission lines and 4 sub-stations, internal wiring for homes, and house service connections.

Inputs: Training
Technical Assistance
Credit
Commodities

Status: Under consideration by AID/W

3. Public Law 480 Title I Loan

Donor Contribution: $1,700,000

Description: Use of local currency proceeds will be primarily to support the program of a newly created national marketing institute charged with operating a price stabilization program for basic grains.

Inputs: Basic foods on concessional loan terms

Status: Under discussion; to be negotiated early CY 1978

D. Grants Under Negotiation (522-0139)

1. Agricultural Research

Donor Contribution: $1,914,000 Dates: 1978 - 1982

Description: To strengthen the Ministry of Natural Resources' capacity to carry out and disseminate adaptive research packages to diversify crops and increase the agricultural production of small farmers.

Inputs: Technical Assistance
Training
Commodities
Other Costs

Status: In preliminary discussion stage

2. Rural Trails Pilot Program

Donor Contribution: $400,000

Description: Construct 160 kilometer of low-cost access trails by labor intensive methods in rugged mountain areas.

Inputs: Commodities
Operational Costs
Technical Assistance

Status: Final approval expected early CY 1978

ANNEX E

SUMMARY OF FAO/IBRD IRRIGATION IDENTIFICATION MISSION REPORT

FAO/IBRD Irrigation Identification Mission

At the time of the FAO/IBRD Irrigation Identification Mission in 1970, less than 35,000 hectares were in irrigation and flood control schemes, about two-thirds in the northern country:

20,000	hectares in banana plantations	(north)
5,000	hectares in sugar cane	(north)
1,200	hectares in sugar cane	(south)
6,000	hectares in Comayagua Valley	
1,200	hectares in Choluteca Valley	(San Juan de Flores)
33,000	hectares plus INA project	

A more recent estimate increases the irrigated area to 54,000 hectares.

Recommendations:

The following observations are made in the report:[1/]

1. The existing schemes (such as Comayagua and San Juan de Flores) were the subject of engineering studies but little consideration had been given to cropping possibilities, organization, management or benefits from these projects.

2. The Government's program will be ineffective unless the water law and its regulations are passed and implemented, and the Government agencies dealing with irrigation and water control are strengthened.

3. Government policy should be:

a. To concentrate on fully developing and using irrigation facilities in areas already served by irrigation systems and roads (e.g.,Comayagua);

b. To concentrate in the development of new systems on small and medium size projects with low capital costs per hectare (e.g.,Nacaome River diversion scheme).

c. To support INA colonization projects with irrigation where appropriate (e.g.,Monjarás-Buena Vista in Choluteca, and Guanchías in the Sula Valley);

d. To build a pipeline of projects with feasibility studies.

1/ FAO/IBRD Cooperative Program: Report of the Honduras Irrigation Identification Mission. August 27, 1970.

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Regional Priorities

In discussing the irrigation needs and potential, the mission divided the country into three regions, the South, Center and North. It suggested that, in the North, where large areas of good soils suffer from severe annual floods which prevent the development of intensive agriculture, irrigation would have to be associated with flood control and drainage. In the South and Center regions where rainfall is irregular and largely absent during the long dry season, intensified agriculture is possible only with irrigation, but little significant development had yet taken place. It suggested that the irrigation of the inland valleys at medium altitudes in the central mountainous region is likely to lead to the greatest increases in production, followed by irrigation of the alluvial soils on the littoral of the Gulf of Fonseca in the South.

The Northern region includes the most extensive cultivable lands in the country - in the Sula, León, Aguán and Paulaya Valleys and the coastal plains around Tela and La Ceiba. Intensive agriculture is largely restricted to banana, pineapple, some citrus and oil palm plantations associated with the two fruit companies. The balance of the land is mostly in maize and ranching. The Mission recommended, as the top priority project for the region, a comprehensive flood control plan for the Sula Valley, including a high dam for generating hydroelectric power.

The Center region is mainly highland plateau, with mountainous and hilly land in the center and west to the borders of Guatemala and El Salvador. The western area is over-populated, with the present state of technology. Most lands are in low yielding maize, beans and pasture, and are not served by all-weather roads. Forest destruction and erosion are already a serious and increasing problem. Intensification of production depends on improved communications to facilitate distribution of farm inputs and to market increased production. Most tropical and sub-tropical crops can be produced with irrigation and the humid mountain slopes are appropriate for coffee. The Mission recommended the intensive development of the Comayagua Valley while technical and managerial capabilities are being increased and studies prepared for other valleys, such as the Río Chamelecón, Yoro, Talanga, Guayape, Agalta, etc.

The Southern region is characterized by mountainous ranges with dissected slopes and coastal plains bordering on the Gulf of Fonseca. The Ríos Choluteca, Nacaome and others flow out from narrow valleys across the plain. Maize, pulses and coffee are grown on the high ground. The coastal plain, subjected to a 6month dry season. contains pastures, maize, cotton, and rice grown under rainfall, with sugar cane becoming an increasingly important crop. Water from the Chamelecón was used to irrigate sugar cane, some permanent crops (plantains and citrus) and some out-of-season crops (melons). At least one-third of tillable land was in

subsistence agriculture and half of the cultivated land was in large holdings.

The Mission recommended for this region: (1) A Nacaome River Diversion Scheme: 1,500 has. to be irrigated by pumping from the river, permitting a second crop (beans and vegetables) during the dry season and supplementary irrigation of wet season crops. The Mission estimated a capital cost of $1.6 million and a 17% rate of return. (2) Tubewell development along the Pacific Coast. The Mission estimated that $23,000 would be the cost of a tubewell irrigating 25 hectares, permitting double cropping, and irrigated forage on cattle ranches. The return was estimated at 15%. (3) Following the first two projects, a storage project on the Nacaome River to irrigate 4,500 hectares. This would permit the growing of high value fruits and vegetables.

In stressing the importance of communications, the Mission pointed to the fact that about one-third of the tillable land of Honduras is without all-weather roads making access to markets difficult.

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ANNEX F

SUMMARY OF INFRASTRUCTURE ELEMENTS OF IBRD-IDB-AID TRIPARTITE REPORT

Summary of Infrastructure Elements of IBRD/IDB/AID Tripartite Report

Recommendations:

The Tripartite Report 1/ encompassed the entire agricultural sector and discussed various infrastructural requirements, as well as infrastructure directly related to water control.

The Mission report with respect to irrigation, drainage and flood control closely followed the recommendations of the FAO/IBRD report some five years earlier in its main thrust. It reported: "The primary task in the next couple of years is to build up the qualified personnel supply, the legal base, and the administrative mechanism to develop and manage the national water resources available for agriculture... while moving forward with the feasibility and pilot work on possible projects." 2/ The report echoed the FAO/IBRD recommendation that sufficient time and resources be committed to build a competent institution before major new construction expenses are made. It stated that "the deficiencies in the Government performance during the many years of trying to develop the Comayagua region should be taken fully into account in organizing a new approach...". 2/

In concurrence with the importance the FAO/IBRD Mission assigned to flood control and drainage projects in the Northern valleys, the report gives high priority to the IDB assisted Sula and Quimistán Projects. It goes further, however, in emphasizing drainage, suggesting that important benefits can be realized at low cost on extensive areas simply through adequate drainage works, and that these areas would be especially adapted to rice production.

The report has some specific recommendations with respect to the institutional improvements it stresses. A decentralized agency should be created to plan and supervise water studies; design, construct and operate irrigation systems; manage these systems jointly with farmer representatives of irrigation districts; develop and implement water legislation; and develop and implement measures for soil conservation.

Two-Phase Irrigation/Drainage/Flood Control Program

The report recommends a two-part assistance program, the first phase leading to a massive five year $50 million second phase. However, the implementation of the second phase would be dependent upon the achievement of the mostly institutional objectives and studies of the first phase, for which $5 million was proposed. Of this amount, $ 1 million was targeted for training and most of the balance for pre-investment studies and pilot expenditures for the following projects:

1/ IBRD-IDB-AID Agriculture/Rural Sector Survey, Honduras. August 28, 1975.

2/ Page 63 of General Report.

3-1-4

Otoro	$ 0.2 million
Comayagua	0.6 "
Nacaome	1.0 "
Ground Water Studies	0.5 "
Agua Caliente	0.4 "
Choluteca pumping scheme	0.5 "
Guayape	0.3 "
Unassigned	0.5 "
	$ 4.0 million

The report suggests that the successful completion of phase 1 would lead to the construction of the identified projects in phase 2 plus the preparation of pre-investment studies for other projects, possibly including Florida-La Entrada and Comayagua.

Road Program

The evaluation of road requirements identifies two main thrusts in the GOH program with which the report agrees: (1) to improve the main linkages between the Eastern and Northern-Eastern areas of the country and the existing main trunk lines; and (2) to expand the rural road network. However, the report recommends a more ambitious rural road program, and institutional improvements that are required to provide the capability to plan and execute the program.

The present system includes: 1/

1,400 Km. of highways (trunk roads, bituminous paved)
3,400 Km. all-weather (engineered road, gravel surface)
1,500 Km. dry-weather (feeder and penetration roads)
6,300 Km. to services 115,200 Km.^{2}

Contributing to the obvious inadequacy of the system is the fact that "all weather" roads are not always passable, many river crossings are hardly manageable or non-existent, and maintenance is poor.

A partial explanation of the lack of rural roads is that only about 16,500 Km^2 of the total land area of Honduras has gradients not exceeding 20%- the remainder is mountainous, forest covered, with steep side slopes, knife-edge ridges, and subjected (in most of the country) to heavy seasonal rainfall. The existing road systems have been largely concentrated in the populated Western half of the country.

Only two Eastern areas are presently linked to the West by all-weather roads, Danlí-Santa María, and Juticalpa-Dulce Nombre de Culmí. The extension of the Tegucigalpa-Talanga trunk road to Juticalpa is scheduled for completion

1/ SOURCE: Compendio Agropecuario, Boletín Estadístico, MNR, Feb. 1977.

in 1979. It will open up additional agricultural areas and will improve access of the fertile Guayape Valley.

Two road links are being planned to the Aguán Valley. One links Elixir to La Ceiba. A second links Corocito to Juticalpa via San Esteban and San Francisco de la Paz. A third route is also being considered by the U.K. Overseas Development Administration (UKODA), connecting Corocito via Iriona to Dulce Nombre de Culmí. This would open up a large area of abandoned banana plantations in the Paulaya Valley and along the East coast.

The 1974-78 plan allocated 77% of the road expenditures to the main network and the balance of 23% (L. 19.7 million) to all other roads including access roads- but appears to be short of requirements.

Rural Roads

The present road program includes the following assistance for feeder road construction:

IBRD: In addition to support for the main highway program and about 80 Km. of secondary roads (mostly) in the Comayagua area, includes studies for about 230 Km. of feeder roads serving the Talanga-Catacamas road.

IDB: 120 Km. of feeder roads serving the Corocito-Savá road.

AID: To finance 350 Km. of feeder roads (about one-half new and one-half improvements) to serve 4 groups of asentamientos in the areas of San Pedro Sula, La Ceiba, Juticalpa and Choluteca.

The Tripartite Report recommends a stepped up rural roads construction and maintenance program with a heavy emphasis on organizational improvements in the first phase, and a doubling of these expenditures in the second phase. The suggested program for phase one is $ 9.2 million and for phase two $20.0 million. The importance given to this program and to the concern for the institutional ability to execute it, is expressed in the statement that "outlays for feeder road construction should be increased sharply during the years just ahead subject only to the constraint of effective implementation capacity".

New Directorate of Vias y Obras Rurales Recommended

In order to give rural roads the attention required, it was suggested that a new directorate be established in SECOPT to design, construct, supervise and maintain rural roads. A staff development program would be essential to produce engineers trained in planning and constructing rural infrastructure with medium technology methods. The economies to be gained by the optimal use of these especially trained personnel would suggest including other kinds of infrastructure as the responsibility of the new Directorate, on a phased basis, as capabilities permit. Those municipal governments willing and able to participate in the program should be encouraged

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to do so. With the new Directorate functioning, the Directorate of Roads and the Directorate of Maintenance could concentrate on the trunk lines.

The report suggested that labor intensive projects should be executed where feasible but cautioned that unless adequate engineering is provided there is a high risk of wasteful expenditure. An estimate was made of per Km. costs of feeder roads constructed by contract and by labor intensive methods which indicated that labor intensive construction was about one-third cheaper.

Grain Storage Facilities

The Tripartite Report recommends a major expansion of grain storage facilities, especially of on-farm storage. Specifically the report recommends a $3 million, 4-year program to expand the public silo system and to provide loans for the expansion of private facilities, followed by a greatly expanded $20 million 5-year program. Simultaneously, a $2 million program in the first phase would provide for the construction of collection stations for basic grains to support the small farmer development program to be followed by an equal amount in the second phase.

Recommended Assistance Program for Rural Roads, Irrigation/ Drainage/Flood Control/ and Grain Storage

The recommended Tripartite program for grain storage facilities, rural roads, and irrigation/drainage/flood control works totalled $19.2 million in the first phase and $92 million in the second.

	PHASE 1					PHASE 2
	(In Million Dollars)					
	Year 1	Year 2	Year 3	Year 4	4 year Total	5 years
Rural Roads	0.2	1.0	3.0	5.0	9.2	20
Irrigation/Drainage/ Flood Control	0.5	1.5	1.5	1.5	5.0	50
Grain Storage Facilities			1.0	4.0	5.0	22
Silos				(3.0)	(3.0)	(20)
Grain Collection Stations			(1.0)	(1.0)	(2.0)	(2)
TOTAL:	0.7	2.5	5.5	10.5	19.2	92

SOURCE: Ibid. General Report, P. 69.

ANNEX G

SUMMARY OF

PLAN MAESTRO VIAL OF HONDURAS

Plan Maestro Vial de Honduras

The Plan Maestro Vial (PMV) evaluates 21 valleys for the purpose of identifying those areas with the greatest development potential to provide a basis for designing a rural road system. It also estimates requirements for complementary investments required to achieve the projected development.

The regions used in the PMV study are not the same as the regions currently defined by the Ministry of Natural Resources and CONSUPLANE. The data in the PMV have been adjusted in the text to conform to the MNR and CONSUPLANE definitions.

Criteria for Selection

The report states that, over the next 20 years, the greatest increase in agricultural production can be achieved by a more intensive development of those valleys already producing, rather than opening up entirely new areas. Areas near major domestic markets, such as Tegucigalpa, should produce for those markets. Areas close to ports should produce for export: cotton and sugar in the South; sugar, bananas, citrus, African palm and rice in the North. Lands presently being cultivated account for only about 20% of the cultivable lands in the country, but they are only being used at about 25% of their potential (with the application of a low level of technology). In general, the lands in the principal valleys are good, water resources are available and the climate is favorable for agricultural production. In much of the area, irrigation is an essential element for raising productivity but there is not yet a clearly defined national program for the development of the country's water resources.

The areas that are given crucial importance in the PMV - all of which require substantial investments in irrigation - are:

1. The INA/IDB projects in the Bajo Aguán and Isletas.
2. The cooperatives of Las Guanchías in the Sula Valley.
3. The Guaymas area in the Sula Valley, with an INA planned project of 5,000 has. of African palm and 3,000 of grapefruit.
4. The Comayagua Valley
5. The Choluteca region
6. The Guayape Valley in Olancho.

It is in the PMV study that the most comprehensive view is taken of the interrelated roles of the various infrastructure components, (e.g., storage, transportation, communications, roads, irrigation) with respect to the formulation of an optimal program of agricultural development.

The PMV: A Complete Road System to Service Priority Valleys

The purpose of the PMV study was to design a road master plan to the year 2,000. The plan includes an extension of the trunk roads which are

concentrated in the Western third of the country, to the east across Olancho and to the Northeast to the Aguán and Paulaya Valleys. However, it concentrates on the identification of secondary roads connecting the trunk lines to valleys with high agricultural potential, of access roads from the secondary roads to individual farms, and of a road system running along the borders of the individual properties.

The study establishes that the design of this rural road system is determined by the agricultural development program. The agricultural development program, in turn, is determined by the choice of areas that (1) have a high production potential, and (2) are close to markets, and the application of a moderately high level of technology with a complete package of supporting infrastructure and services.

Analysis of the Valleys

Twenty-one valleys were selected on the basis of the stated criteria. Production programs were designed for each, based on climate, topography, hydrology, soils and present land use. The production programs were made consistent with projections of domestic and export demand on the output side, and with the level of technology and supporting infrastructure on the input side.

It is emphasized in the report that the analyses of physical characteristics of the valleys, production potential, yields, costs, etc., were made with deficient data - and some of the analytical techniques, judgements and conclusions may be subject to questions - but that this does not diminish the essential usefulness of the framework and of the general conclusions.

The valleys examined are listed in Table 1 in the Appendix. They total 1.8 million hectares of cultivable land. Of these 64 valleys, 20 were selected for intensive development (Table 2), totalling 1.1 million hectares of gross area, of which 209 thousand are presently cultivated. An additional 527 thousand are cultivable. The total cultivated area is programmed to grow to 504 thousand hectares by the year 2,000, an equivalent of 700 thousand hectares since intensity is projected to be 1.4.

The Paulaya Valley was not included in the program although it ranks high in terms of potentially developable land, because of its distance from national markets.

The criteria for the selection of the 20 valleys were proximity to markets, amount of cultivable area and suitability for the contemplated production plans. An analysis of demand suggested that no more than 1.0 million gross hectares should be included in the program, assuming that only about 50% of the gross area will actually be cultivated in any given year.

Crops and Levels of Technology

The production programs include only crops already grown widely in

the country, although it is recognized that new crops such as wheat, soybeans and cacao may offer good future possibilities. The underlying assumption is that it makes more economic sense to exploit more intensively the underutilized cultivable areas of valleys near markets than to open new lands distant from markets. This requires applying a higher technology to production, which will increase farm income.

Three levels of technology are assumed: Type 1 includes mechanization, irrigation, and use of fertilizers, insecticides and herbicides. Type 2 is improved technology, but a lower level than type 1 and no irrigation, with consequently lower yields. Type 3 is traditional, with only human and animal power.

Data from model farms in the Guayape Valley serve to show the enormous difference in return between a completely mechanized operation and traditional practices (Table 3). 1/ These are only illustrative. Table 4 shows the costs and returns for the three levels of technology that were used for the evaluation of the valleys in order to establish development priorities among them.

Projections were made for each valley of types of farm enterprises, principal crops and return per hectare (Table 5) and the total return to the valley without the project, with the project, and the incremental return (Table 6). The costs and benefits related to the project are presented in Table 7 and the internal rates of return and net present value for each valley are presented in Table 8. These last two tables include the IRR and NPV calculations with and without waiting to take into consideration income redistribution effects. The weighting system reflects the relative levels of productivity and income among the valleys. The highest productivity and income levels were in the Sula and Guayape Valleys, which were given weights of .55 and .75 respectively. The lowest productivity and income levels were in El Zamorano, Guaimaca and San Juan de Flores-Morocelí Valleys, which were given weights of 2.37, 2.11 and 2.11 respectively.

Ranking of Valleys

Without taking the redistribution effect into consideration, the Sula, Quimistán, León and La Masica Valleys (in that order) have the highest rates of return. They are all in the Northwest region. Only 79,000 of a potential 243,000 hectares are now cultivated. On the basis of economic return, these are the valleys that should have the highest priority in the allocation of resources. They are followed by 7 other valleys with high rates of return with a total of 147 thousand hectares presently cultivated of a potential cultivable area of 582 thousand hectares.

1/ Tables in the PMV use regions that are not the same as the regions used by the MNR. Tables in this text utilizing information from the PMV organize this information according to the MNR regions.

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BANKING OF VALLEYS BY ECONOMIC RATE OF RETURN

(000 Hectares)

Name	Hectares Presently Cultivated	Hectares Potentially Cultivable	Name	Region	Hectares Presently Cultivated	Hectares Potentially Cultivable
Sula	56.3	148.4	León	NW	7.2	23.4
Quimistán	2.0	10.4	Quimistán	NW	2.0	10.4
León	7.2	23.4	Zamorano	C	2.0	7.8
La Masica	13.9	60.6	Morocelí	C	1.3	8.2
Jamastrán	10.0	20.3	Yoro	NC	4.1	22.0
Yoro	4.1	22.0	Sula	NW	56.3	148.4
Aguán	25.0	142.8	Talanga	C	3.0	27.7
Comayagua	2.0	40.0	Comayagua	C	2.0	40.0
Zamorano	2.0	7.8	La Masica	NW	13.9	60.6
Guayape	21.0	78.3	Siria	C	5.0	24.0
Talanga	3.0	27.7	Aguán	N	25.0	142.8
TOTAL	146.5	981.8	Jamastrán	S	10.0	20.3
			Guayape	S	21.0	78.3
			TOTAL		152.8	613.9

When the redistribution effect is taken into consideration, La Masica and Jamastrán in the southeast region are dropped out of the first six in rank order and replaced by Zamorano and Morocelí. The weighted ranking becomes even more concentrated, with 9 of the first 10 valleys being either in the northwest or the central regions, the tenth valley being Yoro in the north-central region. Since only about 500,000 hectares will be needed to satisfy estimated domestic and export demand by the year 2,000 (with assumptions of levels of technology to be used), the most beneficial use

of resources would be to concentrate development on those valleys ranked highest on the weighted list, which would satisfy both efficiency and redistribution criteria. The programming of development should be paced to the satisfaction of demand, both domestic and export, to avoid surplus production that could cause serious losses to innovating farmers.

Infrastructure Program: Distribution by Type and Region

The program for the 13 valleys requires the following levels of investment in infrastructure:

Access roads	Lps. 25,645	thousand
Secondary roads	7,460	"
Sub-Total Roads	33,104	"
Irrigation, flood control and drainage	339,330	"
Marketing facilities	68,330	"
TOTAL	Lps. 440,765	thousand

With Choluteca added, the totals became:

Access roads	Lps. 745	thousand
Secondary roads	7,740	"
Sub-Total Roads	36,485	"
Irrigation, flood control and drainage	393,450	"
Marketing facilities	78,170	"
TOTAL	Lps. 508,105	thousand

Public and private investment for the 20 valleys (not including the Paulaya) totals Lps. 839,700,000.

TABLES OF APPENDIX PMV

APPENDIX TABLES: PMV

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TABLE No. 1

AREA OF THE COUNTRY VALLEYS BY REGION

Regiones 1/		Valles 2/	Hectareas	% de los Valles del País
I.- Noroccidental		Sula	184,130	
		La Masica Oeste	30,010	
		León	25,130	
		Cuyamapa	18,880	
		Tela	15,310	
		Naco	11,380	
		Cuyamel	10,310	
		Quimistán	18,250	
		La Entrada	5,940	
		Florida	5,000	
		Norte Quimistán	2,190	
		Total	326,530	18.28%
II.- Sur		Choluteca	97,310	
		Nacaome	32,200	
		Pespire	5,880	
		San Marcos de Colón	5,380	
		Total	140,770	8.00%
III.- Suroriental		Guayape	75,560	
	Juticalpa	Lepaguare	10,750	
		Telica	7,310	
		Agalta	60,560	
	Catacamas	Guayape	40,000	
		Patuca Alto	17,190	
		Jamastrán	26,130	
	Danlí	Danli-El Paraíso	21,440	
		Frontera, Nicaragua	5,060	
		Total	264,000	14.80%
IV.- Central		Comayagua	53,380	
		Siria	36,380	
		Talanga	32,910	
		Guaimaca	11,880	
		El Zamorano	11,500	
		Morocelí	11,560	
		Jalán	10,750	

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		San Juán de Flores	5,000	
		Juticalpa	4,440	
		Oropolí	4,250	
		Tegucigalpa	3,380	
		Támara	1,750	
		Total	187,180	10.50%
V.- Occidental		Sensenti	6,630	
		Nueva Ocotepeque	3,000	
	Santa Rosa	La Unión, Copán	2,380	
		El Paraíso, Copán	1,930	
		Corquín, Copán	1,810	
		Jesús de Otoro	8,560	
		Santa Cruz de Yojoa	7,060	
	Santa Bárbara	Santa Bárbara	5,630	
		Taulabé	2,000	
		Siguatepeque	1,690	
		Gracias	3,910	
		Marcala	2,630	
	Gracias	La Esperanza	2,500	
		Masaguara	2,440	
		Este de Erandique	2,380	
			940	
		TOTAL	55,490	3.10%
VI.- Norte		Aguán	228,820	
		La Masica, Este	38,800	
		Papaloteca	13,440	
		Cangrejal	1,660	
		TOTAL	282,690	15.82%
VII.- Norcentral		Yoro	27,060	
		Jocomapa	4,500	
		Victoria	12,750	
		Guayape-Orica	13,310	
		Sulaco	5,500	
		Salamá	13,100	
		San Jerónimo	3,380	
		TOTAL	79,690	4.30%
VIII.-Oriental		Paulaya	58,190	
		Depto. Gracias a Dios	392,000	

TOTAL	450.190	25.20%
TOTAL	1.786,600	100.00%

NOTAS:

1/ Estas son las regiones en que el Ministerio de Recursos Naturales y CONSUPLANE han dividido el país.

2/ Valles son las áreas con una pendiente del 20% menos.

FUENTE: Plan Maestro Vial

TABLE No. 2

SELECTED VALLEYS USED IN THE COMPARATIVE ANALYSIS

VALLES	Area bruta Hects. X10^3	Area actualmente cultivada Hects. X 10^3	Porcentaje del área bruta potencialmente cultivable	Area Potencialmente cultivable Hects. X 10^3	Porcentaje del área en potencia a cultivarse en el año 2000 Hects. X 10^3	Area total cultivado estimado, año 2000(1) Hects. X 10^3	Tasmen por ciento de utilización de tierras(2)	Total de hectáreas utilizadas, año 2000 Hects. X 10^3
NOROCCIDENTAL								
Sula	184.1	56.3	81	148.4	20	86.0	120	103.2
León	25.1	7.2	.93	23.4	22	12.3	120	14.8
La Masica	68.8	13.9	88	60.6	45	41.2	130	53.6
Quimistán	18.3	2.0	57	10.4	30	5.1	150	7.6
SUR								
Choluteca	97.3	40.2	46	44.8	20	49.2	160	78.7
Nacaome	32.2	9.0	44	14.2	40	14.7	160	23.5
SURESTE								
Cuyape	115.6	21.0	68	78.3	60	68.0	150	102.0
Lepaguare	10.7	2.6	50	5.4	40	4.8	150	7.2
Agalta	60.6	0.4	45	27.3	55	15.4	150	23.1
Patuca Alto	17.2	1.0	60	10.3	65	7.7	150	11.6
Jamastrán	26.1	10.0	78	20.3	48	19.7	160	31.5
Danlí -El Prado	21.4	2.0	74	15.9	25	6.0	160	6.4
CENTRAL								
Comayagua	53.4	2.0	75	40.0	25	12.0	160	19.2
Siria	36.4	5.0	66	24.0	40	14.6	150	21.9
Talanga	32.9	3.0	84	27.7	50	16.9	150	25.4
Guaimaca	11.9	0.6	29	3.4	15	1.1	150	1.6
San Juán de Flores-Morocelí	16.6	1.3	49	8.2	20	2.9	150	4.4
Zamorano	11.5	2.0	68	7.8	20	2.4	160	3.8
NORTE								
Aguán	228.8	25.0	62	142.8	60	110.6	130	143.8
NORCENTRAL								
Yoro	27.1	4.1	81	22.0	40	12.9	130	16.8
TOTALES	1,095.9	208.6		735.2		503.5		700.1
Paulaya (Especial)	58.2	3.0	69	40.0	38	18.0	180	32.4

(1) Porcentaje adicional de la Columna 4 sumado a la columna 2
(2) Incluye doble cosecha

FUENTE: Plan Maestro Vial

TABLE No. 3

MODEL FARMS - GUAYAPE VALLEY

	No. de Hectáreas (1)	Rendimiento Ton.M./Hect.	Precio, Lps./ Ton. M.	Ingreso bruto/ Hectárea, Lps.	Costo variable Lps/Ha.(2)	Costo fijo, Lps./ Hectáreas	Retorno neto, Lps./ Hectárea	Retorno neto de granja Lps./(4)
Granja Tipo 1, Mecanizada e Irrigada, tamaño 100 hectáreas								
Maíz (doble cosecha, arroz) (3)	40	5.0	190	950	415	113	422	16,880
Frijol (doble cosecha, arroz)	40	1.5	510	765	428	113	224	8,960
Semilla Algodón (una cosecha)	15	2.0	900	1,800	946	225	629	9,430
Arroz, grano largo (doble cosecha, maíz y frijol)	80	2.5	800	2,000	526	113	1,361	108,880
Sin sembrar (edificios y patios)								
Totales	180							144,150
Granja Tipo 1, sin Mecanización y sin Tecnificación, tamaño 10 hectáreas (5)								
Maíz (una cosecha)	3	1.0	170	170	250	78	-158	- 474
Frijol (una cosecha)	3	0.4	465	186	258	78	-150	450
Arroz (una cosecha)	3	0.8	630	504	150	78	76	228
Sin sembrar	1							
Totales	10							- 696

(1) Hectáreas netas sembradas 5-10% menos que el bruto
(2) Incluye labor, incluso de la familia
(3) Doble cosecha con arroz - la mitad de los costos fijos por hectárea
(4) Retorno a la tierra, administración y capital invertidos
(5) Datos del Ministerio de Recursos Naturales

FUENTE: Plan Maestro Vial

TABLE No. 4

SUMMARY OF ANNUAL COST - INCOME FROM THE PRINCIPLE CROPS AND LIVESTOCK, PER HECTARE (1)

	Sistemas Tecnificados						Sistemas medianamente tecnificados (3)						Sistemas no tecnificados					
Cosecha	Rendimiento toneladas métricas	Precio/ tonelada métrica, Lps.	Ingreso bruto Lps.	Costos variables Lps.	Costos fijos Lps.(2)	Retorno neto, Lps.	Rendimiento tonelada métrica	Precio/ tonelada métrica, Lps.	Ingreso bruto Lps.	Costos variables, Lps.	Costos fijos, Lps.(2)	Retorno neto Lps.	Rendimiento tonelada métrica	Precio Lps. tonelada métrica	Ingreso bruto Lps.	Costo variables Lps.	Costos fijos Lps.	Retorno neto Lps
Maíz	5.0	190	950	415	113	422	2.5	170	425	285	60	80	1.0	170	170	250	78	-15
Frijol	1.5	510	765	428	113	224	1.0	465	465	248	60	157	0.4	465	186	258	78	-15
Arroz, grano largo	2.5	800	2,000	526	113	1,361	1.5	725	1,087	439	113	535	0.8	630	504	350	78	7
Algodón-Semilla	2.5	900	2,250	946	225	1,079	1.8	900	1,620	950	113	557						
Maicillo	3.5	165	577	420	113	46	2.5	150	375	213	113	49	1.0	150	150	280	78	-20
Yuca	18.6	77	1,432	634	113	685	10.0	77	770	450	113	207	6.2	77	477	392	78	
Caña de Azúcar	140.0	18	2,520	1,105	225	1,190	110.0	18	1,980	1,600	113	267	35.0	18	630	640	200	-21
Melón	7.8	380	2,964	1,505	225	1,234	4.0	380	1,520	1,204	113	203						
Ajonjolí	1.9	720	1,368	420	113	835	1.0	720	720	206	113	401	0.5	720	360	280	78	
Soya	1.3	500	650	504	113	33	1.0	500	500	267	113	120	0.8	500	400	392	78	- 7
Naranjas	8.4	208	1,750	700	350	700	5.0	208	1,040	550	113	377						
Aceite Palma Africana	1.4	1,200	1,680	250	350	1,080												
Banano	15.0	490	7,350	1,800	225	5,325												
Café	0.8	3,920	3,136	2,100	300	736	0.5	3,920	1,960	1,260	113	587	0.5	3,920	1,960	1,400	78	-41
Tabaco (sol)	0.8	4,000	3,200	2,927	225	48												
Tabaco (tapado) (curado artificial)	0.5	17,800	8,900	5,700	1,000	2,200												
Ganado (cabeza de cría) carne	0.2	2,450	490	181	65	244												
Ganado leche	1.0	231	231	181		50							0.1	2,450	245	100	50	9
Ganado leche, carne	0.2	2,450	490	181	65	244							05	231	115	60		5
Leche de ganado (suplemento alimenticio	4.0	231	924	425	125	374												

(1) Fuente: Informe privado Ministerio de Agricultura, para los datos de granjas medianamente y no tecnificadas
(2) Supone doble cosecha donde es factible (generalmente granos); para algodón y cultivos permanentes, sólo una cosecha al año.
(3) Supone alguna mecanización para arar y transporte en el campo, sin irrigación, limitado uso de fertilizante e insecticidas, sin secado en las granjas

FUENTE: Plan Maestro Vial

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TABLE No.5

TYPE OF FARM, PRINCIPAL CROPS AND ESTIMATED NET RETURN PER VALLEY YEAR 2000

VALLE	Tipo de Granja	Cultivos Principales 2/	Retorno Estimado, Lps./Ha.
Sula	1	Bananos, plátanos, naranjas, azúcar	1,100
	2	maíz, azúcar, plátanos, café	400
La Masica y Quimistán	1	bananos, piña, azúcar	800
	2	bananos, maíz, pastos (leche), azúcar	500
León	1	bananos, arroz, azúcar	800
	2	bananos, arroz, azúcar	650
Choluteca	1	Algodón, azúcar, arroz, melón	900
	2	algodón, azúcar, arroz, café	500
	3	azúcar, maíz, frijoles	-100
Nacaome	1	algodón, arroz, melón, frijoles	800
	2	algodón, arroz, maíz, frijoles	400
	3	maíz, frijoles, arroz	-100
Lepaguare	1	algodón, maíz, arroz	600
	2	algodón, maíz, pastos (carne)	300
	3	maíz, frijoles, arroz	-100
Agalta	1	Maíz, frijoles, azúcar, condimentos	550
	2	maíz, frijol	250
	3	maíz, frijol	-100
Guayape	1	algodón, maíz, frijol, arroz, café,	800
	2	algodón, maíz, frijol, pastos (carne)	350
	3	maíz, frijoles	- 50
Alto Patuca	1	frijoles, maíz, azúcar, café,	600
	2	frijoles, maíz, azúcar, café	350
	3	frijoles, maíz, azúcar	-100
Jamastrán	1	algodón, frijol, tabaco, maíz	700
	2	algodón, frijol, café, maíz	400
	3	maíz, frijol	-150
Danlí el Paraíso	1	algodón, frijol, maíz tabaco	600
	2	algodón, frijol, maíz, maicillo, café	300
	3	maíz, frijol	-150
Zamorano	1	vegetales, cítricos, maíz, pastos (Leche)	900
	2	maíz, frijol, maicillo, vegetales	350
	3	maíz, frijol, maicillo	-100
Guaimaca	1	azúcar, maíz, frijol, pasto (carne)	400
	2	azúcar, maíz, frijol, pasto	200
	3	azúcar, maíz, frijol	-150
San Juán de Flores & Morocelí	1	azúcar, maíz, frijol, pasto (carne)	600
	2	azúcar, maíz, frijol, pasto	350
	3	azúcar, maíz, frijol	-100
Aguán	1	banano, arroz, palma africana	900
	2	arroz, palma africana	500
	3	maíz, arroz	-0-

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TABLE No. 5

TYPE OF FARM, PRINCIPAL CROPS AND ESTIMATED NET RETURN PER VALLEY, YEAR 2000

VALLE	Tipo de Granja 1/	Cultivos Principales 2/	Retorno Neto Estimado, Lps./Ha. 3/
Yoro	1	maíz, frijol, banano, pasto (carne,) café	750
	2	maíz, frijol, pasto (carne), maicillo	400
	3	maíz, frijol, maicillo	-0-
Paulaya (especial)	1	arroz	1.000
Comayagua	1	maíz, frijol, vegetales , pasto (leche)	800
	2	maíz, frijol, arroz, maicillo	250
	3	maíz, frijol, arroz	-50
Siria	1	Algodón, frijol, maíz, arroz, tabaco	600
	2	algodón, frijol, maíz, maicillo	300
	3	maíz, frijol, maicillo	-100
Talanga	1	Algodón, azúcar, maíz, frijol	600
	2	algodón, azúcar, maíz, frijol	350
	3	maíz, frijol, azúcar	-100

1/ Type 1 - Includes mechanization, irrigation and use of fertilizers, insecticides and herbicides.
Type 2 - Is improved technology but a lower level than type 1 and with no irrigation
Type 3 - The traditional farming system using only human and animal power

2/ Los frijoles incluyen la soya; todos los cultivos están irrigados en granjas Tipo 1, excepto por el café en las laderas.

3/ Retornos económicos a la administración, tierra y capital. Costos de mano de obra pagados incluso labor familiar. Base de una cosecha al año; los beneficios de la doble cosecha se recogen en la tasa de utilización.

Estos son los retornos que se esperan con el desarrollo proyectado para el año 2000.

FUENTE: Plan Maestro Vial

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TABLE No. 8

INCREMENTAL BENEFITS OF THE PROJECT-PER VALLEY
Year 2000

Valle	Tipo de Granja	Distribución de Tipos de Granja	Retorno Neto por Ha. Cultivada, Lps./Ha.	Hectáreas Utilizadas (Miles)	Retorno Total por Tipo de Granja, Lps. X 10^3	Retorno Total por Valle, con Proyecto Lps. X 10^3	Retorno Total por Valle, sin Proyecto Lps. X 10^3	Beneficios Incrementales del Proyecto Lps. X 10^3
Sula	1	50	1.100	51.6	56.760			
	2	50	400	51.6	20.640	77.400	26.140	51.260
La Masica	1	60	800	32.2	25.760			
	2	40	500	21.4	10.700	36.460	5.100	31.360
Quimistán	1	20	800	1.5	1.200			
	2	80	500	5.1	3.050	4.250	420	3.830
León	1	60	800	8.9	7.120			
	2	40	650	5.9	3.840	10.960	2.130	8.830
Choluteca	1	20	900	15.7	14.130			
	2	50	500	39.3	19.650			
	3	30	-100	23.7	2.370	31.410	6.540	24.870
Nacaome	1	15	800	3.5	2.800			
	2	45	400	10.6	4.240			
	3	40	-100	9.4	-9.4	6.100	860	5.240
Lepaguare	1	15	600	1.1	660			
	2	50	300	3.6	1.080			
	3	35	-100	2.5	- 250			
Agalta	1	10	550	2.3	1.270			
	2	50	250	11.6	2.900			
	3	40	-100	9.0	- 920	3.250	-10	3.260
Guayape	1	20	800	20.4	16.320			
	2	50	350	51.0	17.850			
	3	30	-50	30.6	-1.530	32.640	1.910	30.730
Comayagua	1	20	800	3.8	3.040			
	2	60	260	11.5	2.740			
	3	20	-50	3.9	- 190	5.720	310	5.410
Siría	1	15	600	3.3	1.980			
	2	50	300	10.9	3.270			
	3	35	-100	7.7	- 770	4.480	440	4.040

Talanga	1	15	600	3.8	2.280			
	2	55	350	14.0	4.900			
	3	30	-100	7.6	- 760	6.420	400	6.020
Guaimaca	1	15	400	0.2	80			
	2	60	200	1.0	200			
	3	25	-150	0.4	- 60	220	40	180
San Juán de Flores-Morocelí	1	20	600	0.9	540			
	2	50	350	2.2	780			
	3	30	-100	1.3	-130	1.190	110	1.080
Zamorano	1	30	900	1.1	990			
	2	50	350	1.9	660			
	3	20	-100	0.8	- 80	1.580	300	1.280
Aguán	1	50	900	71.9	64.710			
	2	30	500	43.1	21.550			
	3	20	-0-	28.8	-0-	86.260	10.100	76.160
Yoro	1	40	750	6.7	5.030			
	2	40	400	6.7	2.680			
	3	20	-0-	3.4	-0-	7.710	1.240	6.470
Paulaya	1	100	1.000	32.4	32.400	32.400	-0-	32.400
Patuca Alto	1	10	600	1.2	720			
	2	45	350	5.2	1.820			
	3	45	-100	5.2	- 520	2.020	20	2.000
Jamastrán	1	30	700	9.4	6.580			
	2	50	400	15.8	6.320			
	3	20	-150	6.3	- 900	12.000	520	11.480
Danlí- El Paraíso	1	20	600	1.3	780			
	2	50	300	3.2	960			
	3	30	-150	1.9	-280	1.460	90	1.370

Col. (1) Véase texto para descripción, en el Plan Maestro Vial.
Col. (2) Estimado por los Consultores con base en experiencia con proyectos de desarrollo en otros países.
Col. (3) Ver Cuadro 8-1, en el PMV
Col. (7) Col. 6, Cuadro 8-2 en el PMV

TABLE No. 7

INPUT DATA FOR THE ESTIMATION OF FEASIBILITY INDICATORS
(Thousands of Lempiras)

	Inversión Agrícola Acumulada (1979-1999)	Mantenimiento Vial Acumulado (1979-1999)	Costo de Caminos de Acceso (1980)	Beneficios (2000) (2)	
				No Ponderados	Ponderados
Sula (1)	106.000	1.900	250	89.100	49.000
La Masica (1)	62.300	1.900	580	28.500	23.100
Quimistán	6.500	200	150	3.800	6.200
León	20.200	300	210	9.400	18.300
Choluteca (1)	80.200	600	250	20.900	22.400
Nacaome	24.400	400	550	5.200	6.300
Lepaguare	5.900	100	100	1.400	1.680
Agalta	15.900	900	690	3.900	4.800
Guayape	100.000	3.300	900	30.700	23.000
Patuca Alto	9.100	1.000	1.500	2.000	2.420
Jamastrán	28.900	600	220	11.500	9.000
Danlí - El Paraíso	7.900	300	180	1.400	1.330
Comayagua	16.200	600	200	5.400	6.400
Siria	17.200	900	890	4.000	6.800
Talanga	20.200	900	650	6.000	8.600
Guaimaca	1.200	100	100	180	380
San Juan de Flores-Morocelí	3.700	100	140	1.080	2.280
Zamorano	3.300	40	340	1.280	3.000
Aguán (1)	167.600	6.200	1.950	67.500	57.400
Yoro	16.800	600	230	6.900	8.300
Paulaya	41.700	5.500	2.400 (4)	32.400	47.300

Reducido en 16% para excluir el desarrollo esperado en 1975-1979
Incluye renta de impuestos de exportación de bananos en los casos en que ésta probalemente será importante.
Incluye Lps. 600.000 de madera
Mas 2.400 en los 1979 y 1981
NOTA: Los costos de construcción de caminos de acceso se reducieron en el 10% y los otros costos en el 15% para eliminar los costos de intereses, impuestos y gravámenes en el estudio económico.

FUENTE: PMV

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TABLE No. 8

SUMMARY OF ECONOMIC INDICATORS - PER VALLEY

Valle	Tasa Interna de Retorno (%)		Valor Neto Actual (Millones de Lempiras) (1)	
	Normal	Ponderado (2)	Normal	Ponderado (2)
Sula	33.8	20.3	88.6	27.0
La Masica	19.5	16.0	14.8	7.5
Quimistán	23.3	34.9	2.6	5.8
León	20.0	35.2	6.6	17.1
Choluteca	11.6	12.5	-1.0	1.0
Nacaome	8.5	10.8	-2.4	-0.9
Lepaguare	9.9	12.2	-0.3	0
Agalta	9.2	11.4	-1.4	-0.2
Guayape	13.3	9.6	3.5	-6.8
Patuca Alto	6.4	8.4	-1.9	-1.4
Jamastrán	17.4	13.7	4.7	1.4
Danlí - El Paraíso	6.4	5.9	-1.2	-1.3
Comayagua	14.3	16.8	1.1	2.4
Siria	8.5	15.2	-1.9	1.9
Talanga	12.0	17.1	-0.1	3.4
Guaimaca	3.6	11.1	-0.3	0
San Juan de Flores - Morocelí	11.3	23.5	0	1.6
Zamorano	13.8	29.0	0.2	2.5
Aguán	17.2	14.7	26.8	13.3
Yoro	17.4	20.6	2.8	4.7
Paulaya	20.7	27.5	20.3	40.3

(1) Costo de oportunidad de capital supuesta a 12% por año.
(2) Ponderado para reflejar redistribución de ingresos.

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TABLE No. 9

INFRASTRUCTURE INVESTMENT FOR THE 14 PRIORITY VALLEYS
(000 Lempiras)

VALLEYS	ACCESS ROADS	SECONDARY ROADS	FLOOD CONT. DRAINING, & IRRIGATION	MARKETING FACILITIES	TOTAL
Sula	5332	280	68800	12900	87,312
La Masica	2637	640	32960	8240	44,477
Quimistán	321	170	3060	1020	4,571
León	787	230	12300	2460	15,777
Guayape	4420	1000	61200	13600	80,220
Jamastrán	1261	240	19700	2955	24,156
Comayagua	756	220	9600	1800	12,376
Siria	934	990	8760	2920	13,604
Talanga	1082	720	10140	3380	15,322
Sn. Juán de Flores y Morocelí	183	160	2320	290	2,953
Zamorano	151	380	1920	240	2,691
Yoro	813	260	9030	1935	12,038
Aguán	6968	2170	99540	16590	125,268
SUB-TOTAL	25,645	7,460	339,330	68,330	440,765
Choluteca	3,100	280	54,120	9,840	67,340
TOTAL 14 VALLEYS	28,745	7,740	393,450	78,170	508,105
TOTAL ALL 20 VALLEYS					839,700

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ANNEX H

BASIC STUDIES, SURVEYS, AND DATA ORGANIZATION UNDERTAKEN IN CONNECTION WITH THE ASSESSMENT

BASIC STUDIES, SURVEYS, AND DATA ORGANIZATION UNDERTAKEN IN CONNECTION WITH THE ASSESSMENT

I. By Honduran Consulting Firms

1. Instituto de Investigaciones Socio-Económicas (IISE)

- Robert White: "Delivery of Services for Increased Agricultural Production and Rural Development by Public Sector Institutions," February, 1978. 357 pages.

- Ive E. de Barreiros: "Estimación de la Demanda de Personal Estratégico de Nivel Medio y Superior para Evaluación del Sector Agropecuario -- Mediano y Largo Plazo," January, 1978. 118 pages.

2. Investigaciones y Estudios Económicos (INVEST)

- Antal Borcsok Bolint: "Análisis de los Efectos de la Política de Regulación de Precios Sobre el Sector Agropecuario," January, 1978. 154 pages.

II. By Expatriate Consulting Firms

1. Servicios Técnicos del Caribe (STC)

- José Antonio Herrero: "Evaluación del Programa de Estabilización de los Precios de los Granos Básicos," December, 1977. 64 pages.

- Cruz Manuel Rodríguez: "Suministro de Insumos para la Agricultura de Honduras," October, 1977. 68 pages.

- J. Martínez Picó: "Escuelas Agrícolas de Honduras - Oferta y Demanda de Recursos Humanos a Nivel Medio y Superior," November, 1977. 56 pages.

- Enrique R. Ortiz and Pedro Negrón Ramos: "Enfoques al Mercado Agropecuario en Honduras," September, 1977. 43 pages.

- Antonio González Chapel: "Observaciones Sobre Planificación Agrícola Regional en Honduras," October, 1977. 41 pages.

- Reinaldo Santos and Víctor Alonso: "Informe Sobre el Crédito Agrícola en Honduras," August, 1977. 48 pages.

NOTE: Language of title indicates language in which study originally written. All studies available in Spanish.

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2. Robert Nathan Associates, Inc.

- Diego Londoño: "Estudio Macro-Económico del Sector Agropecuario," December, 1977. 102 pages. 1/

- Marvin Brandt: "Infrastructure," December, 1977. 87 pages. 1/

3. American Technical Assistance Corporation (ATAC)

- William Rusch: "Campesino Associations, Cooperatives and Other Non-Profit Organizations," September, 1977. 184 pages.

4. International Agricultural Development Services (IADS)

- Various Authors: "Agricultural Research," January, 1978. 106 pages. 2/

5. Consortium for International Development (CID)

- H. Van de Wetering and George H. Hargreaves: "Proposed Water Resources Programs for the Ministry of Natural Resources," July,1978. 3/

III. By Personal Services Contracts

- Paul Sundheimer: "Renewable Natural Resources," October, 1977. 43 pages.

- Paul Sundheimer: "Forestry," October, 1977. 41 pages.

- Ronald Waterbury: "The Peasant Farmers of Quebrada Honda," February, 1978. 132 pages.

- Gretchen M. Eoff: Las Cabañas - "A Case Study of a Traditional Subsistence Oriented Peasant Municipality in Southwestern Honduras," November, 1977. 101 pages.

1/ Funded from PL480 counterpart.

2/ Arranged for directly by GOH and IADS.

3/ Funded under AID Project No. 522-0134

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Howard Harper and Roger Sandage: "Production Trends and Prospects and Related Constraints," October, 1977. 95 pages. 4/

IV. By USAID Personnel

- John Kelley: "Socio-Economic Profile of Small Farmers," January, 1978. 80 pages 5/

- Cynthia E. Gallup: "Observations on the Role of Women in the Agricultural Sector of Honduras," January, 1978. 24 pages.

- Luis Zelaya: "Regionalization of 1974 Agricultural Census Data," January, 1978.

- D. E Anderson: "Problems and Constraints Within the Public Agricultural Sector in Honduras," May, 1977. 94 pages.

4/ This material was supplemented by a report on quantitative production targets produced by the Ministry of Natural Resources in June, 1978.

5/ The actual survey work was performed under local contract; analysis of the data and integration of same with 1976 ATAC survey data was performed by Mr. Kelley.

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FORESTRY

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1. Land Base

About 1[illegible]% of Honduras is in valleys and plains. The remainder is slope land, mostly mountains. Slopes between 20% and 60% are common. It is here where most of the forest land is situated. However, appreciable areas of pine on plains can be found in the northeastern part of the country. Hardwoods also occur on some of the flat, wet lands near the north coast and in the river bottoms.

The following table provides more information on the nature of the land base in Honduras.

	Hectares of Forest Land
Pine	2,700,000
Hardwoods	4,500,000
Denuded-suited for forest	2,200,000
Total	9,400,000

These data are based largely on aereal photographs taken in the 1960's. Part of the current forest development program is devoted to taking new infrared photography and updating the inventory of land and timber resources. New data for the entire country is expected to be available by 1979. Preliminary data already indicate the area in pine forest will increase to about 3,000,000 hectares. On the other hand, it is quite possible the area in hardwoods will show a decrease.

About 70% of the forest land in the country is owned by the Government. The remainder is in private holdings, farms and non-farms and ejidos.

2. Timber Resource

The pine forest consists largely of Pinus oocarpa and Pinus caribea. The former is a common Central American species and produces good lumber. Pinus caribea is a close relative of slash pine, common to south-eastern United States. Both species produce resin suitable for commercialization. Pinus oocarpa dominates the pine stands throughout the mountains. Pinus caribea occurs in the Department of Gracias a Dios. A limited amount of commercial Pinus pseudostrobus occurs at the higher elevations in the mountains. All species are generally found on the poorer soils. Occasionally, hardwoods islands can be found in the pine zone and can be traced to better soils.

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The general character of the pine forest varies from open park like stands to virgin stands in the remote sections of the mountain region. They have suffered repeated fires, occasional depredations of dendroctonus beetle, one and sometimes two waves of timber cutting in the accessible zones, and in some regions migratory agriculture. The open stands have not receded until recent years, largely because of repeated fires. The few areas not touched by fires have acceptable-to-good pole stands showing good growth. Many areas that have been protected from fires in recent years are not restocking; some, with dramatic vigor and rapidity.

According to recent estimates, the volume of timber in the pine zone is approximately 50.000,000 M^3. About 20% of this is inaccessible by the logging technology presently used in Honduras. Utilization is poor and about 40% of the reported volume is left in the woods. It is limby and low grade and market value does not cover the cost of removal. Some stock is also lost to killing fires. FAO estimated 650,000 M^3 of pine was lost annually to fires. This seems to be too high because most fires are ground fires. The volume of pine known to date indicates the pine zone is grossly understocked. Instead of 30 M^3 /ha. the amount should be around 200 M^3/ha.

There is general agreement that the present stocking of pine of commercial size is old and genetically poor for reproduction of new stands of high quality. The GOH is, therefore, embarking on a liquidation policy rather than a sustained yield policy in some areas. The majority of the pine area, however, will be managed on a forty year cycle sustained yield basis.

The hardwood forest is a complex mixture of many species, sometimes 200 species on 100 hectares. They grow on the best mountain soils or in the lowlands with tropical humid and subhumid conditions. Some foresters and ecologists believe that many hardwood stands are growing on fragile sites. As a result, there is a tendency for many forest managers to be cautious in exploiting these forests.

The people of Honduras have learned how to utilize 34 hardwood species for at least twenty different uses. Mahogany and cedar are the two principal species being exported. Considerable investigation needs to be done to learn more about the variety of species in the hardwood complex to determine how best to utilize the resource. Utilization thus far has been a high-grading process with the timber left after each cutting being of inferior quality.

The Canadian International Development Agency is assisting COHDEFOR to obtain a more complete inventory and soil analysis of the hardwood zone. The project also includes testing the physical characteristics and determining uses for the species of commercial size.

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Very little is known about the volume and quality of the hardwood forest. Based on experience in other parts of the tropics, the volume should be about 150 M^3/ha. with perhaps 20% usable based on present markets and logging technology. The Canadian International Development Agency has been helping the GOH to obtain more complete information on volume, management system required, and growth. This work should certainly continue as markets will undoubtedly develop in due time.

The area classified as denuded lands in the llanos of the north-eastern part of the country, lands in the mountains repeatedly burned, lands abandoned after reduced productivity from migrating agriculture, and sites that, for unknown reasons, did not restock with pine, will eventually be returned to forest or be dedicated to livestock production where it is profitable to do so on a sustained basis.

3. Institutional Framework

On January 10, 1974, in Decree 103 the GOH gave forest production a new direction. On that date, it created Corporación Hondureña de Desarrollo Forestal (COHDEFOR), a semi-autonomous institution. The Corporation has control of public and private forests. Its mandate is to protect, conserve the forests, reforest deforested areas. and establish systems of organization. It has the authority to use forests, private and public, under any system it elects and can determine when and how the forest should be exploited. It is obligated to pay private owners for the timber at a price fixed by the Corporation. Industrialization and manufacturing of forest products will be undertaken by COHDEFOR or by enterprises of mixed capital or private capital, when authorized by COHDEFOR. This mandate includes logging, extraction and distillation of resin. All exporting and wholesaling of wood products internally also will be handled by COHDEFOR. Salaries and hiring are not subject to the civil service system. The only significant obligation of COHDEFOR to any other government agency is that its programs must be in harmony with the National Development Plan. It must generate its own funds like any other business.

COHDEFOR must operate a Social Forest System, which will be described in another part of this report. It also has the authorty to determine, with the collaboration of the National Agrarian Institute, what lands in forested zones are suitable for agriculture and livestock production. Article 8 of the Decree directs COHDEFOR to execute, alone or with other agencies, works that are indispensable for protection of watersheds. At the present time it is assumed that COHDEFOR is responsible for watershed management in the broadest sense. It does not control use of water only the physical and vegetal components that influence the production of water in a given watershed.

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COHDEFOR has broad powers over forest production from growing timber to marketing final products. It has control over how timber will be manufactured and sold. (The Decree cancelled all timber concessions and permits for timber and applications of the same. The entire production system is now state controlled throughout the country). Private sawmills remaining must obtain their timber from COHDEFOR and then must sell most of their product to COHDEFOR, thus it can decide which of the existing wood industries will be allowed to survive. It can also create new industries. It is unique in the annals of national forest production systems throughout the world. -

4. Infrastructure and other Facilities

The forest improvement program planned by COHDEFOR will require heavy investments during the next decade. At the present time emphasis is being placed on constructing roads and full protection facilities especially in the pine zone. Funds have been budgeted to build 177 kms of new roads in the Olancho area and 174 kms in other parts of the country during 1977. The 1977 program also includes the improvement of 368 kms of existing roads.

An intensified forest protection system was initiated several years ago with help initially from A.I.D. then F.A.O. and now, in Olancho, the Canadian International Development Agency. At the present time about 2,000,000 hectares are covered by organized protection, almost entirely in the pine zone. Additional area will be added as funds, personnel, and infrastructure becomes available. The fire protection system also needs additional facilities to improve fire detection. Construction of twenty lookout towers is planned for 1977. The radio communication system must be expanded accordingly. Additional facilities of all types are needed to place the entire fire occurrence zone of the country under protection.

Experiment stations and more administrative facilities will be needed as forest production activities intensify.

5. Natural Hazards

The emergence of insect epidemics is somewhat unpredictable. The Dendroctonus bark beetle is always present and occasionally erupts in large numbers when the ecological balance becomes favorable. Areas of pine with old trees are especially vulnerable to attacks. COHDEFOR's long run objective is to control this insect by maintaining a healthy pine forest. However, there may be localized attachs of the insect that can be handled by cutting down infested trees and treating with chemicals or fire.

6. Reforestation and Cultural Operation

There is an area of about 200,000 hectares in Honduras denuded over the years by fire, migratory agriculture, grazing, and failure of mature trees to produce seed before grass took over sites. Many denuded areas will restock naturally after several years of fire protection. However, there will be other areas which will need artificial regeneration.

There is also the need for reforestation to artificially restore some problem areas after cutting. Artificial restocking after cutting may also be done to raise the quality of production. COHDEFOR is operating a tree seed bank; within the next year superior trees of the pine species will be located and seed collected later. This seed should produce a superior strain of pine as to lumber quality and growth rate. COHDEFOR is gradually moving into a tree planning program which eventually will cover 10,000 to 15,000 hectares annually. In 1977, 2,650 hectares are scheduled for planting, using Pinus oocarpa, Pinus caribea and several hardwoods.

At the present time, three pine nurseries and one hardwood nursery are capable of producing 6,000,000 seedlings per year. All space in the four nurseries has not yet been fully prepared for production. More nurseries will have to be built to service a 10.000-15,000 hectare planting program.

7. The Social Forest

The social forest concept emerged out of a specific awareness of the need to protect the forest and to find employment for the large number of families living in the forest areas. This situation is best described in the words of a key Administrator of COHDEFOR "-- as many as 200,000 families subsist in the mountain forest areas of Honduras. These people will, by and large, remain in the forest areas and the total population will expand. Therefore, it is necessary for COHDEFOR and the forest managers to provide for the incorporation of these people into the forest system without destroying the basic forest productivity. Forest jobs and new forest products need to be developed to provide for them so that they become part of a productive forest ecosystem and not intruders or destroyers. This problem will certainly tax the ingenuity of forest research and forest managers, but it must be solved to arrive in an effective forestry program for Honduras." The estimate of the number of families may be high, but the concept is sound. For a long time the forest was considered to be the enemy of the migratory farmer. He is now considered an integral part of the forest system and it is believed that he should share in what it has to offer.

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Decree 103 gives COHDEFOR the mandate to determine the form in which campesinos can participate in the benefits that are to be derived from forest exploitation. It also directs that campesino groups, cooperatives, or other forms of associations be formed to give care and protection to forests, to advance their regeneration, and to avoid fires, excessive use of pasture and migratory agriculture.

In most cases, the social forest program as now constituted consists of 15 to 40 families in a community or a village. Space is provided for gardens. The families usually organize into cooperatives, run their own affairs, participate in work projects and share the income derived by the group on the basis of participation. COHDEFOR provides credit (without interest) and technical assistance for their income bearing projects and for subsistence farming. Money loaned to a group is recovered by COHDEFOR by an assessment on the earnings from products produced.

As of July 17, 1977 the following were operative:

92	Groups	- Based on resin collection operations of 15,000 - 20,000 pine trees each	4236 families
21	Groups	- Producing timbers and boards by manual sawing	400 families
3	Groups	- Extracting Latex de Tuno	74 families
3	Groups	- Extracting Liquidambar	40 families
119	Groups		4750 families

There are also three groups in the vicinity of San Pedro Sula established on critical watersheds. These groups are being helped in changing their farming pattern so as to preserve the watershed. This involves planting trees for fuelwood on the upper slopes and constructing terraces for annual crops and orchards.

Measures are being taken to assist some cooperatives to diversify by adding the production of coffee, cacao and honey, where soils and climate are suitable. At the moment there is no long range objective as to the number of groups to be formed. The number of resin producing groups will probably be limited, however. The practice of separate forest areas for resin production and for lumber production will limit the forest area allocated to resin.

8. Forest Utilization

The production of roundwood has been steadily rising over the past three years. Lumber production, however, reached a peak in 1973 and then

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declined for two years during which time the international lumber market felt the effects of worldwide recession. It was also during this period that the GOH made a drastic change in its forest production system and considerable time was necessary to make adjustments in operating procedures and policy and initiate a new development momentum. Despite the decline in quantitative production the total declared value of products increased largely because of the establishment of COHDEFOR. The 1977 value of production is expected to increase another 15%. See Tables 1 and 2 in the appendix for more details about production.

Lumber is by far the most important wood product produced in the country. It accounts for about 90% by volume and value of total forest production. About 90% is pine lumber of which 80% is exported. Plywood production is mainly from hardwoods; most is used internally and some is exported.

Fuelwood is very important to the people of Honduras for cooking purposes. It is relatively cheap compared to petroleum products. Most of the wood cut is by rural families for their own use. However, increasing commercialization is taking place. COHDEFOR estimates 58,000 loads (1/2 M^3) were produced in 1974 and 302,000 loads will be produced in 1977. Three social forest groups are being organized in 1977 to produce fuelwood on a commercial basis. One instance was noted where a social forest group was planting trees in a watershed rehabilitation project for fuelwood, to be eventually sold in the San Pedro Sula area.

Pinus oocarpa and Pinus caribea are noted for their yields of resin. Collection and processing has been known for many years in Honduras. Production in 1975 was about 38,000 barrels. COHDEFOR is planning for 50,000 barrels in 1977. This may be difficult to achieve as the international market is slow at the moment and prices have declined.

Most of the resin produced is being collected by social forest groups. The procedure is very labor intensive. There are four plants that distill the raw resin and produce turpentine and commercial resin. These plants are presently working at only about 60 percent of capacity on a one shift basis.

Last year an experiment was made to collect pine stumps, following cutting operations, for extraction of resin. These were exported to a plant in Nicaragua for processing. Social forest groups are also collecting latex de tuno and liquidambar. Production has been 10,000 to 30,000 lbs. per year of latex and 100 barrels of liquidambar. which comes from a tree of the same name.

Table 1 in the appendix provides more detail on the production of basic forest products. At the present time there are approximately 100 timber operations underway to achieve the production goals.

Domestic requirements of sawnwood, plywood, and commercial fuelwood

are estimated to be approximately 5.0 million M^3 annually or about 2.0 M^3 per capita. This is low compared to the US where per capita use is about 3 M^3 per capita. Except for specialty items, all of this type of wood products are produced in Honduras.

The country needs about 82,000 metric tons of paper, cartons, paperboards, newsprint, and finished products each year. This is imported at an annual cost of approximately L. 63,349,000.00. A large share of the carton material is used by the banana industry.

9. Cutting, Processing and Marketing

COHDEFOR is permitted by law to extract timber from the forest, transport logs or trees, and finally manufacture boards, plywood, etc. It can contract any or all of these functions. At the moment it is taking that approach. In 1977 it expects to market 260,000 M.Bd.Ft. of lumber of which 200,000 M.Bd.Ft. will be bought from sawmills. For all practical purposes the sawmill owner is a contractor. He has one source for raw material and his biggest customer for lumber is the same entity. If the sawmill operator has lumber COHDEFOR does not need, he can sell it in the domestic market. COHDEFOR can also sell in this market and thereby become a competitor. However, by law COHDEFOR can exercise control of the wholesale market and is the sole entity authorized to sell wood products in the international market.

At the present time relationships between the sawmill industry and COHDEFOR are good. Both need each other at this stage of forest production development in Honduras. COHDEFOR is in a position to provide loans, guarantees, advice, etc. to upgrade the industry's mills. The plan at the present time is to maintain most mills in private ownership and contract with them. COHDEFOR also plans to build mills and operate them, some through subsidiary corporations.

There are now 132 sawmills and two plywood companies in the country. Twenty sawmills are band mills. The other 112 are circular mills, varying from poor to good condition. Only about 100 are currently operational. The marginal mills, if they cannot be improved at a reasonable cost and are not properly located geographically, will be purchased and eliminated. Other mills will be upgraded to higher production and some mills will be relocated as new forest inventories moderate the location of timber supplies. FAO is assisting in making efficiency studies for selected mills. Eight new sawmills are scheduled to be purchased. Some of these will no doubt be located where existing mills are to be eliminated. The end result of indicated changes will be fewer mills but higher production and better quality products.

In addition to sawmills, COHDEFOR operates a number of concentration yards and funds are allocated to establish at least one more in the near

future. Most lumber produced in the country is generally transported to the concentration yard, graded, sorted for dimension and quality, remanufactured if necessary to fill orders and finally prepared for export. These yards also serve as places to accumulate large volumes of lumber, which are usually desired by foreign clientele. COHDEFOR plans to transform these concentration yards into centers for manufacturing secondary products.

Timber on both private and public land is controlled by COHDEFOR. No timber can be cut without its permission. How the timber is cut is determined by COHDEFOR personnel. They also arrange for cutting and disposal. The owner is paid 40% of the stumpage value and 60% is retained by COHDEFOR. The material extracted is finally merged with the large volumes of timber cut in national lands. One agency has complete control of the entire timber base regardless of ownership.

The percentage of a tree utilized in most areas is low. Studies are underway to obtain more accurate estimates of waste. The percentage is undoubtedly high. A visit to any sawmill will show that most logs in a log deck are free or nearly free of defects. This means that knotty or lower grade logs are left in the woods. This lower quality material cannot produce enough acceptable export grades using present methods to make processing economical. The volume of this material is of such magnitude that internal markets cannot absorb the amount available. There is a search underway for new uses of low grade material. For example, a wood pallet pilot plant is being tried on the North Coast. The pallet elements will be cut to size, and assembled into a bundle and shipped overseas where the buyer will construct the pallet. Manufacturing chips for foreign paper industries is also being considered. Japan and Sweden are already buying chips from the United States.

COHDEFOR is investigating the possibility of fabricating furniture parts from hardwoods. Other uses scheduled for study are parquet flooring, moulding, prefabricated housing elements, laminated structural timbers, fiberboard, and boxes.

10. Foreign Trade

At the present time sawn wood products, resin, liquidambar, etc. are sold to the Dominican Republic, Puerto Rico, Jamaica, Mexico, Guatemala, Panamá, Argentina, Uruguay, San Andrés (Colombia), Venezuela, Europe and United States. Exports reached almost L. 90,000,000.00 in 1976, consisting of 85% lumber, logs, posts, poles and sleepers. Thirteen percent of the export value was in plywood and finished wood products. While the quantity of basic wood products is down slightly in volume and value, the value and volume of finished products has increased a great deal. The total value of recorded exports in 1976 was 2.6 times that of 1970; finished products increased 5 times.

Imports likewise increased by 1.8 times. Imports are mainly paper products, especially carton, paperboard, and packing paper valued at L. 63,348,885.00 out of a total of wood product imports of L. 64,527,040.00, and 81% increase since 1970.

The ratio of exports to imports is 1.6:1 for the last three years. There will have to be about an 11% growth in forest production and exports to maintain the 1.6:1 ratio at least until the Olancho project is operational.

Tables 4 and 5 in the appendix, give more details about exports and imports.

11. Olancho Project

In 1966 the Olancho Reserve was created in the Department of Olancho. Since that time there have been various proposals made to develop the region for agriculture and forest production. The latest plan includes a pulp and paper mill and two large sawmills. There is also agricultural land in the region to be developed. This report is concerned only with the forest production aspect.

The entire area covers about 1,500,000 hectares which includes 60,000 hectares of pine timbers plus an unknown quantity of hardwoods. The pine is the more significant resource to consider at this time. A new company, subsidiary to COHDEFOR, and known as Proyecto de Pulpa y Papel, has been formed to build and operate the pulp and paper mill. At the present time the project is in the feasibility study stage. Construction of the pulp and paper mill is scheduled to begin 5 years hence with the mill to be in operation two years later. The site for construction is the lower part of the Rio Aguán in the Department of Colón. A new port facility is being constructed as are primary and secondary roads in the area.

The size of the mill is now planned for 150,000 metric tons of kraft paper and paperboard per year. The wood mix is now envisioned at two-thirds pine and one-third hardwoods. The production of the mill would be a major factor in reducing the foreign exchange cost of present pulp and paper product imports.

The industrial complex will also include at least 2 sawmills. Work is scheduled to start on the construction of these mills in the near future. They will have a capacity of 1,000.000 M^3 or about 250,000,000 board ft. of lumber per year. Secondary products will be considered later. The production of these mills will be exported.

There has been considerable debate about the feasibility of the pulp and paper mill. One side believes that the timber base is not adequate. This is based on a 1964 FAO survey. A 1974 survey tended to confirm estimates based on the earlier survey, however, some believe that inventories are showing larger volumes per hectare than the surveys indicated. It has been suggested that construction of the mill be deferred for a time because of the risks involved but construction costs have been increasing at the rate of 8% per year, which means the longer the mill is deferred the more expensive it will be.

The production capacity of the proposed pulp and paper mill is far beyond the domestic requirements of the country for paper products. The Corporation must, therefore, rely on its ability to sell a marketable surplus in international markets. Most experts agree the world is heading for a pulp shortage. It is obvious that the long run trend is for higher demand and there is very little "stretch" possible in the timber base.

12. Forest Production and Related Activities

COHDEFOR is responsible for watershed management in the forest zone. At the present time four rehabilitation projects are in operation in the Sierra Omoa mountain range, near San Pedro Sula. The rain from Hurricane FIFI in 1974 caused many landslides on the steep upper slopes, especially those slopes in cultivation or pasture.

In one watershed project all of the campesino families were moved to other lands, in another part of the country. These families were cultivating steep hillside in a watershed that supplied San Pedro Sula with 50% of its water requirements. The open lands are being planted to trees and the watershed is closed to human use. The objective is to reduce the sedimentation load of the stream and achieve a more stable stream flow.

On the three other project areas not all of the families are being moved. Remaining farmers are being helped to change their farming methods on steep land in watersheds that are not used for a potable water supply. It is anticipated that the watershed can be adequately protected without moving all of the people if farmers will change to methods of farming that will yield an income and also stabilize soil conditions on the steep slopes. The projects require terracing the land on slopes up to about 20-30%. The people making terraces are being paid by the food-for-work program supported by West Germany. Annual crops are being planted on the terraces. The higher terraces are devoted to fruit trees. The upper half of the steep slopes will eventually be planted to forest trees that will be cut for firewood, home use and for sale, five to eight years hence. One project also operates a nursery for the production of fruit trees and forest trees seedlings. These will

be used on the project and the surplus sold to other projects or private individuals. Each project also maintains a composting system and a small impoundment to collect water for irrigation during dry periods.

UNDP, FAO and the Government of West Germany are providing technical assistance and food for work, COHDEFOR is providing technicians to work full time with each community group in all aspects of each project. It also provides seed, fertilizer, tools and materials for each project.

A forested watershed near Tegucigalpa has been designated for watershed management research. It is now being organized into sub-watersheds. Each sub-watershed will eventually have a stream gauge so that stream flow can be measured and a run off pattern determined. A series of different land treatments will then be applied and then the streams will be rechecked for quantity and quality of water. This will provide a measure of the impact on water flow and quality from different land uses. Peak flows, sedimentation, water quality, evapotranspiration, etc. will be identified in each type of land use in the research. There will also be research projects on the usefulness of various soil erosion control measures under local conditions.

COHDEFOR is also interested in determining if production of livestock and timber are feasible on a sustained basis in the pine zone. This is done in other parts of the world. At the present time COHDEFOR needs to learn more about the quantity and quality of its forage resources before adopting a management system. In its own words COHDEFOR thinks "some attempt must be made to inventory the forage resource within the next five years and then to plan for better grazing use". 1/

13. Manpower and Training

No attempt was made to analyze this subject in detail or to factor out the needs of COHDEFOR for the future; the impression is that precise needs have not been worked out for the long run. The agency is new and expanding fast. It feels an immediate need for around 200 more professional people, mostly foresters and wood utilization people. They are forced to hire professionals, at the moment, from the United States, Belgium and Chile.

At the present time, COHDEFOR's staff numbers about 1,600 people of all classes. They have a number of employees out of the country for advanced training. They think they cannot increase this number without reducing their active staff below levels needed to meet production goals.

1/ Report on Forest Research Symposium Jan. 17-20, 1977.

COHDEFOR sponsors the National School of Forest Sciences at Siguatepeque. This year it is adding new buildings and other facilities. It is also providing 378 man-months of scholarships. The objective is to raise the capacity of the school to 132 students and to graduate 45 annually. At the present time two courses are offered: a two-year program for forest guards and a two-year program for forest technicians. Plans are to drop the forest guard curriculum and graduate only forest technicians. The School also accepts students from other Central American countries. There is also a forestry program at the National University in La Ceiba which is now producing about 12 Ingenieros Forestales annually. Attempts are being made to upgrade the school.

14. Research

A forest research symposium held January 17-20, 1977, with participation by COHDEFOR, National University (Forestry Department), National School of Forest Sciences, sawmill industry, University of Washington, Superior Council for Economic Planning (GOH), and FAO representatives. The symposium developed a list of 18 research projects for consideration by COHDEFOR. The list is presently under study and the research program has not yet been finalized.

15. Finances

Table 3 shows the 1977 Operational Budget of COHDEFOR which totals L. 122,981,400. In addition, COHDEFOR will participate in a planned forest products industry expansion program which will be financed mostly by COHDEFOR but with some private sector financing. COHDEFOR's own investment budget for 1977 appears to be about L. 18 million. In addition, Technical Assistance and training scholarships will be received from FAO, UNDP, Government of Venezuela, Canadian International Development Agency, IDB, Great Britain, University of Washington, University of Arizona, and the Peace Corps.

All loans made by foreign governments to the GOH for development of forest production are charged to COHDEFOR, which is expected to pay the interest and principal from earnings.

16. Policy and Management Issues

a. Perhaps the most crucial issue facing COHDEFOR is achieving and maximizing forest production. It is under pressure to produce earnings and maximize those earnings from the resource base available. The condition of the resource varies from poor pine production to not

knowing quite how to handle the rich hardwoods. The pine is grossly understocked and far below its potential. No one knows what to expect from the hardwoods. Likewise, no one knows how best to use this resource and not continually high grade timber and then be caught, at a later time, with an expensive rehabilitation project. On the other hand, the hardwoods are on hand and the country cannot wait too long to find all of the answers to manage and use of the hardwood forests. Compromises will, no doubt, have to be made. The Department of Forests in COHDEFOR has a difficult, but not impossible, task ahead.

The industry complexes now envisioned will need large volumes of timber. The Department of Forests will have to make sure these complexes will never have less timber than is available now. This means its Department will have to carefully prepare the liquidation of existing old forest stock so that new crops become available in no less amounts.

All of the industrialization envisioned must also rely on markets. There seem to be no long run crucial problems in the field. There is more and more evidence appearing to indicate demand will be continually upward on a worldwide scale. There is no agreement when shortages of timber will appear, but most experts agree there will be one. The demand curve of the future may have waves but the evidence points to an upward trend, at least following total population growth. With world population doubling in 25-30 years, wood requirements could double also. Keays and Hatton estimate there will be a short fall or wood in 25 years.1/ Add to this the strong probability that as other raw materials and energy sources diminish and increase in price, there will likely be greater reliance in wood for human needs. If this judgment is sound, then the success of the forest production enterprise in Honduras dpends on how well the operation is managed.

b. The second crucial factor is the lack of trained personnel to perform all of the tasks in a rapidly expanding forest production system. A concerted effort will have to be made to solve this bottleneck. The training of professionals must be advanced very rapidly or there must be reliance on hiring foreign personnel. There are very few Honduran trained foresters in sight for four or five years. COHDEFOR may have to resort to providing scholarships for training of Hondurans in other countries.

1/ The implication of full forest utilization in a worldwide scale by the year 2000, Worldwood, Jan. 1976.

c. The very nature of the mandate in Decree 130 places tremendous power in the hands of COHDEFOR. It has the choice of becoming arrogant, corrupt and abusive in the use of that power or of being of tremendous service to the people of Honduras. COHDEFOR is a new entity just beginning to form a tradition and a pattern of operation. Hopefully, it will make a choice that is wise and lasting.

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APPENDIX - Table 1

PRODUCTION OF BASIC FOREST PRODUCTS

	1974	1975	1976	Projected 1977
Conifers in round M^3 (saw logs)	755,000	809,700	1,034,300	1,135,000
Hardwoods in round M^3 (saw logs)	4,600	43,000	42,900	50,000
Posts - Units	4,200	21,300	32,000	39,000
Fuelwood - loads	58,100	128,400	207,400	302,400
Mangrove Bark - M. Tons	-0-	100	100	100
Sleepers - units	-0-	126,400	142,700	95,000
Pine resin - barrels	17,800	38,400	37,900	70,000
Latex de Tuno - 100 lbs units	200	300	100	400
Liquidambar - barrels	-0-	100	100	300
Stumps	-0-	-0-	36,600	70,000
Stumpage Value - Lempiras	4,131,700	5,988,800	7,428,400	8,626,900

SOURCE: 1977 - COHDEFOR Plan of Operations

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TABLE 2

PRODUCTION & EXPORTS OF WOOD PRODUCTS

	Production M.Bd.Ft.	Exports M.Bd.Ft.	Apparent Domestic Use M.Bd.Ft.	Value of Exports Lempiras
1971	236,000	164,500	71,500	38,400,000
1972	262,000	205,600	56,400	54,200,000
1973	305,000	250,600	54,500	78,200,000
1974	285,000	194,200	90,800	80,600,000
1975	203,000	192,800	10,200	77,000,000
1976	234,000	186,900	47,100	85,000,000
1977 (projected)	260,000	206,400	53,600	99,822,400

SOURCE: COHDEFOR 1977 Plan of Operation. Figures check reasonably with Comercio Exterior de Honduras.

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TABLE 3

1977 BUDGET

BASIC PROGRAMS	SOURCE OF FUNDS - LEMPIRAS		
	COHDEFOR	LOANS	TOTAL
Basic Programs			
Forest Management	12,241,700	-0-	12,241,700
Production of Forest Products	79,967,000	600,000	80,567,000
Commercialization	2,275,000	-0-	2,275,000
Development Human Resources	1,524,400	-0-	1,524,400
Pulp & Paper Project	6,156,800	1,843,200	8,000,000
Sub-Total	102,164,900	2,443,200	104,604,100
Support Program			
General Administration	4,710,500	9,039,900	13,750,400
Internal Audit	418,300	-0-	418,300
Dept. of Finances	392,300	-0-	392,300
Controller	637,100	-0-	637,100
General Services	2,767,000	-0-	2,767,000
Sub-Total	8,925,200	9,039,900	17,965,100
Total 1977	111,090,100	11,483,100	122,573,200

NOTE: COHDEFOR anticipates borrowing L. 15,000,000.00 during the year, in short term documents, for working capital and fixed investments. They expect to repay 70% during the year.

SOURCE: COHDEFOR 1977 Plan of Operation.

TABLE 4

IMPORTS OF FOREST PRODUCTS REGISTERED

	1972		1975		1976	
	M. Tons	Lempiras	M. Tons	Lempiras	M. Tons	Lempiras
Plywood and Veneer	577	402,190	553	417,226	785	690,099
Boxes, Barrels, etc.	239	205,642	153	241,381	36	182,006
Other (moulding,doors,carpentry)	119	169,503	197	332,328	126	306,050
PULP & PAPER						
Pulp & Waste Paper	-0-	-0-	-0-	-0-	219	134,811
Mechanical & Chemical Pulp	-0-	-0-	-0-	-0-	52	69,350
Carton, Packing Paper, Boxes	88,353	27,442,545	42,486	25,040,657	73,451	49,907,560
News Print	1,819	720,198	2,052	1,602,593	3,356	2,691,945
Other (Finished Products)	5,467	6,223,979	5,441	11,282,971	6,879	10,749,375
TOTAL PULP & PAPER	95,639	34,386,722	49,979	37,926,221	83,957	63,553,041
GRAND TOTAL	96,574	35,164,057	50,882	38,917,156	84,904	64,731,196

SOURCE: Comercio Exterior de Honduras.

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FISHERIES

Ocean Fishing Area

The ocean fishery resource on the Atlantic Coast is now about 12,960 Km.^{2}. If Honduras adopts a 200-miles economic zone, the area will increase to about 180,000 Km.^{2}, depending on treaties negotiated where 200 miles will overlap the same limit of a neighboring country. The area in Golfo de Fonseca is 2,200 Km.^{2}. Establishment of a 200-mile limit will add little area because of the nature of the boundaries with other countries in the Golfo de Fonseca. Honduras has not made formal claim to the 200-mile limit, but this is both a likely and desirable development for the near future.

A Spanish advisor estimated that the Atlantic fishery has 712 species and the Pacific 312. This seems highly probable out to the 200-mile limit. One hundred ten are rated as commercial. While the number of species is fairly well known, the quantity and proportion in commercial species is not. If the resources within the 200-mile limit are to be prudently exploited, this must be determined, especially in connection with granting of permits to foreign fishing boats during the period in which the Honduran fishing industry is developed. 1/

Current Ocean Fishing Industry and Marketing of the Catch

The annual fish catch in both oceans is about 3,000 metric tons annually of which 74% is shrimp and lobster. The remainder is whitefish and small quantities of clams, crabs and snails. There is no recorded oyster catch. However, there are oysters in several places along both coasts.

There are an estimated 4,300 fishermen on both coasts. The vast majority are artesanales, who fish mainly from cayucos and use primitive methods. This group includes 8 fishing cooperatives with 426 members and more cooperatives are being organized. 2/ Included in the 4,300 are about 660 shrimp and lobster fishermen using 120 boats. 3/ The boats are up to 35 tons and all have icing facilities. The fishermen go to sea for extended periods.

The shrimp and lobster fishermen carry ice in their boats. Shortly after the shrimp and lobster are caught, they are put on ice. Whitefish and shellfish taken by artesanales from cayucos and destined for interior markets are not put on ice until the fisherman reaches shore. A certain quantity is then shipped by refrigerated trucks to the interior. Fish, shrimp and lobster destined for export are kept under refrigeration until loaded for transport to the dock or airplane.

The central market in Tegucigalpa is perhaps a sample of the lack of care given to fish at the retail level. Here some fish booths do not use ice. In other booths, the fish are piled on tiers on ice, the top layer

1/ Except for shrimp and lobster, there is very little fishing by Honduran fishermen beyond the 12-mile limit.
2/ Report of Spanish advisor.
3/ Departamento de Pesca.

offered for sale first. All evidence suggests a high spoilage rate between the day the fish are caught and the day the consumer purchases the fish. Near both coasts fish are generally consumed the day they are caught and spoilage is, therefore, much less.

These problems are well understood and plans for taking corrective action have been developed in the context of a proposed IDB assistance project, designed to improve fish handling and marketing methods. The project will also include technical assistance in training cooperative leadership in administrative matters, and construction of port facilities. Credit will be made available to cooperatives for such facilities as refrigeration and purchase of fishing equipment. No further action seems indicated at this time.

Exploitation of Coastal Resources

Shrimp farming has become a new venture throughout the Caribbean during the last five years. The value of this animal is very high and justifies continued experimentation. Sea Farms, a joint venture enterprise, has been producing shrimp in ponds in the Golfo de Fonseca. Live shrimp are taken in the ocean and females are held for producing eggs, then larvae and finally marketable shrimp. Advance larvae are put in ponds and fed a commercial ration, somewhat similar to a chicken's ration. Thus far the economics of the operation are not very attractive but the company continues to experiment with new procedures. In addition, the Department of Fisheries of the MRN, is operating a one-hectare pond at Amapala for shrimp and other marine species for experimental and demonstration purposes.

As in the case of deep sea resources, the Department recognizes its lack of information about the extent of the coastal resource. A Chinese Mission made a very preliminary study of oysters and curiles, enough to indicate that more intensive surveys should be made.

Inland Water Resources

The continental waters are estimated to have about 62 species of fish. There are no data on the size of the populations on the proportion acceptable for consumption. There are no data available to show if all rivers and streams will support fish. The Department of Fisheries proposes to initiate studies of fish species in some rivers in the northern part of the country.

The catch of fish in continental waters is not known. The amount is likely to be considerable. A survey in El Salvador showed 19% of the total annual catch for the country came from rivers and another 8% from lakes and lagoons, making a total of about 2,670 metric tons. 1/ If the Salvadorean experience applies in Honduras, then the per capita consumption of fish in the country is at least 10% higher than the rate of 1 kg. per capita per year, indicated in some consumption statistics. 2/

1/ Anuario Pesquero de El Salvador, 1975.

2/ Tripartite Report, December, 1975.

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Certainly the rivers offer a good potential for a cheap protein source for campesinos. The National Development Plan recognizes this by indicating that more study should be made of the fishery in continental waters.

Fresh Water Fish Farming

There have been several attempts in the past to produce fish by pond cultures. In 1973 two foreign companies constructed fish ponds in northern Honduras and started producing catfish. Fingerlings were imported from the United States. The output reached 180,000 lbs. in 1973. Hurricane Fifi severely damaged the ponds and the companies decided not to reconstruct them.

An aquaculture project, supported by AID, is in its first year of a 3-year plan period. The objective of the project is to promote the consumption of fish within campesino groups and train technicians that can transmit aquaculture technology to these groups. Two stations will be built, one near Comayagua and another in the Department of Olancho, to adapt and produce Tilapia and Carp. After a local production procedure is developed and found acceptable, the technology will be taken to campesinos who have the facilities and are interested in fish for home consumption or sale.

A private company and the Department of Fisheries, both, are attempting to farm Macrobrachium rosenbergii, a fresh water shrimp. The first project is a commercial joint venture operation in the hands of Aquafinca de Camarón. It has been in operation for four years. Economic success has varied annually. The most serious problem has been inability to obtain consistent production of larvae to replace adults sold when marketable.

The second shrimp project is in operation at La Lujosa, with Nationalist China providing technical assistance to the Department of Fisheries. The project has achieved production of advanced larvae. Some large larvae have been given to farmers but there has been no follow-up to date on results. The project still needs to develop the larvae into marketable adults and also be able to breed adults, and obtain enough larvae consistently to replace the adults marketed periodically.

Control Efforts

The Department of Fisheries' law enforcement program is limited to the coverage provided by 12 inspectors, who are responsible for the activities of all fishermen on all rivers and on both coasts. The area of coverage is indeed high. The Department indicates a special concern for the river fishery; one informal report indicates the use of dynamite and poisons to kill fish. How widespread the practice is, no one knows.

The National Development Plan for 1974-78 points out that exploitation of fishery resources is insufficiently regulated and controlled. It claims countries importing shrimp, lobster and fish from Honduras are showing more tonnage than the Honduran exporters report. There is little doubt that control efforts need to be strengthened as rapidly as means permit.

Manpower

At present, the Department of Fisheries has a staff consisting of the following:

11	Biologists, marine and general
12	Inspectors
9	Extension specialists, working especially with cooperatives
15	Support personnel
47	

Within five years, the needs are expected to be:

24	Inspectors
20	Biologists
18	Extension specialists
30	Support personnel
92	

The Department lacks trained personnel in all sectors of its operation. To overcome this, a project is being developed with assistance from the Japanese Government to create a school of Marine Technology. There are also people being trained in the AID supported aquaculture project and more will be trained in the forthcoming IDB project. However, in all three training situations, graduates will not be available for perhaps three years. In the interim period, the Department will be hard pressed to meet the demand for expanded programs.

The Department will have to be satisfied to continue employing biologists and people trained in other disciplines until people now in training can become part of the operating staff. The proposed marine technology school should eventually supply a large part of the trained personnel needed. However, the Department will still need people with advanced training in some disciplines, e.g., marine biology. This type of training is only available in foreign schools. Provision should be made for scholarship programs.

Research

Surveys and investigations are needed in a wide range of subjects. Some of these are:

a. Determine river populations and use of edible fish.
b. Determine fish and shellfish stocks on both coasts to the 200-mile limit.
c. Continue pond culture studies of shrimp, especially fresh water species.
d. Phytoplankton studies in both oceans.
e. Continue studies in pond cultures of fresh water species and adapt to small farmer use.

f. Determine how to culture oysters, especially for the artesanales.
g. Icthyological studies of commercial species in rivers and oceans.

Most of the subjects listed are related to management needs for the fishery resources in all types of water. There is no way at present to know if these resources are overused or underused...

Legislation

The basic law in effect giving authority to the Secretary of Natural Resources, through the Department of Natural Resources, to develop and manage the fish resources in Honduras is in Decree 154, May 10, 1959. The Department considers this law inadequate. A new law, therefore, has been written and is in final draft form. It is very detailed and comprehensive, and is conceptually sound. However, some articles seem unnecessary while others should perhaps be placed in regulations.

Conclusions

The GOH has initiated actions toward finding solutions for a number of problems in the development of its fish resources. For example, a marine technology school is being established. A program for developing the artesanales section of the fishing industry will be forthcoming. A project is underway to develop aquaculture for shrimp and fresh water fish. A new fish law has been drafted. Aquaculture systems are also being developed for the small farmer. There remains, however, the need to provide means to obtain more basic information about the resources in the oceans and continental waters and to rationalize their use so that the productivity of the resources can be sustained or even improved. The achievement of this calls for more surveys, investigations and then followed by control measures based on good information.

When the 200-mile economic zone is declared, the GOH must decide how to exploit its potential. Except for shrimp and lobster, a very small tonnage of fish is caught beyond the 12-mile limit by Hondurans. Initially, foreign fishermen will probably apply for fishing permits in the zone. However, actual exploitations should be by Hondurans. The GOH will need to promote investment in fishing boats, equipment, promote formation of new enterprises, etc., in order to realize the full benefits of the economic zone.

The major constraint to achieving the development of fish resources is lack of trained personnel and financial support. In addition to more personnel, more equipment, vehicles, etc., will be needed, especially in the management function of the Department of Fisheries. The inspectors will need to be supplied with more vehicles and boats. A larger boat will be needed for shrimp in the economic zone. Personnel on river surveys and studies will also need transportation and supplies.

In the National Development Plan it is pointed out that the exploitation of the river fishery should be studied. This is a valid suggestion. A greater focus is needed in this section because river fish provide a cheap source of protein for campesinos.

ANNEX K

SOCIOECONOMIC PROFILE OF SMALL FARMS

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SOCIOECONOMIC PROFILE OF SMALL FARMS

1. INTRODUCTION

The objective of the surveys described below was to facilitate an analysis of small farms as household units of production of goods in order to pinpoint some of the principal constraints faced by the small farm families, and to arrive at an analytically precise definition of potential target populations within the independent small farmer population.

The sector is divided into four subsectors: Commercial farmers, agrarian reform farms, and traditional farms, and the rural labor force. This report focuses on the traditional farms. The analysis, in the first instance, takes up the interrelationships of resource availability and resource management on small farms, and in the second instance, the income and quality of life of the small farmer population which is an outcome of the production and marketing of goods on small farms.

While the term "traditional" is the accepted rubric of independent small farms, this report uses the term peasant farm throughout, since degrees of "traditionality vs. modernity" are found on small farms. The a priori definition adopted to distinguish the peasant sector from the other two, is a size criterion--all farms under 35 hectares were included as the starting point for data collection and analysis. This definition was adopted on the basis of the 1973 sector assessment. An estimated 92% of all farms in Honduras are included, occupying 35% of farm land with 63% of the rural population. (Table 1.1).

1.1 The Data and its Treatment

This report is a descriptive analysis. Mere description would add little of value to the current fund of knowledge on small farmers. Thoroughgoing analysis is beyond the scope of the report. What is intended is sufficient analysis to identify major constraints and areas of possible intervention.

The data base for the analysis was developed through a survey of 2,073 small farmers in the six principal agricultural regions of the country. The first survey was done by ATAC in 1976, for the 1975 crop year. It covers the south, north, and east regions with a sample of 1,086 farms. The second survey done by AID and the Ministry in 1977 for the 1976 crop year, covers 987 farms in the remaining 3 principal regions of the country. The data covers land tenure, land use, production inputs and outputs, and some social variables. It does not provide for strictly agricultural analysis, including such variables as soil conditions and is subject to the limitations common to all large-scale surveys. The sample selected is representative of the population as a whole, most of the findings are significant at the .001 level.

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In addition to the survey, two micro-socioeconomic studies were conducted focusing on the interrelationship of production and marketing in two peasant communities--one market--oriented and the other subsistence-oriented. This microeconomic analysis is referred to in the report, especially in relation to productivity and marketing.

The accounting methodology for the analysis of data was developed by ATAC. Gross production, farms costs, and net income variable were derived from the survey data. This methodology is used as the first descriptive step to prepare the data for this report. (a)

The majority of the findings included in this report are derived by a disaggregation of farms on the basis of two criteria: region and farm size. Regional disaggregation is reported only where there are significant differences to be found, in order not to burden the reader with a wealth of descriptive detail about regions and regional variations.

The following verbal conventions have been adopted to describe the disaggregated peasant farm size categories:

Numerical measure	Verbal description
0.6 - 3.0 Has.	very small
3 - 5 Has.	small
5 - 20 Has.	medium-small
20 - 35 Has.	medium-large

The analytical tool used to assess meaningfull differences in the farm size and regional groupings were analysis of variance and tests of linear relationship between variables. Hypotheses were developed and put to the test of the data; this report includes the results of hypothesis testing that were meaningful either in their strong affirmation or strong negation of some hypothesis. As this is an operational document and not a scientific report, the style is purposely geared to omit reference to the scientific procedures used to arrive at conclusions.

(a) For a full account of the methodology, see Vol. V of the ATAC report.

All the major interpretations in the report are based on analytical statistical treatment of the data, made possible through the use of computer methodology. As the purpose of the analysis is to see the interrelationships of variables, such statistical treatment is necessary. The reader should be advised that "significance" is used throughout this report in the sociological sense, primarily to assess whether the differences between means (averages) are significant. For example, when the variable "land tenure" is broken down by "farm size", the significant of difference between means in farms of different size is assessed statistically. A finding that is "significant at the .01 level" is one which has only one chance in 100 of being wrong; a finding that is "significant at the .001 level" has one chance in a thousand of being wrong.

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The strength of relationships between variables is measured in three ways: eta squared, Pearsons R, and R. squared. Eta squared measures the total proportion of variation in a dependent variable that is explained by the independent variable. Pearsons R measures the goodness of the fit of the relationship between the two variables to the regression line. R squared has a more intuitive interpretation than the other two measures. It measures the proportion of variation in the dependent variable that can be explained by a linear regression on the independent variable. For this reason, R squared is the value that will be referred to in the narrative of this report, though all three statistics are referenced on the tables.

1.2 The Peasant Farm/Household Unit

The peasant population of Honduras is distinguished from farm laborers by control over farm land, and from commercial agriculturists by differences in the use of industrial agricultural technology. The dividing line between peasants and commercial farmers is not absolute, rather, there is a continuum of access to resources. All the population surveyed used some item of industrial technology in crop production. Relation to the market does not provide an absolute distinction either, as there are degrees of commercialization to be found. The size criterion was adopted as a proxy measure providing an absolute dividing line, but its artificiality must be kept in mind throughout the analysis. Some farms are larger than 35 hectares, that by other criterion are peasant farms, and other farms under 35 hectares (principally coffee farms) are fully industrialized.

This analysis sees the peasant household farm enterprise as an undifferentiated unit of production and consumption. It is undifferentiated not only in its combination of consumption and production functions, but also in the sense that manipulation, though not always ownership, of the means of production is combined in the household. This means, the peasant is owner/manager cum laborer on his farm.

It is important to note that though it is relatively self-managing unit, the peasant farm is not strictly analogous to the commercial farm. Unlike the commercial farm, the peasant household generates goods to provide for household maintenance rather than to generate profit. Even among cash-crop producing peasants, the orientation is toward consumption rather than profits. The peasant farm is a land-management and labor-organizing household unit which is primarily oriented to provide material necessities.

While it is true that the peasant is his own laborer, this does not mean that all farm labor is done exclusively by the family. The analysis focuses on the ratio of family to wage and exchange labor in the production process. The bulk of the labor, even on the largest of peasant farms, is provided by the household. In classical economic terms, cost/benefit analyses value family labor at the same money exchange rate as wage labor. An alternative view, which is closer to the peasant's analysis of his own

decisions on land that he owns privately; land in other categories is similarly under his control. Decision about crop mix or rented land are usually left to the renter; however, the peasant is less likely to invest labor in intensive soil improvement or conservation practices on rented land than on privately owned land. Sharecropped land is subject to a variety of controls imposed by the landowner.

Thus, the smaller the farm, the less effective management control the peasant has over his land.

Perhaps a more serious consequence of the tenure situation in terms of access to productive resources, is its relation to credit. Credit lending institutions, both private and public, will only mortgage private land. As farm size decreases, there is a decrease in mortgageable land not only in absolute terms determined by farm size alone, but in relative terms, determined by the relation between farm size and tenure status.

2.1.2. Labor

2.1.2.1. Family Labor Supply

The availability of family labor was measured by a composite index derived from survey data. The relative contribution of males, females, and children to actual farm labor was determined by calculating the ratio of male, female, and child/days work. For every 100 days of the male farm production labor there are 10 days of adult female labor and 3 days of child labor.* The composite index of full-time farm laborers was derived by multiplying the absolute number of individuals in each category by their relative contribution to farm labor. Thus, adult males are counted as one full-time farm laborer, adult females as .10 farm laborers, and children as 0.03 farm laborers.

There is a positive linear relationship between family labor supply and farm size, i.e. as farm size increases the number of full-time farm laborers increases. (Table 2.3). On the average, medium large farms have one more laborer than do small and very small farms. The most probable explanation for this is not family size alone but delayed departure of males and females from the parental household on the larger farms.

There are no significant regional variations in the size of the family labor pool.

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*(Note: There is an underestimation of female and child labor for two reasons. First, male head of household respondents were less clear about their spouses' and children's labor investment than their own. Second, the bulk of female agricultural production chores are invested in animal care and family garden plots, which occupy a considerable amount of time in the long run, which is made up of short periods of daily attention. It was extremely difficult for informants to arrive at estimates of animal and garden plot labor, which do not occupy whole days as does farm plot production).

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situation, does not view labor as a cost while analyzing returns to household labor as the best measure of net income. An intermediate approach is to compute the opportunity cost of labor.

Unlike a firm, the members of the peasant household cannot be cost accounted, hired and fired in accordance with the labor market and the profitability of the organization. Labor is recruited by birth, adoption, or marriage, and lost by outmarriage and death. The personnel of a firm are employed by the organization while the personnel of a peasant household are the organization.

The peasant household shares some of the basic functions of the modern firm, with the requirements that returns to the product must be at least marginally greater than the costs of production, and some of the structural characteristics of the household, with family-based membership. It is the combination of these characteristics that make the peasant farming household unique.

2. ANALYSIS OF THE POTENTIAL TARGET GROUP

2.1 Resources

2.1.1 Land

Land is the basic productive resource. The aspect of land analyzed here is its tenure status, because of the importance of tenure in production costs, access to credit resources, and decision-making on the farm. The categories of land tenure are private ownership, sharecropping, renting, and other types. As shown in Table 2.1 for the population surveyed, the majority (65%) of farm land is owned by the peasant, with significant proportions in other tenure (18%) rented (13%), and a relatively insignificant proportion sharecropped.

When the tenure status is disaggregated by farm size, an interesting pattern emerges. A strong positive linear relationship is shown between farm size and proportion of privately owned land--the larger the farm, the greater the percentage of total farm land that is owned. Farms with less than 1 hectare own only 25% of their land while medium large farms own 98%.

Farm size alone is a good predictor of tenure status, as 24% of the variation in proportion of privately owned land is explained by this factor alone.

When tenure status is disaggregated by region, some meaningful differences are observed. (Table 2.2). The western region has a proportion of ownership which is 10% lower than the mean, while the central western region is 16% higher than the mean.

The importance of tenure status is in its relation to management and control over resources. The peasant farmers makes all management

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2.1.2.2. Wage vs. Family Labor Supply

An index of the relative contribution of family and wage labor to farm production was constructed by computing wage labor as a percentage of total labor. (Table 2.4). This index is analyzed in relation to farm size in two ways: first, the proportion of farms within each category that utilize any wage labor at all; second, the amount of wage labor used by those farms within each category which do use labor. There is a positive linear relationship between farm size and reliance on wage labor, i.e., the larger the farm the greater the likelihood that wage labor is used. Half of the very small farms employ wage labor while approximately 85% of the rest of the farms employ labor. On those farms that do employ wage labor, there is not a great amount of variation in the proportion of wage labor employed; the average for all the farms is 37%, with very small farms acquiring 30% and large farms 40% of their labor by wage recruitment.

The importance of these variations in the reliance on wage labor for farm production is conditioned by the analytical approach taken to labor in the peasant household in general. If family labor is not viewed as a cost of production, then the conclusion is that the larger the farm, the greater the absolute likelihood that cost will be increased and the greater the relative size of the cost. However, if family wage labor is costed at a standard wage value, then this factor is less important in evaluating production costs.

2.1.2.3. Underemployment of Family Labor

One of the principal tenets of peasant production processes is that it is labor intensive rather than capital intensive, that is, the major input and factor of production over which the peasant household has the greatest discretionary control is its labor force. Thus, production strategies hinge principally upon the allocation of labor, the other factors deployed to facilitate labor allocation. The production and productivity of the family plot is therefore dependent on the input of labor.

The examination of data on mean number of days worked on the farm leads to a preliminary conclusion that there is severe underemployment, with only 150 days out of a workyear of 280 - 300 days actually invested in labor. This figure is seriously misleading for various reasons. Family labor is underreported in the survey because of the difficulty of recalling intermittent hourly periods of female and child agricultural labor, of male adult labor in certain categories, such as animal husbandry and wood cutting, and because a number of significant but not highly remunerative tasks were not included in the survey. Extrapolation from data in the microeconomic survey shows an average of about 250 days worked, which is probably more realistic but still shows considerable underemployment.

There is a point at which the intensification of labor efforts produces diminishing returns. Increased production can only be accomplished

by the intensification of drudgery. Adequate analysis of this aspect of farm labor would require more in-depth research.

2.1.3. Capital

Capital is measured in terms of gross farm capital and non-farm capital to arrive at total gross capital. Net capital is determined by deducting the value of debts at the end of the calendar year. Agricultural land, building, tools and machinery, animals, and crops stored for seed of future sale, are defined as agricultural capital. The farm house and other properties are defined as non-agricultural capital.

The analysis here will concentrate on describing the distribution of capital by farm size and region, to give some idea of the range of variation in gross and net worth of peasant farms. Access to credit is also analyzed in this section, though some points may not consider this to be methodologically sound, because the difficulty of capital accumulation on farms with marginal production makes credit the only available means for increasing working capital in any given year.

2.1.3.1. Gross and Net Capital

The finding that there are differences in gross capital determined by farm size would be, on and of itself, a trivial one. The amount of these differences constitutes the significant finding, since this permits further assessment of the return to capital as a measure of farm productivity. As shown on Table 2.5, there are significant differences in gross capital. On the average large farms are worth, six times as much as the very small farms. A strong relationship exists between farm size and gross worth. However, when gross worth per hectare is measured, the reverse relationship obtains, as very small farms are worth seven times as much per hectare as are large farms. (Table 2.6). This reversal is probably related to the decreasing intensity in the use of land with increasing farm size, discussed below in paragraph 2.2.3., and the heavy concentration of capital in tools, buildings, etc.

Indebtedness does not increase in a linear relationship with farm size, as seen in Table 2.5. Farms at both ends of the scale have a very low level of indebtedness in relation to borrowing, with debts ranging from 1-3% of credit. Farms in the 2-20 range have a very high level with average indebtedness as 8% of credit. In other terms, very small and medium-large farms are good credit risks; small and medium-small farms are not such good credit risks.

2.1.3.2. Credit

One of the commonly-heard observations about the availability of credit in rural Honduras is that the larger the farm, the greater access there

is to credit. This cannot be completely assessed from our data because commercial farms and credit availability were not studied. However, a relative judgment of this hypothesis, within the peasant farm category, can be ventured from the data. A linear regression of farm size on credit per cultivated hectare was carried out, without controlling for the effects of other variables. With increasing farm size, there is an increase in the credit obtained per cultivated hectare. Farm size alone accounts for 10% of the variation in the availability of credit on peasant farms, a finding which is significant at the .001 level.

The above finding includes all farms, whether they obtained credit or not. That is, there is a greater mean value of credit per hectare on larger farms than on smaller farms when all farms are included. The same test was conducted on those farms who do, in fact, have credit. It is extremely significant to note that there is no significant relationship between farm size and amount of credit per cultivated hectare among credit users.

The difference in the relationship between credit and farm size on all farms and credit-using farms demonstrates that farm size has a significant effect on access to credit--that is, it is an influential factor in determining whether a farm does or does not get credit to any given farm that does, in fact, obtain access to credit.

Access to credit is a greater constraint for smaller farms than for larger farms. Once a farm is drawn into the credit sphere, its size does not exert a constraining influence on the level of credit it receives. Of course, a full analysis of this phenomenon would require entering crop type and other variables into the equation.

The difference between credit per cultivated hectare on very small and medium large farms is very great indeed. Farms under 1 hectare get a mean of $8 per hectare and large farms have a mean which is 1200% larger. (Table 2.7).

In summary, access to credit is a constraint whose importance increases as farm size decreases. The cause of this phenomenon constitutes one of the significant problems in the target group analysis. One hypothesis is that peasants with less land are more traditional and, therefore, are less likely to have a favorable attitude toward credit, consequently refraining from seeking it. This hypothesis was put to the test by correlating farm size with a measure of the desire for credit and a measure of attitude towards the use of credit. There is no significant difference in desire for credit or attitudes toward credit between smaller and larger farms. Therefore, the hypothesis that differences in access to credit are caused by differences in peasants' attitudes toward it can

be discarded. [1/]

2.2. Resources Management and its Outcome on Small Farms

The distribution of basic resources on peasant farms fixes the basic parameters of the productive process. The management of these resources in production strategies is perhaps a more important question, as it provides information on the possibilities of improving or increasing farm production without changing the structure of resource distribution on peasant farms. While the latter course of action may be the most desirable or necessary method to improve the lot of the small farmer from some points of view, the history of change in peasant societies shows that it is at best a slow process.

This analysis does not delve into the process of resource management on small farms but on its structure and outcome. Labor intensity, input intensity, crop intensity and mix, and level of technology are all analyzed in their relation to productivity and orientation to the market. Productivity, obviously, is an outcome that is determined by factors beyond human control (weather, acts of Gods, etc.), factors that are somewhat amenable to human control (access to basic resources), and factors that are more subject to human manipulation (crop mix, labor intensity, level of technology.)

2.2.1. Land Use Intensity

The intensity of land use was measured by determining the relative proportions of farmland in crops and improved pasture, in fallow, in natural pasture and forest, and land not in use because of a lack of resources. The first measure constructed was a ratio of used to unused land, with crop and improved pasture land counted as used land. There is an inverse relationship between farm size and intensity of land use, as very small farms use twice as much of their land as medium large farms. (Table 2.8).

An alternative measure is to include fallow land in the category

1/ An alternative hypothesis is that there is differential access to credit because of policies, overt or implicit, of credit lending institutions which preclude assistance to the very small and small farms. This cannot be put to the test, unfortunately, as it would require data on credit lenders as well as credit users. While it may seem a plausible explanation for the fact of differential access to credit, its confirmation awaits further analysis.

of used land. The proportion of fallow to all land increases as farm size increases, reducing slightly the size of the difference in land use intensity. The meaning of fallowing must be understood clearly in order to assess its significance in relation to land use intensity. Some schools of thought to the contrary notwithstanding, fallowing land in peasant societies does not decrease the intensity of use of land. Rather, it is a means of permitting the further intensive use of land. In fact, fallowing as a practice in Mesoamerican peasant agriculture appears as farming evolves from tropical horticulture to swidden (slash-and-burn) agriculture. Fallowing increases in importance as agriculture intensifies.

Fallow land is a category of crop land, not of slack or idle land. The fallowing period and the amount of land in fallow, is shortened only when there is a shortage of land or when the intensive use of fertilizer is introduced. The data show that proportion of fallow land on very small farms is negligible; in farms less than 1 hectare, there is no fallow land.

There is some regional variation in the proportions of used and fallow land on the farm. Most notably, in the central-western region, farm land is used less intensively. This is corroborated by, or corroborates, the observation in both community studies conducted in that region that there is little apparent pressure on land resources. Similarly, the central western region has a fallowing ratio that is two times greater than the mean.

Natural pasture is difficult to categorize as either used or unused land. It is, however, definitely not used intensively on most of the peasant farms surveyed. Forest land is not used for crop or range purposes, but it is probably, in the main, not suitable for such uses. It is an important part of the farm economy as a source of fuel. There is a very significant difference between very small and small farms, on the one hand, and medium small and medium large farms, on the other. The latter have forest and natural pasture land area that is two to three times greater than the mean, and the former have half or less than half of the mean proportion. There is, finally, a significant difference in land that is unused due to lack of resources, as there is an increase in this category with increased farm size.

To summarize: the larger the farm, the less intensive its use of land. Small farms use their land twice as intensively as medium large farms.

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2.2.2. Crop Mix

Crop mix is usually considered a measure of the intensity of farming practices. For this analysis, it is considered one indicator of the subsistence vs. the commercial orientation of a peasant farm. Any of the staple crops on the farms surveyed, can be farmed extensively or intensively, or more accurately, there are degeees of intensity in the cultivation of all the staple farm crops. Maize with fertilizer is considered intensive; maize without fertilizer is extensive. These possibilities simply illustrate how unsatisfactory crop type and crop mix is as a measure of intensity.

There is a continuum of farm crop mix orientations which will be categorized as follows: those that sow primarily corn and beans are considered subsistence-oriented; those that sow primarily cash crops (coffee, tobacco, etc.) are considered market-oriented. There are various categories between these two extremes. However, crop mix is not isomorphous with subsistence or market orientation. Ratio of crops marketed, which is the more direct measure, is analyzed below.

The smaller the farm the greater is the proportion of its crop production in basic grains. Small and very small farms are roughly 85% basic grain producers while medium large farms produce only 60% of their crop value in basic grains. (Table 2.12) with other annuals, the relationship is reversed--with 2% and 8% on small and medium large farms, respectively. Permanent crops account for 5% of farm production and 29% of medium large farm production.

There is a significant regional variation in the proportion of permanent and annual crops. Farms in Olancho and the South have very small proportions of, the North and Central-eastern region are close to the national mean and the West and West-central regions produce twice as high a proportion as the national mean.

2.2.3. Labor and Technology Intensity

While peasant agriculture is, in general, labor intensive rather than capital or technology intensive, it is important to analyze the variations there are in the relative proportion of labor and technology intensity, in order to define constraints to the intensification of technology. Therefore, an index, albeit rather crude, was constructed by calculating the relative proportion of labor investment to other production costs, with the hypothesis that smaller farms will be more labor intensive.

There is considerable variation in the ratio of labor to technology costs on the peasant farms surveyed. In very small farms the ratio is 16:1, while on the medium large farms it is 2.5:1. Thus, very small farms are considerably more labor intensive than are the larger farms. This

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quantifiable distinction is one further indication of the overall differences between farms of different size in the potential target group.

2.2.4. Farm Production and Productivity

There are several different measures of productivity available to the analyst of small farms. The measure used here is one of the cash value per hectare of crop production. This cash value is measured in two ways, to assess two different phenomena. The first measure assess gross income and the second measure is one of net income. A comparison of the two measures, provides an indication of the returns to investment. The number of hectares is also measured in two ddiferent ways: total number of hectares on the farm and the number of hectares used for crops and/or animals. The first gives an indication of farm productivity; the second measures the productivity of land that is actually used.

2.2.4.1. Farm Productivity and Profitability

The productivity of small farms can be measured by calculating returns to capital and returns to labor. Productivity measures the production per unit of capital or labor, while profitability measures the net income per unit of capital or labor.

As apparent from Table 2.15, farm productivity measured in terms of returns (in Lempiras) to agricultural capital decreases as farm size increases. The very small farms generate more than three times as much crop production per Lempira of capital than the larger farms, i.e., L. 1.04 vs, L. 0.28. In terms of total farm production, the very small farms generate 270% greater production per Lempira of capital than do the larger farms.

In terms of returns to labor, the situation is reversed. The small farms pay a wage of L. 4.58 per day worked on the farm, and the larger farms pay L. 10.01, an increase of more than 100% (Table 2.16) The larger farms are not only more profitable as generators of wages, but also as generators of production per day worked. i.e., L. 5.98 vs. L. 11.99 generated for each day invested in labor.

Thus, while the very small farms are more labor intensive, they generate less value and less net profit per unit of labor. The medium large farms, conversely, are more capital intensive but generate less value per unit of capital than do the very small farms. Productivity and profitability on farms is a function of the interaction between labor, capital, and land. Labor is more productive on medium large farms because its impact is mediated and multiplied by the level of capital

investment on those farms. The level of capital investment is very low on small farms; therefore, there is a diminished return to labor although the return to capital is very high.

When labor costs are imputed, the relationship changes considerably. There is a positive linear relationship between farm size and net crop income per hectare; as farm size increases, net crop income per hectare increases and 12% of this variation is explained by farm size alone without reference to other factors.

In sum, larger farms are somewhat more productive of net income because the returns to labor are greater on larger farms than they are on smaller. However, in terms of the value of production before labor costs are deducted, there is no difference between smaller and larger farms.

The pattern of variation in average productivity per hectare is informative. The mean for all farms is $210 (L.240); an index was constructed placing the national average at 100. Productivity on farms less than 1 hectare and farms that have 2 - 5 hectares is less than the national average; farms with 1 - 2 hectares and 5 - 20 hectares are slightly higher than the national average; and farms from 20 - 35 hectares are significantly higher.

There is significant regional variation in productivity; however, this should be interpreted in light of the crop year to which the surveys refer. The South, North, and Olancho survey relates to a bad crop year; the other regions were surveyed in a relatively good crop year. The west-central region shows a significantly higher productivity than the other regions surveyed in the same year.

2.2.4.2. Productivity per Hectare

There is no significant relationship between farm size and productivity per hectare when labor costs are not imputed. In fact, there is a very slight negative relationship, as productivity decreases by 2% as farm size increases; however, this finding is not significant.

2.2.5 Disposition of Crops

The disposition of crop production is probably the most useful measure to distinguish degrees of subsistence orientation. Four categories are considered here: crop production for sale, for home use, for farm use, and for payment of rent.

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There is significant regional variation in the proportion of crop production that is sold. The North, South, and Olancho sell about 50% of their crops; the West, West-Central, and East-Central regions sell about 25% of their crops. (Table 2.23). This difference is a reflection of the differences in farm size among the farms sampled, as the first three regions are significantly larger on the average than the last three.

The ratio of crops that are marketed to crops kept for home use is strongly related to farm size. On farms that are less than 1 hectare, the ratio is 1:6. On farms larger than 20 hectares, it is 1:1.2. There is a natural break between farms less than 2 hectares and farms greater than two hectares. The ratio on the former is 1:4.5 and the latter 1:1. (Table 2.22).

To state it simply, the medium-small amd medium-large peasant households sell as much crop produce as they eat. The very small peasant households eat four and a half times as much as they sell.

2.2.6. Sources of Peasant Household Income

The discussion to this point has been limited to income from farm sources. However, all peasant households depend to some degree on non-farm income such as farm work done for others, craft and other work for the household, hunting, fishing, interest and dividends, and other sources. The principal source of non-farm income for the households surveyed was farmwork done for others.

As shown on Table 2.24 there is a correlation between farm size and the source of family income. As farm size increases, there is a decreasing dependence on non-farm income. The farms under 1 hectare get two-thirds of household income from non-farm sources, while the largest farms get 90% of their net income from farm sources.

Again, it is possible to dichotomize the farms in two categories on the basis of relative importance of farm income to household income. Farms under two hectares get 50% of more of their income off the farm; farms larger than 2 hectares get less than a third of their income from non-farm sources.

The sources of farm income have been discussed earlier, in terms of crop and livestock income. There is no significant difference in the proportion of crop to other income on farms of different size. That is, the mix of crop vs. livestock, forestry, and other farm income is similar on farms of different sizes.

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2.2.7 Technical Assistance

Technical assistance is provided to peasant farms by both private and public agencies. The coverage of technical assistance is very low, as only 10% of the peasant farms surveyed have received any technical assistance at all. There is an unequal distribution of the little technical assistance provided, both regionally and in terms of farm size.

The east, west and north regions have assistance that is slightly lower than the national norm; the east central and west central regions have a higher rate of assistance (Table 2.25). This regional variation might be explained in terms of proximity to the capital of the country, as the first three regions are relatively distant from the capital and the other two are relatively near.

There is a significant correlation between farm size and technical assistance. The very small farms receive assistance at half the national rate; the large farms receive twice as much assistance as the national average. Small and medium-size farms receive average attention. In other words, there is one in four chances that a medium-large farm will receive technical assistance, and one in twelve chances that a very small farm receives technical assistance.

Technical assistance was assessed in relation to the level of attention as well as the presence of assistance. Medium-large farmers have received nine times as many classes as the national average, twice as many demonstrations, and three times as many visits. The east central and west central regions, have three times as many classes and twice as many demonstrations. Interestingly enough, the distribution of visits by technicians is somewhat different: the west central region has twice the norm while the north and west have slightly more than half.

2.2.8 Membership in Cooperatives

One final aspect of resources and resource management to be analyzed is membership in cooperatives. Cooperatives are a source in that they provide inputs at lower than market rates, or mechanisms for labor exchange and access to land, or means to organize savings and credit. Ten percent of all traditional small farmers belong to cooperatives.

Table 2.26 shows the regional variation in cooperative membership among small peasant farmers. The south and east central regions have only half as many coop members per 100 farms as the national average. The east, west, and west central membership have one-and-a-half times

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as many coop members per 100 farms as the national average. The influence of farm size on coop membership is very notable. Only 1% of very small peasant farmers belong to cooperatives while 18% of the medium large farms belong.

Of those who are coop members, 2% belong to FECOAGROH, which are agricultural multiple services cooperatives. The preponderant majority, 74%, belong to FUNDHESA and other agricultural production and input cooperatives. Savings and credit cooperatives account for the remaining 24% of cooperative memberships.

It is significant to note that of those who are not currently cooperative members, half are interested in joining and the other half are not interested. Potential and actual cooperative membership, in the present situation would encompass 50% of the target group.

When cooperative membership is compared to affiliation with peasant organization such as ANACH, UNC, and others, an interesting pattern emerges. Only 3% of all traditional small farmer, do in fact, consider themselves members of these groups. Of these members, 15% belong to ANACH, 20% belong to UNC, and 64% belong to independent cooperatives.

To summarize: agricultural cooperatives provide a means of reaching 10% of all small farms at the present time. They provide a potential means for reaching an additional 40%. Peasant organizations reach only 3% of all traditional small farmers.

2.3 Quality of Life in Peasant Households

The outcome of the processes of resource management is to produce income, which can be invested by the peasant household in maintaining or improving the quality of its living conditions. The most direct measure of quality of life, would of course, be nutritional status, as nutrition is the basic necessity. The data do not allow an analysis of the nutritional status of the peasant population nor its correlation to farm size. 1/

2.3.1 The Quality of Life Index

An index albeit rather crude, was constructed on the basis of five variables; ability to provide medical treatment, type of house floor, distance to potable water, access to household letrines, and education.

1/ Note: The assessment of the nutritional status for Honduras, analyzes rural vs. urban distinction in nutritional status, and the relation of income to nutrition, but it does not disaggregate farm families by the size of farm; thus a comparative analysis with that data is not possible.

The index was constructed by coding a value for each of the following: if the family is almost always able to pay medical bills, if it has non-diet floors, if it has letrine, and if the head of household is not illiterate. The household scored zero if it had none of these and five if it had all. The distribution of the index values by farm size is depicted in Table 2.27.

The relation of quality of life to income was assessed by correlating the two variables in a Person correlation test. There is a moderate relationship between the two variables, as 16% of the variation in quality of life is explained by differences in net family income. The mean per capita net income of those on the low end of the quality of life scale is L.145.44; the mean per capita net income of those on the high end of the scale is L. 410.72 (See Table 2.28).

2.3.2 Educational Level

The illiteracy rate on the farms surveyed, is slightly lower than the average for the rural areas -- 43.8%. There is a relation between farm size and illiteracy, however, the smaller the farm, the higher the illiteracy rate (Table 2.29). The percentage of heads of farms who have finished sixth grade or who are literate increases steadily as farm size increases.

An educational score was derived by calculating average number of years in school for those who have had some schooling. The average for this population is 2.6 years; the average for all farm heads of household is 1.5 years.

There is some regional variation in educational level: the east central region has an illiteracy rate that is 18% lower than the national norm and the west central region is 15% higher. (Table 2.30).

3. Income Definition of the Target Group

The objective of this analysis is to identify, within the traditional and agrarian reform sector and an operationally manageable fashion, the potential target groups on the basis of net per capita annual income.

The standard of poverty used in this analysis is based on the 1969 AID/W figure of $150 per capita annual income. Adjusted upward to 1978 on a 6% inflation rate, the figure is roughly $250 (L.500) per annum.

The average net per capita income for farms under 35 hectares is $130.23 (L. 260.46). Only 16% of this target group has an income that is above the poverty level. The average net per capita income for

families on group farms is $105.59. This includes income to the group farm partner from the farm, from his own farm land (if any), and from non-farm sources.

Clearly, then, both the traditional sector and the reform sector have a mean net per capita income level that is well under the poverty level. The following section explores whether disaggregation of these two sub-sectors sheds any light on priorities within each.

3.1 Income Definition of the Traditional Sector

Income is an unsatisfactory direct measure for the selection of target peasant farms for two reasons: (1) the fluctuation found on all farms would make it necessary to have longitudinal data for each farm selected in a program; (2) income data are not readily available for farms in much of rural Honduras. Farm size, on the other hand, is a criterion which is readily verifiable and for which data exists at the municipal, regional, and national levels. Because of its operational utility, farm size will be used as a proxy for income in this analysis.

Table 3.1 disaggregates income by farm size for farms in the traditional sector. The net per capita income of the very small farms (.6-1 hectares) is $63.01 (L.126.03). The figure increases steadily to medium-sized farms (5-20 hectares), whose income of $163.75 (L.327.49) is well below the poverty level. The larger farms (20-35) hectares have an income slightly higher than the poverty level -$259.50 (L.519.18).

The distribution of income by income category and farm size is detailed in Table 3.2 and summarized in Table 3.3. There is no farm size category which is a perfect correlate for a poverty income level, as even on the smallest farms there are some incomes above the poverty level. 1/ One quarter of all farms in the 5-35 hectare range and one-third of those farms in the 20-35 range are above the poverty level.

The definition of an upper limit to the farm size of potential target groups in terms of poverty level would have the following effects: if 5 hectares is the upper limit, there is a 10% chance of including a farm over the poverty level in the target group; if 20 hectares is the cut off point, there is a 15% chance; if 35 hectares is the upper limit, there is also a 15% chance. In summary, there is not a significant difference in the rate of inclusion of non-poverty

1/ It is not possible to arrive at an average farm size figure that would correlate perfectly with the poverty level of income, because the spread of income values at all farm size categories, is such, that selection of any average farm size above 1 hectare would still include some non-poverty farms.

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farms whether the line is drawn at 5,10 or 35 hectares.

3.2 Income Definition of Group Farms

For group farms, a different set of disaggregation criteria is utilized. Size alone is not a good criterion, since it is the number of hectares per family which is critical. However, the size figures available for the group farm alone, are not a true reflection of the situation, as the majority of families in group farms also have land owned and worked individually. Since the size data available for the group farms per-se do not refer to the ancillary private land, this measure would not be operationally useful for field selection of target group farms. Instead, the criterion used is the farm type.

The net per capita income level on group farms is somewhat lower than in the traditional sector. The mean for all group farms is $105.59 (Table 3.4). If farms are disaggregated into "asentamientos" and cooperatives, the mean is $100.67 and $131.31, respectively.

As is apparent, all of these income levels are considerably below the poverty level. On the whole, then, all types of group farm should be included on the income criterion alone. The general national definition of reform farm groups as a priority target group in terms of income, does not preclude the exclusion of individual cases that are well above the poverty level. There are some exceptional parts of the reform sector, most notably the Guanchías and Isletas banana cooperatives, that are clearly above the poverty level.

4 Summary

4.1 Peasant Farm Households

The following summary of constraints faced by the potential target groups in the traditional sector, is based on the interpretation of survey data and of the case studies. Constraints are summarized by farm size category, which includes the following: very small farms (1.6 to [illegible] hectares); small farms (3-5 hectares); medium-small farms (5-20 hectares); and larger small farms (20 to 35 hectares).

4.1.1 Very Small Farms

The principal constraint of very small farms, obviously, is lack of access to land and capital. This is compounded by the nature of land tenure for the land that they do farm, since on the smallest of these farms only a quarter of the land is privately owned. Access to credit is constrained primarily by the fact that most of the land in

these farms is rented or sharecropped, as well as the reluctance of credit lending institutions to deal with small amounts of credit.

There is an excess of labor on these farms, which serve as net exporters of labor to other farms. The production process is extremely labor intensive, as labor accounts for more than 90% of production costs. The returns to labor are less than half of the returns to labor on the larger peasant farms. Nevertheless, the net profitability of family labor even on the smallest farms is $2.25, which is twice as much as the average rate for wage labor.

Productivity measured as return to labor is low, but as a return to capital is very high. However, the bulk of production (more than 80%) is in basic grains. These are good subsistence crops but very poor producers of cash exchange, primarily because of low market prices. A very low proportion of crop production from these farms is marketed, because of the constraint imposed by the need to insure family subsistence.

4.1.2 Small Farms (3-5 hectares)

These farms share some of the constraints of the smallest farms and some of the larger farms, thus forming an intermediate category. The amount of land is not a serious constraint as on the smallest farm. Tenure is not a constraint at all. Access to credit as a source of working capital is a serious constraint, as is indebtedness. These farms borrow at a rate of 15% of gross worth, and the ratio of indebtedness to borrowing is 8%, which is the highest for all peasant farms.

The level of indebtedness is probably caused primarily by the reliance on basic grains as a production crop and as the source of cash income, as they produce more basic grains than is needed for subsistence.

Family labor is sufficient to meet the normal demands of farming; and off-farm labor accounts for one-third of family income, rather than two-thirds as on the smallest farms. While wage labor is employed at times of peak demand, this does not represent a real constraint since the cost of wage labor is much lower than returns to labor. Returns to labor are still less than half of the returns to labor on larger farms. This, again, is a function of the labor intensiveness of the production process and the relatively small role that improved technology plays vis-a-vis the larger farms.

Marketing mechanisms and the price structure of basic grains are a constraint to these farms. Volume of potential marketing as a

percentage of total farm production, is not a constraint on these and larger farms as it is on the smallest farms

4.3 Medium-Small and Medium-Large Peasant Farms (5-35 hectares)

The availability of land is not a constraint to this potential target group. On the contrary, the constraint is a lack of resources, both capital and labor, to farm land that is owned by the farmer. A sizable proportion of land on these farms is unutilized due to lack of resources.

Labor availability is a serious constraint to the larger farms, especially at peak harvest times. The ratio of family labor to hectare cultivated is 2.5:1 on the smallest farms and only 0.6:1 on the medium-large farms.

Lack of access to credit is a constraint, though not as serious as on the smaller farms. About one quarter of these farms obtain credit Those that do obtain credit, obtain a sufficient amount to provide working capital for production purposes. However, indebtedness is a serious problem on medium-small farms and not on medium-large farms. This again is related to the lower productivity of the medium-small farms, whose return to labor is only two-thirds of that on the medium-large farms.

Crop mix on these farms is sufficiently diverse so as not to represent a constraint. Basic grains account for only half of the total value of crop production, and the volume of marketing on these farms is in other annual and permanent crops.

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ANNEX L

DESCRIPTION OF PRINCIPAL FARMER TRAINING PROGRAMS

DESCRIPTION OF PRINCIPLE FARMER TRAINING PROGRAMS

MINISTRY OF NATURAL RESOURCES: DEPARTMENT OF HUMAN RESOURCES

The Ministry of Natural Resources is organized in eight departments: Human Resources Development, Agricultural Extension, Use and Management of Water, Use and Management of Soil, Animal Health and Production, Plant Health and Production, Hydrology, and Agricultural Research. The tasks which might be defined as educational are carried out by the first two departments mentioned.

Type of Activity:

The Department of Human Resources of the Ministry of Natural Resources essentially takes care of the training of its own personnel through formal and non-formal programs. For the year 1976, the Department has determined the following goals for each of its two principal programs: 1/

A. Non-Formal Education

1) To establish the training. Units of the Ministry of Natural Resources as a part of this coordination.

2) To form the training teams for the three Agricultural Training Centers.

3) To train in the areas of Social Promotion and Technical Fulfillment, 150 agricultural extensionists and 16 development promoters.

4) To organize the regional coordination for Human Resources Development in the 7 Regional Directorates.

5) To begin the social training and technical formation of 1,928 voluntary promoters.

6) To increase the existence of institutions in the country offering training facilities, in order that they might be used in the implementation of the Program.

1/ Ministry of Natural Resources, Coordination of the Program for Human Resources: 1976 Operating Plan, Tegucigalpa, D. C., 1976, p. 4-5.

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B. Formal Education (summary)

1) National School of Agriculture

a. To continue the social training and technical fulfillment of the School's Technical and Administrative staff.

b. To graduate 32 "Bachilleres" in the agricultural sciences.

2) Scholarship Program:

a. To determine the professionalization needs of the Ministry staff so that they may be programmed.

The most outstanding activity which the Department of Human Resources Development is planning to undertake, is without a doubt, the social training and technical formation of volunteer promoters. During the next five years, 3,000 volunteers are expected to be trained. This activity was designed "...in consideration that the present number of extensionists is limited and that communication among human beings, is more spontaneous among members of the same socio-economic group, (and for this reason) it is necessary to recur to an action whose multiplier effect will satisfy both the qualitative and quantitative aspects of the demands of the beneficiaries. Thus, the response to the expectations of this program is the formation of native Volunteer Promoters, of both sexes, at the community level, provided that their training be supplemented with an adequate follow-up of their community work as well as with a true material and moral support of their efforts." 2/

Six criteria have been determined for the selection of voluntary promoters: 3/

1) A minimum of a third grade education or equivalent.

2) Males between 20 and 35 years of age and females between 18 and 30 years of age.

3) Preferably married.

4) Must live and work in the community.

5) Must demonstrate the following leadership characteristics:

- Be accepted in the community
- Maintain good relationships
- Have communication skills
- Demonstrate spirit of service

6) Must show interest and ability in the technical area in which he (or she) will be trained.

2/ Ibid, p.6.
3/ Ibid, p.10.

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Target Population:

As pointed out in the description of goals, a total of 166 agricultural extension employees and 1,928 volunteer promoters are expected to be trained in 1976. Of the total number of volunteer promoters 1,200 will be men, 228 will be men and 500 youths of both sexes. The training for all will be in Social Promotion, Organization and Training and in Health and Nutrition.

Location of Activities:

The Department will have three of its own training centers by the end of the construction stage: in Catacamas, La Esperanza and Choluteca. It also uses facilities of the Ministry of Natural Resources throughout the country In addition, an inventory has been taken of national and private centers in the country available for training purposes. Eleven centers are mentioned throughout the country.4/

Human Resources:

The Department has 65 employees stationed in four areas of the country: The Central Office in Tegucigalpa, the Training Center in La Esperanza, the Training Center at La Lujosa in Choluteca, the Training Center in Catacamas and the National School of Agriculture in Catacamas.

Of the total number of employees, eight have technical and administrative functions, one is a training technician, three are rural development promoters, 12 are instructors at the ENA, 12 are assistants and 29 carry out lesser functions (22 work at the ENA).

The Director has Masters and Licenciado Degrees, his assistant also has a Licenciado Degree and the Training Officer is a social worker. The other administrative officers have degrees as Agronomist, "Bachilleres" in agricultural sciences and Peritos Agrícolas.

Installations, Materials and Equipment:

The Department is currently carrying out the construction stage of three centers financed by the World Bank. Meanwhile, in other areas, Ministry and other facilities are used to give the courses. In Juticalpa, a course in progress was observed at the Community Center of the National Social Welfare Board. It is felt that once the construction of the centers has been finished, they can be endowed with all the materials and equipment necessary.

Mobilization:

The Ministry has available a sufficient number of vehicles for the mobilization of its personnel. The Directors of the Training Centers also have vehicles as does the Administrative Management of the Department.

Funds has been budgeted to pay for transportation and room and board for the voluntary promoters during their training.

4/ Ibid, Annex 2.

Budget:

An amount totalling L.389,000.00 has been budgeted for the training of extensionists and volunteer promoters. AID will contribute L.80,000 of this total.

Means of Delivery:

All training will be carried out at fixed centers. It is hoped that land will be available for demonstrations and practical exercises. Extensionists, once trained, will served as instructors in the courses for volunteer promoters.

Relations With Other Institutions:

With respect to the Non-formal Program, there exists very little relationship between the Department of Human Resource Development and other national or private institutions. Only a limited degree of collaboration is observed on a regional level especially due to the fact that the centers are not yet finished, and training must necessarily be carried out elsewhere (such as in the example of the National Social Welfare Board mentioned above).

NATIONAL AGRARIAN INSTITUTE (INA): CAMPESINO PROMOTION PROGRAM

One of the main objectives of agrarian reform in Honduras is the formation of campesino settlements: agricultural enterprises established on land rented from the government by groups of campesinos who form groups under the protection of INA. The object is to promote the cooperative movement through the massive participation of the campesinos in productive associations. Eventually, titles of ownership are issued to the cooperatives.

In January, 1975 a total of 23,627 families had occupied a total of 108,946 manzanas of land in various regions of the country.

In 1975, the Department of Campesino Promotion of INA provided attention to 757 production base groups or units. These groups of campesinos are generally affiliated with three campesino organizations in the country: ANACH (334 groups representing 44% of the total), UNC (199 groups or 26%) and FECORAH (42 groups representing 6%). The remaining 182 groups or 24% do not belong to any campesino organizations.

Types of Activities:

The Campesino Promotion Program is oriented toward the teaching of organization, administration and cooperativism among the campesinos who received land. Moreover, the work of the promoters begins before the

delivery of the land: they investigate idle land suitable for agrarian reform and survey, identify and classify possible beneficiaries. Once the asentamientos have been established, the promoters maintain data files on the use of the land and on the personal data of the beneficiaries. They also carry out surveys on school age children in order to petition for schools.

The promoters organize a variety of activities for providing training to the new campesino in the asentamientos. They deal with topics such as:

a. How to organize and operate a cooperative;
b. Agrarian reform (what it is, what it does, how and why);
c. Social motivation;
d. How to utilize credit;
e. Agricultural aspects;
f. The preparation of cooperative administrators and secretaries, etc.

Activity planning in the asentamientos is done weekly. Communication is seen as the necessary response to an immediate need. As a result, promoters do not follow a predetermined pattern of activities, although the topics on organization and administration are presented sequentially.

If a need is detected to solve a technical problem with respect to a particular crop, the promoter takes it upon himself to seek out the collaboration of an agronomist from INA or the Ministry of Natural Resources. Likewise, the promoters seek out the collaboration of other government, autonomous and private institutions to help solve certain needs which arise.

Target Population:

In 1975, the Campesino Promotion Program attended to 11,603 campesinos, almost all men between 16 and 44 years of age. This figure reflects the number of persons who received the benefits of training courses:

Number	Courses	Beneficiaries
48	Laboratories	2,439
55	Cooperativism	1,877
68	Associative Enterprises	2,054
89	Organization	2,657
20	Technical Administration	528
25	Agricultural Techniques	807
6	Social Motivation	1,241
311		11,603

Location of Activities:

INA's headquarters are located in Tegucigalpa. The Campesino Promotion offices are located in a house across the street from headquarters.

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In eight locations throughout the country, INA operates regional offices: San Pedro Sula, Santa Rosa de Copán, La Ceiba, Comayagua, Juticalpa, Danlí, Choluteca and Tocoa in the Bajo Aguán.

Human Resources:

In May 1976, the Campesino Promotion Program at INA had a total of 64 officers: 2 administrators, 3 national supervisors, 7 regional supervisors, 51 promoters and 1 auxiliary.*

Of this total, excluding the auxiliary, 51 are grade school teachers, 10 are peritos and 3 are social workers. The director of the program is a teacher and the assistant director is a social worker.

INA has provided its employees with a variety of training and improvement courses through its own training service, PROCCARA.

Since early this year, INA has been undergoing an internal reformation with respect to its staff. Many employees have been dismissed and it is hoped that by the end of the year, the Campesino Promotion Program will be reinforced by the addition of a substantial number of new promoters. In all of the regional offices mention is made of the lack of promoters to deal with the increasing demands of the agrarian reform beneficiaries.

Installations, Materials and Equipment:

The Campesino Promotion Program has adequate offices, both centrally and regionally. It is also endowed with the materials and equipment needed to carry out its tasks.

Mobilization:

In order that promoters may move about with greater ease - to save time and thus be able to travel to more places and attend to a greater number of people - INA has provided them with motorcycles. The promoter acquires the motorcycle by means of a monthly deduction of L.100.00 from his salary. On the other hand, INA provides them with L.87.00 monthly for travel expenses. In this way, the promoter acquires a vehicle to provide services for INA.

The regional supervisors have vehicles available to them at the INA regional offices.

Budget:

For the current year, the Campesino Promotion Program has a budget of Lps. 1,197,868.00. Of this total, Lps. 591,122.00 is earmarked for the payment of salaries, Lps. 522,875.00 for administrative expenses (per diem, fuel, rent, stationery, etc.) and Lps. 83,871.00 for material and equipment.

* Secretarial service at INA is centralized in a pool, both in the central and regional offices.

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The regional supervisor has a monthly salary of Lps. 602.00, promoters with a diploma as a Technician in Rural Development (a three month course given by PROCCARA), earn Lps. 525.00 and the remaining promoters earn Lps. 420.00.

Means of Delivery

As previously mentioned, the Campesino Promotion Program has as its main purpose helping the campesino to organize himself, learn to manage and put into production the land which is given to him by INA. It was pointed out that although efforts are made to present the topics of organization, administration and cooperativism sequentially, the promoter must respond to the immediate needs of the campesino groups. Talks, demonstrations and short courses are organized using the technical services of INA and other institutions.

The promoter is a very mobile individual: he is assigned an average of three or four asentamientos which he visits daily. The degree of rapport between the promoter and the campesino in the asentamientos is fairly high and represents an important factor in the development of mutual trust, an aspect essential for maintaining good communication.

Relations with Other Institutions:

At the national level, the Campesino Promotion Program has no formal relationships with other institutions. At the regional level, the relationship varies from region to region. In all regions, the institution with which it relates most is Natural Resources, whose extensionists collaborate regularly with the promotion program by providing talks, demonstrations and short courses, especially with respect to the growing of basic grains.

There is a close coordination between INA and the Banco Nacional de Fomento, which provides funds for the credit program. Bank technicians work closely with credit officers and promoters in the approval and supervision of loans.

There is also collaboration between the Campesino Promotion Program, the National Social Welfare Board and the Ministry of Health. These institutions provide materials and equipment to improve the environment of the campesino living on the asentamiento (see the sections on Health/Rural Penetration and on National Social Welfare Board).

In two places, INA grants office space for promoters of adult education/development round tables.

In this way literacy courses are organized for campesinos on the asentamientos. It is worth mentioning that one of the most critical problems in the Campesino Promotion Program, is the high degree of illiteracy among campesinos: it is estimated that it reaches between 80 to 90% of the beneficiaries in many cases.

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1. General observations of the Program of Human Resources (PRH)

The present Program of Human Resources of the SRN, has evolved out of the Department of Agricultural Education within DESARRURAL and DESAGRO, a department primarily concerned with the orientation of new extensionists and the in-service training of extensionists. (The scholarship program of the agricultural sector was also handled by this department). With the reorganization of the MNR in 1975, this department became a program under the National Office of Agricultural Operations (Dirección General de Operaciones Agrícolas). Since 1975, the PRH has assumed the direction of the campesino training program which had been in the planning stages since 1973.

At present, the PRH administers the formal and informal educational activities of the MNR at four levels:

a) The training of campesinos in short courses of social motivation and technical agricultural production at two levels:

-- courses in the local community for participants in agricultural enterprises of the reformed sector, in rural women's clubs, and 4-S clubs;

-- courses for a selection of volunteer agricultural promoters and other leaders in three training centers (Choluteca, La Esperanza, and Olancho).

b) In-service training for employees of the MNR--especially the agricultural extensionists--and employees of other institutions of the public sector in fields related to the MNR.

c) The professional education of agronomists in the National Agricultural School (ENA) at Catacamas.

d) Formation of specialists in the agricultural sciences at the university level through the scholarship program, both in the country and abroad.

The central focus of the PRH--occupying some 80 percent of personnel and resources--is the training of campesinos at the regional level. Throughout 1977, the PRH has been redefining and reorganizing its program in an attempt to develop a plan which will integrate the education of the campesino, extensionists, and postgraduate specialists in an overall strategy of human resources development, and which will be closely coordinated with current reorganization with the SRN, such as the reorganization in the National Program of Agricultural Research.

2. The Basic Educational Strategy of the PRH

There is a widespread concern voiced by administrators and field personnel of the SRN that in the last four or five years the agricultural extension program and other programs of the SRN have focused too exclusively on production for its own sake and have lost the original orientation of education of the farmer and the farm family. It is also maintained, that the professional ethics of the extensionist and the morale of the extension program has declined. Certainly, as is noted in the analysis of the extension program, the training program for new extensionists as they enter the SRN which was maintained under DESARRURAL, has deteriorated since the reorganization and regionalization of the SRN.

The present approach to the formation of human resources at all levels of personnel--from the campesino volunteer promoter to the postgraduate student--is based on a concept of agricultural education which fosters the increasing capacity of campesino groups to make decisions regarding the adoption of agricultural technology on the basis of their own analysis and experimentation, not simply accepting passively the production plans which the extensionist or other agent of exchange proposes. By stressing not simply transfer of technology but the education of the campesino to actively experiment, look for ways to reduce risk and to be aware of innovations through the mass media, it is expected that the campesino will gradually become able to continually improve his agriculture with progressively less dependence on the extensionist. The PRH proposes to develop the innovative capacity of campesino groups in developing production systems, which are continually more efficient and better adapted to the circumstances of a particular area. This strategy will be closely related to the farm-centered approach currently being adopted by the National Research Program of the SRN.

The courses at the community level, will attempt to introduce a methodology for independent analysis of agricultural problems and to develop an internal leadership for experimentation and adoption of agricultural technology. This leadership selected by the group, will then be trained in the regional centers as "volunteer agricultural promoters", so that the group will have within it, its own technical capacity and a direct link to outside resources. The focus of the in-service training of the extensionists, is a methodology of training campesinos in technical decision-making-not simply applying recipes. Extension is defined as a process of human and group development, not development of plants and animals. The current reformulation of the curriculum of ENA in Catacamas also places greater emphasis on this extension methodology, on a greater knowledge of the social reality of Honduras, and on a professional ethics of the agronomist.

3. The Training Program at the Campesino Level

The central focus of the campesino training program, has been the

formation of volunteer agricultural promoters within the groups of the reformed sector as a type of agricultural paraprofessional. Originally, the idea was that one or two local leaders would be selected by the extensionist as a kind of assistant to the extensionist. The training has consisted mainly of a week-long course of social motivation.

The course in "social motivation for more effective achievement of goals," was developed by the PRH in 1976 and 1977 as the basic training instrument for the personnel of SRN, for the agricultural promoters, and for other rural leaders. The course emphasizes group dynamics and has as objectives bringing individuals to a higher level of commitment to individual excellence in work, greater ability to coordinate in groups, and commitment to achieving institutional goals. This course has been rated as especially successful in developing a higher degree of professional ethics and personal responsibility among SRN employees and, among campesino leaders, greater commitment toward tasks of the group.

The development of agricultural promoters has received greatest emphasis in the southern region, but even there it is still at an experimental stage. The regional director of the PRH team in Choluteca, is optimistic about the contribution of the volunteer promoters and has the backing of the regional director. However, only a few extensionists have really responded to the idea, in great part for reasons of inertia since it represents a change in the structure and strategy of extension. The regional team of the PRH in Choluteca prefers to work closely with a few interested extensionists, developing the method and using these agencies as demonstration zones.

In the Yusguare agency of the Choluteca region where the extensionist has been very interested and the team has worked intensively to introduce agricultural promoters, there are approximately 8 groups where promoters are active. The 15 or so promoters, meet with the extensionist of this agency every fifteen days, and they are presently intended to serve as a link between the extensionist and the group in the technology transfer process. Limited conversations with some of these promoters, indicate considerable motivation, but the promoters do not appear to be clear on their functions and it was not evident that they were playing a significant role in technology transfer or other planning functions apart from their existing leadership in the asentamientos. A major problem appears to be that the promoters have been selected by the extensionists, and the groups have not integrated the role of "agricultural promoter" into their leadership structure, in the way they accept the president or treasurer of a board of officers.

The team in Choluteca, is planning to expand the agricultural promoters to two or three more agencies--training up to 100 or more promoters in 1978. Efforts in La Esperanza and Olancho, (where the response to the promoters has not been too good, even on the part of the PRH team) to introduce agricultural promoters will also be increased.

However, the central office staff and the regional teams of the PRH are rethinking the concept of the agricultural promoters, in line with the new strategy of agricultural education discussed above. Instead of having the extensionist pick the promoter, the process will begin with courses in 9 selected asentamientos in each of three regions: (South, Comayagua, and Olancho). The course will introduce very concrete tasks:

1) Decision-making regarding investment plans, introduction of new technology, use of credit, and goals of production;

2) The identification of areas where the group needs more information and assistance (the request for assistance comes from the initiative of the group);

3) The selection by the group of 3 to 5 candidates for relatively technical courses in the crops which are of interest to the group according to the production plans discussed in the course. These candidates will serve as a team of agricultural promoters in the asentamiento.

The objective of this course is to make the introduction of agricultural technology the result of discussions and initiative from the group. The decision of whether to have agricultural promoters, who will be the candidates for courses, what their functions and authority in the group will be, and what courses they are to receive is to be the result of the group decison-making.

Ideally, in the planning of the PRH, the promoters would be recognized "officers" in the group with the following functions:

a) An information source to the group in the particular crop in which the promoter has been trained, a link with the extensionist and with the specialist in the crop in the regional experimentation station;

b) An organizer of the process of trials and experimentation within the group, in order to test new methods and greater cost-efficiency in particular crops before adopting these methods on a larger scale; the promoter might be in charge of simple demonstration plots which would serve as the basis of decisions by the group;

c) A special consultant to the extensionists and to the regional experimentation station providing feedback on field results in new varieties and methods introduced. Insofar as the farm-centered agricultural research methodology is introduced, the agricultural promoter could be a special support in this.

d) In some cases, one of the promoters might serve as the basis for introducing other organizations, such as the campesino women's groups and the 4-S clubs (a current plan of the Choluteca team of the PRH).

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Whatever might be planned, the specific functions which the volunteer promoters will perform in a given community as well as the crop specialization and training, will be defined by the members of the campesino enterprise. In general, the great advantage of this approach of the PRH, is that it provides a basis for initiating the process of agricultural development in the group. This reverses a tendency of extensionists--and the administrators and planners in the SRN--to impose investment plans and production goals established at national and regional levels on a local group with often negative results, because of the failure levels on a local group to understand and take into account the risks involved. The present method would encourage farmers to intelligently analyze the technological changes necessary to achieve production goals, the changes in their own rhythm of work, and allow greater responsibility for credit. Although, in the short run, this will imply a specific effort on the part of the extensionist (working with and training promoters), in the long run it will mean that the group will be more independent, and the promoters will serve as multipliers of the extensionist.

In addition to the social motivation course, the PRH has coordinated courses in the production of specific crops, usually in conjunction with the introduction of a special project in a region. The coordination of the PRH consists in obtaining teaching staff, attending to lodging, and other administrative details. However, in the coming year, the local campesino enterprises would be involved in deciding their involvement in specific projects and will be selecting the candidates for volunteer promoters, assisting in the introduction of a special production project within the community.

For the current year, 1978, the PRH plans the formation of 550 campesinos as volunteer promoters in the regional centers; each promoter will have the opportunity of six courses of a week in the regional center during the year. In addition 2,206 other campesinos involved in special projects, will have an opportunity to participate in technical courses in the centers. Each regional center will offer the following number of courses of a week in six different areas: farm management (administración rural), 8 courses; livestock production, 9 courses; crop production, 12 courses; agro-industry, 8 courses; family life, 5 courses; agricultural mechanization, 3 courses. Each regional team will also give the basic organizational course in nine communities of each region.

4. The Use of Mass Media

The PRH is also responsible for the daily radio programs which are broadcast through the regional radio stations. In the southern region it is a half-hour program. The PRH determines the programming and obtains the expositors from among the regional staff of SRN. The program tries to be timely--explaining the means of controlling a plant disease or attack of insects when this breaks out in the region or a particular aspect of production during the crop cycle. Although PREDIA is providing some technical assistance, the SRN lacks specialized personnel and equipment for this and the programming as well as the production is relatively

unimaginative. For example, the regional office in Choluteca does not have a portable recording set for interviewing campesinos regarding concrete experiences--a technique which has proved effective in many such programs. At times, it is not possible to meet the daily schedule so that the program is intermittent. It is difficult to build up a regular radio audience, when programs are not regular and the programming is monotonous and without focus. There is little idea of what the audience is and what the possible impact of the radio program might be.

Observations on INA/PROCCARA Farmer Training

The activities of resettlement and organizational support for the creation of the reformed sector within the agricultural sector is largely the responsibility of INA's Dept. of Campesino Organization and Training (Capacitación) with some activity of DIFOCOOP and INFOP in this area. INA has recently joined its Departments of Promotion and Training (PROCCARA) to form one coordinated activity between promotion, training courses in the community, and the three PROCCARA centers. INA presently has about 90 promoters for the 1,088 listed asentamientos and plans to add 30 more promoters this year to supervise an expected additional 384 groups. However, promoters in the special projects such as the Bajo Aguán may have only four or five groups while promoters in the Sector of Consolidation may be expected to give assistance to as many as 15 or 20 groups and the groups in the Sector of "The Rest" (at least one-third of the groups) receive no supervision at all.

There exists no comprehensive, up-to-date field studies describing accurately what percentage of the 1,088 groups have serious organizational and administrative problems. However, estimates indicate that in approximately 70 per cent of the groups, there are administrative deficiencies which seriously hamper effective productive planning and effective management of finances--a situation which is indicated in the rate of delinquency in loans. The beneficiaries from a small-farm background have the greatest difficulty in establishing a collective enterprise, while those with experience as agricultural laborers in large-scale agribusiness (the fruit companies) are effective in establishing a modern production enterprise (Guanchías, Ltd. and Isletas are examples).

As far as the field studies of this assessment could detect, the promoters are currently making little or no effective contribution to organizational support, except perhaps in the area of concentrated rural development. When promoters do visit the groups (many of the groups interviewed rarely if ever see the promoters), these visits are hurried and superficial. The courses given in the community by promoters, have been vague and unrelated to the real problems of the group--or at least not implemented by the group. The promoters do seem to have been more effective up until a year ago, but with the recent change of director of INA (and the change of the director of Promotion), there has been massive dismissals of personnel, and many new, inexperienced personnel or experienced personnel advanced to supervisory positions. Consequently, there are many administrative deficiencies.

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Nearly 95 per cent of the promoters are recent secondary school graduates trained for primary school teaching, and have little or no previous experience with the campesino sector. They receive superficial initial training and the in-service training has been very deficient. By their own admission in field interviews, promoters claim that their training is weakest, in precisely the area where their services are most demanded--the area of organizational and administrative support of campesino groups.

The promotional methodology is deficient in that it does not encourage promoters to make a careful in-depth analysis of the social background of the groups, or to spend much time with the group in order to establish an understanding of the problems and an identification with the members of the group. Promoters are expected to be involved in virtually every aspect of INA's work--from land affectation to helping obtain credit and technical assistance-- and it is difficult to establish priorities for supervision of groups in the administrative problems. Often, too, promoters are called away to handle emergencies so that planning a work program is difficult. Administrators complain that they often do not know where the promoters are or what they are doing.

The new administration of Promotion and Training gives promise of greater efficiency. This year, promoters are being asked to fill out a daily sheet describing exactly what they do each day, and they are being asked to live in the area of the group, so that less time is wasted traveling back and forth from the regional city to the area of their groups.

With the recent integration of the Dept. of Promotion and PROCCARA, the Division of Training has three sections: Social Participation, giving courses primarily promoting basic organization and solidarity, cooperativism, and improved health and nutrition; Technical Administration, giving courses in systems of financial control, accounting, administration of agricultural enterprises, and marketing; and Technical Production, providing a series of courses in various types of crop production. PROCCARA has developed two basic courses in administration of campesino enterprises: a ten-day introductory course in administration for presidents, and in accounting for treasurers and a five-month course for managers of enterprises (usually the president). The ten-day course, spends much of the time on arithmetic and would need a great deal of follow-up of the promoters to insure that the system is implemented--something which is presently not done. The five-month course was much too long for campesinos in residence, and has been cut back to a month. In general, the PROCCARA staff for giving courses in administration and accounting has been weak both in capacity and in numbers. Last year, there was a team of two persons, peritos mercantiles, for the critical ten-day course and one of these was dismissed because of lack of teaching capacity. This year, two teams of two are expected to be mounted, but PROCCARA plans to rely on contracted support from INFOP and DIFOCOOP for many of its more technical courses. A new FAO mission, will be giving technical assistance to the training department. In the last year, PROCCARA has had problems of unstable administration and many of the courses programmed were not given; even the Center "David Funes" near Guanchias was not fully utilized.

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Of the 1,088 campesino enterprises, 231 have legal title as cooperatives and there is presently a rapid increase in the number of asentamientos which are seeking legal title (to facilitate loans from the BNF) as cooperatives are adopting the cooperative form of administration. The need for training campesinos in the administration of their enterprises through the structure will be necessary in the coming years.

1. Dirección de Fomento Cooperativo (DIFOCOOP)

This is an autonomous organization of the Government reporting to the Minister of Economy and Commerce. Its responsibilities are essentially the development of cooperatives (including assistance in their formation and in the subsequent conduct of their educational and operational program), the legalization of cooperatives, auditing and inspection of cooperatives, and general administration of the cooperative law.

The total budget of the office for 1977, including L.412,900 of foreign donations, is L.1,893,100 and the total staff (including some regional offices) is 112, including six contract employees.

The growth in the number of legalized cooperatives and federations from only a handful in 1960 to over 600 indicates it has been active in working with cooperatives to achieve legal personality. There have also been significant numbers of cooperative failures which have involved the office in a considerable amount of the unglamorous work of winding up their affairs.

With respect to cooperative development, DIFOCOOP has been endeavoring with 12 cooperative extensionists to cover the following cooperative fields: agriculture, livestock, forestry, fishing, small industry, commerce, transport and rural housing. In agriculture one of its labors over recent years has been to sustain the insolvent cooperative federation FECOAGROH (described above). While as indicated above it has had plans and hopes to revitalize FECOAGROH, it has not had resources to do more than provide limited help to the remaining federation members.

In terms of concrete results, DIFOCOOP's greatest success in recent years has been in the organization of forestry cooperatives. There are now some 114 forestry cooperatives, of which 26 have legal personality. DIFOCOOP is currently endeavoring to consolidate many of the existing groups into larger regional cooperatives. On these cooperatives DIFOCOOP works in close association with Corporación Hondureña de Desarrollo Forestal (COHDEFOR). In view of DIFOCOOP's limited resources, COHDEFOR has provided it with L.100,000 in supplemental funds.

DIFOCOOP has recently been working with 20 ANACH groups (consisting of 400 or more campesinos) in Jamastrán that wish to form a regional cooperative organization. The work has consisted of developing a plan of organization and operation that would include credit and technical assistance for farm development and production as well as marketing and

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storage programs and facilities, a machinery pool, accounting center, and other facilities. If such a plan could be financed and realized, DIFOCOOP hopes that it would provide a pattern for organization of regional agrarian reform cooperatives throughout the country.

Cooperatives organized under the cooperative law are subject to periodic inspection by DIFOCOOP. This inspection takes two forms. The first is a general inspection to determine whether the cooperative as a whole and its various organizational entities and officers are functioning effectively, whether it is developing its program, whether it maintains current books of account, to what extent it maintains an educational program, etc. The second is a detailed auditing of the books of the cooperative.

DIFOCOOP's División de Inspección y Auditoría schedules approximately 100 inspections and 100 audits per year, with a staff of four inspectors and thirteen auditors. In practice it accomplishes more, so that it may be able to reach each cooperative and cooperative federation about every third year. The cooperatives to be inspected or audited are chosen in part on a rotation basis. In addition some are selected because they have a particular need or desire to be audited--for example, if they have a financial or management plan or wish to negotiate for credit.

Some cooperatives are not audited because they have failed to maintain current books or have never really established them. This is usually the situation with respect to agrarian reform cooperatives.

In the course of its work over the years, DIFOCOOP has been able to identify a number of promising possibilities for development of cooperative agricultural activities that would benefit small farmers. These include such projects as vegetable marketing, construction of storage facilities, production of fibers (henequen, junco and ramio) and their processing into finished products, a cacao processing facility, a resin plant, and honey production and marketing. While DIFOCOOP has been able to achieve some construction results on some of these projects, it lacks the capital or access to capital necessary either for export feasibility studies or for carrying out adequately financed developments.

The Dept. of Management Formation of the Division of Education of DIFOCOOP has designed, with the technical support of Agricultural Cooperative Development International, two five-day courses, for treasurers of agricultural enterprises in accounting and for presidents in investment plans. In general, the courses present very practical systems and drill the participants in these so that the material should be easily applicable in the concrete circumstances of the campesino enterprise. Four to six weeks after the course, the team of ten which forms this department (five in the area of accounting and five in management) spend about a month visiting the groups whose representatives have received the course (a team of three visits each group for about a day or two) and helping the course participants in the application of systems taught in the course. In 1977 DIFOCOOP gave eight courses to 574 treasurers and

and presidents representing approximately 250 campesino enterprises (not necessarily cooperatives).

DIFOCOOP is also establishing a Dept. of Cooperative Education with a team of ten for giving courses specifically in cooperativism and emphasizing agricultural cooperatives.

In general, one of the most urgent needs of the campesino agricultural enterprise of the reformed sector is greater ability in administering the work force of a collective enterprise, planning of production and investment, and proper financial controls. But in precisely this area of organizational support the training and the supervision is among the weakest of the agricultural sector. With reason, organizational solidarity and administrative problems are pointed out as the cause of many other problems in agricultural enterprises such as delinquency in loans.

NATIONAL INSTITUTE FOR MANPOWER DEVELOPMENT (INFOP)

The National Institution for Manpower Development was created in 1972 to contribute to the improvement of national productivity and socioeconomic development through the establishment of a regional training system for all sectors of the economy and all levels of employment.

During its first two years, INFOP concerned itself with the preparation of its own personnel. If offered 26 courses for 259 participants, 200 of which were future instructors or administrative and technical staff of the institution.

The Board of Directors of INFOP determines policy for the institution. It is made up of the Ministers of Labor, Education, Treasrury and the Executive Secretary of CONSUPLANE. In addition, two representatives of labor and two representatives of the private sector also participate. The Executive Director of INFOP is a non-voting member of the Board.

Types of Activities:

INFOP's activities are organized and implemented through several departments: Administration and Finance, Personnel, Planning and Research, Manpower Development, and the Northern Regional Office.

Three types of training are offered: complementary, qualifying and apprenticeship. Complementary training refers to the perfecting of skills through short courses for currently employed workers. Qualifying training is in-service training given to new workers for periods of between 300 and 600 hours.

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Through apprenticeship courses, qualified workers are trained. This type of training lasts approximately 3 years and participants must have a work contract with a firm stipulating salary, level and the commitment of the firm during the period of apprenticeship. As of the present moment, INFOP has not yet begun any apprenticeship programs.

For the year 1976, INFOP has programmed 355 courses for an average of 15 to 20 participants each. Of this total, 294 courses will be of the complementary type, 15 of the qualifying type, 1 of the apprenticeship type and 45 will be of the "previous level" type. (See Table below).

The Manpower Development Section of INFOP maintains a close relationship with industrial, commercial and agricultural enterprises. It investigates the labor training needs and determines the courses to be organized.

For courses offered in INFOP centers, the institution takes charge of promotion by means of newspaper ads and visits to firms.

Target Population:

In 1975, 7,545 persons passed INFOP courses: 2,948 from the industrial sector, 2,200 from the commercial sector and 2,397 from the agricultural sector. Of the 7,545 who passed the courses, 6,260 were men and 1,285 were women. Some 90% of the beneficiaries were between the ages of 16 and 45.

Location of Activities:

The majority of INFOP's activities are concentrated in Tegucigalpa and San Pedro Sula. The Agricultural Sector operates the mobile centers which provide services to groups of campesinos in various parts of the country, principally the Bajo Aguán, Olancho (Juticalpa-Catacamas), San Marcos de Ocotepeque and La Paz.

The central offices and principal training centers are in Tegucigalpa. INFOP opened a regional office in San Pedro Sula in 1974. In June of this year construction was begun on a training center in that city.

Human Resources:

In 1976, INFOP had a total of 184 functionaries: 13 executives, 36 auxiliaries, 28 service employees and 107 technicians. Of the total number of functionaries, 67 are instructors. According to future plans, the number of instructors will increase annually by an average of 32 instructors per year according to the budgetary increase. From the beginning it was deemed necessary to set up the administrative apparatus of the institution.

TABLE No. 1

ACTIVITIES PROGRAMMED FOR THE RURAL MOBILE CENTER DURING 1976

Number of Courses	Category	Number of Instructors	Cost	Number of Participant
69	Agricultural Practices	14	L. 210,000	1,163
4	Qualification in Agricultural Practices*	2	60,000	68
62	Stock Farming and Veterinary Practices	10	136,500	1,054
15	Chicken Farming	(1)+	23,000	255
11	Forestry Courses	3	21,500	187
14	Machinery Maintenance	3	58,000	238
1	Qualification in Machinery Maintenance*	(1)+	6,000	17
1	Vocational Training	(1)+	3,000	17
8	Carpentry and Construction	2	41,136	12
12	Farm Administration	2	23,000	204
197	T O T A L S:	36	L. 582,660	3,349

* The Qualifying Course in Agriculture lasts 5 months full-time; the Course in Machinery Maintenance lasts 13 weeks full-time.

\+ The figures in parentheses indicate that the instructors also teach other courses.

NOTE: An average of 17 participants per course is estimated.

SOURCE: INFOP Courses for 1976.

The agricultural sector has 3 supervisors and 30 instructors, all of which are peritos mercantiles. All of INFOP's instructors receive 300 hours of training before taking up their posts.

Most of the industrial sector instructors are peritos, although some are skilled workers whose educational background stops short of sixth grade.

At this time, July 1976, INFOP is undergoing a crisis in its top management. Almost all of the executive personnel have turned in their resignations. Most of the individuals in these positions have an education at the level of a Masters degree and a considerable number of years of experience which qualifies them to occupy positions and earn high salaries which INFOP is unable, or unwilling, to pay at this time.

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INFOP has the same problem at the instructor level, where the instructors, due to their high level of preparation, can demand much higher salaries in private enterprise.

Installations, Materials and Equipment:

INFOP has been careful to expand in accordance with the physical facilities, equipment, materials and personnel which it has available. In Tegucigalpa, it has a training center located in a converted warehouse. It uses the installations provided by private firms for courses given at the firms. The rural mobile centers taken advantage of the installations of various public and private institutions. Likewise, for courses given at private firms, it uses the firms' equipment and in the agricultural sector, it uses equipment provided by Natural Resources, INA and other entities.

Mobilization:

Three types of mobilization are used in order to provide service to participants. The latter come to the INFOP centers, the instructors go to the firms and the rural mobile centers go to campesino groups. INFOP has available the means to provide mobilization. All students participating in complementary training courses at the centers receive L. 0.30 for daily transportation. Participants in qualifying training courses receive L. 2.00 per session.

Budget:

All private enterprises with five employees or more and capital of L. 20,000 are under the obligation to assign to INFOP an amount equal to 1% of their payrolls. During 1974 and 1975, INFOP received 35 and 38% of its income from this source. For the period from 1976 through 1980, it is expected that 65% of its income will come from this payroll tax.

Source of income and projections for the 1976-1980 period are broken down as follows:

(000 of Lempiras)

Sources of Income	1974	1975	1976-1980
1% payroll tax	L. 2,891.2	L. 3,208.6	L. 16,530.2
Government transfers	452.0	425.0	2,125.0
Previous years surplus	2,189.5	4,061.1	245.3
Interest on investments	104.0	132.5	2,790.2
IBRD Loan	2,750.7	677.9	3,392.9

INFOP paid out L.1,236,504.00 in salaries in 1975. Instructors earned an average of L.500.00 monthly and supervisors an average of L.750.00. The rural mobile center instructors also receive travel expenses of L.9.00 per day and supervisors receive L.25.00 per day.

Means of Delivery:

The delivery system used for the agricultural programs consists of the rural mobile unit. Each unit has one perito agrónomo along with teaching and demonstration material. It moves from town to town in accordance with a predetermined program, "taking the classroom to the students."

Courses at private firms are carried out at the firms' installations. The instructor takes his material with him to the site of the course. The courses given at INFOP are done so using classroom space especially equipped with materials and equipment. One instructor is charged with giving the classes.

Other Activities:

INFOP, especially through its Northern Regional Center, has set up relationships with several labor unions. It currently offers complementary training courses for FESITRANH union leaders in management and administration. A course is also being offered at the level of the board of directors of ANACH on criteria for business administration.

Relationships with Other Institutions:

At the national level, INFOP has very few relationships with other public institutions. Its relationships are principally with private enterprises and some union or campesino associations who represent their potential beneficiaries.

At the course level, relationships exist with institutions such as the Ministry of Natural Resources and INA which provide equipment and transportation for the rural courses.

Observations on Farmer Training by INFOP

Since February, 1977 the Rural Promotion division of INFOP works through regional teams called "mobile units" working out of Tegucigalpa, San Pedro Sula, Juticalpa (Olancho), San Marcos de Ocotepeque, Bajo Aguán, and (in 1978) Marcala in the Dept. of La Paz. Each team has a supervisor (agronomist), an administrator (perito mercantil) and 8 to 12 agronomist instructors. These teams are termed "mobile units" because, in contrast with the industrial and commercial training in fixed classroom centers, the agronomists move out into the communities with the basic teaching equipment and teach three to six week courses in rural communities. With the inauguration of the mobile units in early 1977 (before, instructors worked out of Tegucigalpa), both the demand and the number of courses given has expanded rapidly; in the first 10 months of 1977, more courses were given and students taught than in all of the first three years of the Rural Formation division (See Table 2).

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Table 2: Number of Courses Given and Students Passed in Agricultural Training Courses by INFOP During 1977

Courses	Introductory		Elementary		Technical	
	Courses	Passed	Courses	Passed	Courses	Passed
Agriculture						
Cultivation of Maize					20	167
Cultivation of Beans					8	87
Cultivation of Rice					20	203
Cultivation of Sugar Cane					13	152
Cultivation of Home Gardens	24	283	25	308	55	676
Cultivation of Onions					2	24
Cultivation of Basic Grains	3	103	5	57	3	31
Seedbeds for Coffee					20	244
Pruning of Coffee Tree					7	92
Use of Agro-chemicals					2	15
Livestock						
Preventive veterinary					57	710
Breeding and Care of Pigs					9	106
Breeding of Rabbits					3	34
Laying Hens					6	88
Beekeeping			1	16	14	210
Selection, Preparation, and Exposition of Cattle					1	13
Agricultural Workshop					22	796
Forestry						
Resin Collection					6	74
Agricultural Mechanization						
Agricultural Mechanics	1	13	7	110	8	99
Electrical System of Tractors					1	22
TOTAL	28	399	38	491	277	3,843

Total courses: 343
Participant passed : 4,733

Source: División Formación Rural, INFOP

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Table 3: Number of Courses Given and Students Passed in Agricultural Training Courses by INFOP During 1977 According to Department

Department of Honduras	Introductory Courses	Introductory Passed	Elementary Courses	Elementary Passed	Technical Courses	Technical Passed
Atlántida	5	40			18	270
Colón	5	57	13	163	39	546
Comayagua	1	15	1	15	18	252
Copán	-	-	-	-	11	146
Cortés	4	52	4	54	17	252
Choluteca	-	-	-	-	10	246
El Paraíso	-	-	-	-	15	210
Francisco Morazán	3	45	3	37	17	265
Gracias a Dios	-	-	-	-	-	-
Intibucá	-	-	-	-	-	-
Islas de la Bahía	-	-	-	-	-	-
La Paz	3	60	5	44	-	-
Lempira	-	-	-	-	13	177
Ocotepeque	3	60	5	71	18	258
Olancho	2	33	4	58	42	498
Santa Bárbara	1	18	1	13	29	323
Valle	-	-	-	-	4	56
Yoro	1	19	2	36	26	344
Total	28	399	38	491	277	3,843

Source: División Formación Rural: INFOP

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INFOP also has one agricultural training center for youth in La Paz (a resident center using facilities loaned by the National Council for Social Welfare, JNBS) with technical and financial support from the German government and is preparing to open two other such centers for young campesinos: in Juticalpa using the buildings and land provided by the UNC and in Isletas, with possible assistance from the Austrian government. These centers are open in after work hours to adult classes.

The Rural Formation division of INFOP presently has a central office staff of director, assistant director, and secretary; 6 mobile team supervisors, 6 administrators, and 68 agronomist instructors (about 80 planned for 1979). The training program for new instructors is a carefully programmed 205 hours given over a period of approximately two months. Salaries of agronomist instructors in INFOP are higher than in other public institutions: L.685 base salary with L.11.00 subsistence for each day in the rural community for ENA graduates and L.815 and L.13.00 subsistence for CURLA graduates (an average total monthly salary of about L.850 and L.1,000 respectively). The total budget for the Rural Formation division in 1978 is L.1,154,822 and L.292,000 for the three resident training centers.

The Rural Formation division presently has a bank of 50 courses in areas of agricultural and forestry (See Table 4). Courses usually last a minimum of three weeks and a maximum of six weeks. Some courses are given at the petition of extensionists or of campesino organizations (INFOP has formal training agreements with ANACH and the UNC). An important feature of the INFOP method is the careful investigation of training needs and the planning of courses on the basis of visits of agronomist instructors to the communities in the area to which they are assigned within the region of a mobile team. In meetings with the leaders in asentamientos and in other groups, the priority training needs are established, the most opportune time of the year is chosen, and conditions for the courses are outlined--all a year or more in advance of the course. For example, each agronomist-instructor of INFOP has a complete day-by-day calendar of courses established for 1978. During the stay of the instructor in the community for a course, the need for further courses in the community or in nearby communities is investigated and plans made. The only condition for courses are a clear commitment on the part of 12 to 18 students per course and some interest in and capacity for implementing the practices taught in the courses.

At the time of the course the instructor with the necessary equipment is brought to the community by the supervisor. The instructor lives in the community (except for week ends) for the duration of the three to six week course, sharing the life of the community as much as possible. INFOP furnishes all materials for the course: blackboard; demonstration equipment and supplies such as sprayers, syringes for injections, insecticides; manuals, paper, etc. Since the course is given in the community, INFOP has no expenses for meals or lodging for the participants. During the month or

Table 4 : Bank of Course Offerings in the Area of Agriculture and Forestry Currently Available From INFOP (1978)

Name of Course	Level	No. of Hours Course Requires
Coffee		
Seedbeds for Coffee	Technical	40
Pruning of Coffee Trees	"	50
Coffee Seedlings	"	40
Fertilization of Coffee Trees	"	60
Diseases of Coffee Trees	"	60
Vegetables		
Vegetable raising (gardens)	Elementary	500
Cultivation of Garlic and Onions	Technical	60
Cultivation of Tomatoes	"	60
Basic Grains	Technical	300
Specific Crops		
Cultivation of Rice	Technical	60
Cultivation of Beans	"	60
Cultivation of Sorghum	"	60
Cultivation of Sugar Cane	"	60
Cultivation of Sesame	"	60
Cultivation of Maize	"	60
Cultivation of Potatoes	"	60
Cultivation of Tobacco	"	60
Sampling and Conservation of Soils	"	56
Forestry		
American System of Resin Collection	Technical	60
Sharpening of Saws	"	60
Planting and Care of Trees (Forestry)	"	60
Farm Administration		
Practices of Agricultural Administration for Asentamientos	"	60
Farm Record Keeping	"	60
Records and Production Control in Cattle Enterprises	"	60
Planning of Cattle Enterprises	"	60

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Bank of Course Offerings of INFOP (cont.)

Livestock Management		
Clinical Veterinary Diagnosis	Technical	65
Silage and Henification	"	60
Artificial Insemination in Bulls	"	100
Preventive Veterinary I and II	"	72
Basic Course in Beekeeping	"	68
Prevention and Control of Diseases in Cattle	"	41
Care of Bulls	"	60
Hand Milking	"	55
Breeding and Care of Milking Livestock	"	70
Breeding and Care of Livestock for Meat Production	"	60
Breeding and Care of Goats	"	60
Care of Chickens	"	60
Breeding and Care of Rabbits	"	60
Care of Laying Hens	"	60
Agricultural Machinery		
Preventive Maintenance for Farm Tractors	"	60
Maintenance of Agricultural Implements	"	60
Electrical Systems of Tractors	"	60
Operation of Farm Tractors	"	60
Operation of Tractors and Preparation of Soil	"	60
Carpentry		
Construction of Roofs	"	60
Construction of Doors and Windows	"	60
Construction of Wood Floors	"	66
Knowledge and Use of Carpentry Tools	"	60
Construction of Walls	"	70
Technical Drawing for Carpentry	"	65

Source: Division of Rural Formation, INFOP

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six weeks in the community, the instructor usually discusses with the campesinos a broad range of agricultural probelms beyond the immediate material of the course. Courses usually run a half day so that work of farmers is not completely interrupted and an attempt is made to program two courses at the same time, morning and afternoon, so that the instructor is fully occupied.

A second feature of the INFOP training courses is the careful programming of the material in units and subunits with a thorough theoretical and practical testing at the end of each unit. However, the illiteracy of many campesinos is proving to be a serious problem in many of the courses.

There is presently a heavy concentration of the courses in the north coast and the Aguán areas. It is estimated that approximately 60 per cent of the courses are given to groups in the reformed sector and 20 to 25 per cent to groups of small independent farmers with the rest to laborers in larger commercial farms. The mobile unit in San Marcos de Ocotepeque (where supposedly there are fewer groups of the reformed sector) tends to work principally with small independent farmers and it is likely that the unit in Marcala will do the same. However, training of small independent farmers presents a serious problem since these do not have access to agricultural credit or yield-increasing inputs, making implementation difficult if not impossible.

The Rural Formation division of INFOP and SRN are working in the same area of technical agricultural training oriented toward increased production and with roughly the same group of producers. INFOP and the SRN do have a formal agreement for coordination with detailed norms for collaboration from the administrative level to the level of the field personnel, but in actual practice there is little or no coordination. An agreement was made with the former director of the PRH that the PRH would provide the basic social motivation courses preparing a basis for further technical courses which INFOP would give. However, presently there is some feeling in the PRH that the methodology of INFOP may not be compatible with the current general strategy and educational methods of PRH.

Instructors of INFOP plan and give courses in groups with little or no coordination with the extensionist attending these groups and there is no attempt to plan the follow-up of courses with the extensionist who supposedly is supervising the annual investment plan with the BNF. The director of the division of Rural Formation of INFOP feels that in spite of the formal agreement, there was little interest in coordination on the part of SRN except on a personal level with individual extensionists (especially extensionists who have been employees of INFOP). There apparently has been no systematic attempt to inform extensionists regarding the plan and method of the INFOP program, and the regional supervisors of INFOP do not regularly participate in the CAR. It is difficult to see how the training courses of INFOP can be coordinated with a regional agricultural development plan without some more systematic communication

with the SRN. For example, if the training of INFOP does not take into consideration the on-going research program plans for introducing new varieties, crop diversification, and especially marketing opportunities, the long-range impact of INFOP may be much less efective. The INFOP mobile unit training program is little more than a year old and is primarily concerned with establishing itself more solidly. However, more systematic coordination with other institutions of the agricultural sector should have greater priority.

INFOP recognizes that the follow-up of the courses is a problem. Since the instructors usually work within a limited area of 4 to 10 communities in a region and are moving from community to community giving courses, they are able to give some follow-up attention, especially since they are in a community for a longer period of time. However, it appears that if there were more coordination between INFOP, SRN, and the BNF, there would be more assurance that the course recipients would have the credit and other resources necessary to support the implementation of training.

It is difficult to judge the overall impact of INFOP without greater field evaluation. During 1977 the division of Rural Formation gave courses to 4,733 students and in 1978, 568 courses are programmed.

Given the flexibility of the INFOP program and its relative success with small independent farmers in highland communities, INFOP might well give greater attention to this part of the agricultural sector which, at present, receives little assistance from the MNR extension system. The plan of the extension system for gradually reaching more of the small highland farmers--establishing more agencies--is a slow and expensive process of expansion. The INFOP training program might well fit into a more flexible credit-technical assistance approach to small independent farmers.

There is an increasing demand for the courses of INFOP. However, it is likely that with the present rapid expansion the program will soon reach the budget ceiling imposed by the present system of financing through payroll taxes. If INFOP is to expand its services according to the demand, it may have to seek external funds or find a new source of government funding.

NATIONAL SOCIAL WELFARE BOARD (JNBS)

The National Social Welfare Board was created in 1958 as a decentralized agency charged with the planning, coordination and implementation of programs in the field of social assistance. Initially it granted loans to small vendors in Tegucigalpa and established eating and sleeping facilities

for the popular classes, child care centers for the children of working and needy mothers. The nation's First Lady has traditionally assumed the presidency of the National Social Welfare Board. 1/

Types of Activities:

There has been a reorientation of the activities of the National Social Welfare Board in recent years. Today the National Social Welfare Board is a more aggresive institution and is more oriented toward rural development. Its community development activities have a very important educational component, based on the theory that motivation for achievement can be developed and used. The objectives of the community action program are: 2/

a) To insure the participation of the population in the process of the socioeconomic development of rural communities.

b) To promote communal organization in order to increase production and productivity.

c) To complement and reinforce the development of specific priority projects to improve health, education and housing conditions in rural communities.

d) To participate in efforts to reduce the indexes of child malnutrition in rural areas.

At the community level small projects of infrastructure development are carried out: wells and sewage systems, construction of markets, improvement of tools and other activities designed to improve production through the construction of plant nurseries, chicken houses, rabbit hutches, etc.

The child food program is still maintained, but has been extended to rural areas and a great deal of emphasis is placed on nutrition by working with housewives and nursing mothers.

The National Social Welfare Board organizes and offers courses in sewing, masonry, carpentry, etc. (See Table).

Target Population:

Data collection with respect to the number of beneficiaries of National Social Welfare Board programs does not function well. Purely descriptive, rather than operational, criteria are used to measure the achievement of objectives. It is said, for example, that in 1975, 32,125 mz. of cultivated land were covered, 187 asentamientos, 101 individual groups and 10,509 families received attention. However, no details are provided to indicate whether these projects consisted in the providing of inputs, the training of leaders, training in agricultural techniques or other matters. Nor is it

1/ Case study prepared by INCAE in 1975.

2/ National Social Welfare Board. Objectives of the Division for the Social Development of the Community, Bulletin No.1. Tegucigalpa, June 1975.

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pointed out whether some of the beneficiaries of one activity also benefitted from other activities.

Somewhat more precise data can be found in some places at the regional level. For example, in June 1976, in the La Ceiba region, assistance was given to 2,779 women members of the rural housewives clubs, 701 members of community development groups, and 2,759 children in child food programs.

In the San Pedro Sula regional office 386 persons are mentioned as having benefitted from 13 courses: 7 in sewing, 2 in achievement motivation, 2 in nutrition, 1 course for beauticians and 1 in carpentry and masonry. These courses were given during the first six months of 1976 in 8 different places.

In general, the National Social Welfare Board focusses on today's campesino. Programs are still maintained in urban areas, especially for children and include recreational activities for school children.

Location of Activities:

The National Social Welfare Board has its central offices next door to the Presidential building in Tegucigalpa. It also has 6 regional offices in San Pedro Sula, La Ceiba, Juticalpa, Nueva Ocotepeque, Nacaome and La Esperanza.

Human Resources:

In 1975, the National Social Welfare Board had 894 employees. By 1976, the number of employees had grown to 1,190: 247 administrative employees, 80 promoters, 67 instructors, 4 supervisors, 3 programmers, 471 auxiliaries and 338 employees in other categories (these are supposedly cooks and kitchen assistants in the dining facilities, recreational park personnel, etc.).

Of the total number of employees, 159 work actively in the field (supervisors, promoters, instructors and others). Of this total, 6 are social workers, 12 are professionals with university degrees and 74 have medium level diplomas, most as primary school teachers.

Installations, materials and equipment:

In addition to having the greatest number of employees of all institutions surveyed, the National Social Welfare Board also probably has the greatest number of physical installations throughout the country. In San Pedro Sula, La Ceiba and Juticalpa where visits are made, the National Social Welfare Board has large and spacious buildings. They have all the necessary material and are equipped with vehicles for moving people and material. In Tegucigalpa, the National Social Welfare Board operates a new and modern recreational park with swimming pools and sports fields in the center of the city. In other locations it has eating and sleeping facilities for the popular classes, space for gatherings, etc.

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Mobilization:

The National Social Welfare Board is equipped with vehicles for transporting personnel from the central office as well as from the regional offices. The need arose recently to acquire more vehicles due to the increase in activities and personnel. In July 1976, the central office was forced to order the suspension of most of its activities outside its centers (special promotions) due to budgetary problems.

Budget:

The government of Honduras annually contributes L.7,200,000 to the National Social Welfare Board. Also in 1976, according to information provided by the JNBS itself, the government will contribute L.3,030,000 through transfers from other areas of the national budget.

Expenditures are programmed as follows: L.3,000,000 for salaries, L.4,900,000 for administrative expenses and materials and equipment, and L.2,292,300 for construction. As mentioned previously, the National Social Welfare Board is currently undergoing financial pressure due in part to the growth of its activities and personnel (personnel increased by 296 employees in one year).

Means of delivery:

In order to fulfill its purpose of achievement motivation among community groups, both the promoter and the community leaders must be made aware of the importance of the most appropriate means of communication. According to McClelland's theory, "Achievement motivation is demonstrated by the need to improve oneself, improve one's performance, and to achieve, or better yet, surpass self-imposed goals, in order to achieve something new or unique and thus earn a place of distinction." 3/ Actually, the JNBS puts emphasis not on the development of the individual but rather on developing motivation and the ability of community groups to achieve goals.

The JNBS promoters are charged with offering the courses in achievement motivation. These courses are given at the community centers, schools or the JNBS's own centers. The practical courses offered by the Board are given in fixed centers (sewing) or in action sites such as, for example, a brick layer teaching a group of youngsters by means of the construction of a water holding tank.

Relationship with other institutions:

The National Social Welfare Board maintains relationships with many government and private institutions. It cooperates with the Ministries of Natural Resources, Public Health and Public Education, by providing materials, transportation or the construction of health and education centers. It maintains certain relationships with the Ministry of Labor with respect to family action programs. In times of national emergencies, the National Social Welfare Board coordinates help with the National Permanent Emergency Committee.

3/ Ibid.

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GOALS OF THE DIVISION FOR THE SOCIAL DEVELOPMENT OF
THE COMMUNITY FOR THE JANUARY-JUNE 1976 SEMESTER

	BORDER ZONE			NORTHERN ZONE		OLANCHO ZONE	TOTAL
Training Courses	Nacaome	La Esperanza	Ocotepeque	San Pedro Sula	La Ceiba	Juticalpa	
Social Motivation	21	51	28	60		47	207
Organization and Planning	1	1	1	2		1	6
Nutrition	35	30	2	14		10	91
Home Improvement	12	--	--	--		--	12
Agrarian Reform	--	1	--	--		--	1
Water and Soil Conservation	--	1	--	--		--	1
Agricultural Techniques	--	8	16	--		2	26
Rabbit Breeding	--	1	--	--		--	1
Small Industry (Henequen)	1	1	--	--		--	2
Ceramics	--	1	1	--		--	2
Flower Growing	6	--	--	--		--	6
Jarcia (?)	--	--	1	--		--	1
Garment Making	4	7	7	21		8	47
Confectionery	--	1	--	2		--	3
Tailor's Trade	1	--	3	--		2	6
Resin Extraction	--	1	--	--		--	1
Carpentry	1	--	--	4		--	5
Masonry	--	--	--	2		2	4
Course for Beauticians	--	--	--	3		--	3
Latrine Building	--	--	--	--		2	2
First Aid	--	2	--	1		--	3
Training for Nursery Maids	--	1	--	--		--	1
Cooperativism	--	--	9	--		13	22
TOTAL:	82	107	68	109		87	453

Source: National Social Welfare Board, Division for the Social Development of the Community, 1976

Institutions such as CARE, FAO through the World Food Program and municipalities contribute materials, equipment and money for community projects. The communities themselves contribute a great deal toward the cost of carrying out the projects, especially with labor and inputs such as sand and rudimentary working tools.

LITERACY AND BASIC ADULT EDUCATION (ALFALIT OF HONDURAS)

ALFALIT of Honduras is a private entity with a totally religious accent. It is affiliated with evangelical sects and belongs to an organization called ALFALIT Internacional, with headquarters in Alajuèla, Costa Rica.

Types of Activities:

ALFALIT operates principally through the network of evangelical churches. Its promoters, aided by monitors and pastors, identify the potential recipients and promote the formation of literacy groups. They are concerned with insuring that literacy is not achieved as an end in itself; that is, it is directly linked to the program for accelerated primary education sponsored by the organization, and to community development. In this way, the groups not only promote literacy but also orient their members toward the study and solving of their communal problems, and at the same time seek to provide an educational program which will ensure the beginner the opportunity to advance to whatever level he is able. It should also be pointed out that underlying all its activities is a religious "indoctrination" or "proselytism" which attempts to reaffirm or convert the student to the evangelical religious doctrine.

ALFALIT is currently finalizing a planning phase prior to initiating a literacy program in the Mosquitia region. It plans to contract two new promoters for this region.

Target Population:

In June 1976, there was a total of 450 persons enrolled in its literacy programs. It is estimated that 65% of those who become literate continue on to accelerated primary education. Some 75% of the beneficiaries of ALFALIT programs are located in the three principal cities in the country, i.e., most are workers.

Location of Activities:

ALFALIT's central office is located in Tegucigalpa. As previously mentioned, almost all of the organization's activities are centered in Tegucigalpa, San Pedro Sula, and La Ceiba. In these latter two cities, ALFALIT has regional offices. Work is carried out with campesinos in the North Coast region between San Pedro Sula and La Ceiba.

Human Resources:

The organization has a staff of 51; 44 are volunteers and 7 are paid employees. It has 43 monitors, all of whom are volunteers; 12 are teachers, 28 have finished sixth grade and 3 have not completed sixth grade.

The Director of the organization is a teacher. There are 3 promoters, two of which are agricultural peritos and one is a teacher. The central office also has three auxiliaries. One American woman, with a Master's Degree in Linguistics, also works with the organization on a volunteer basis.

Installations, Materials, and Equipment:

ALFALIT has small offices in a rented locale in the center of Tegucigalpa. It uses schools, churches, community centers and private homes for its meetings with the literacy groups. It receives most of its teaching materials from ALFALIT Internacional, in the form of donations.

Mobilization:

As this is a program concentrated mainly in urban areas, there are no problems of mobilization either of personnel or of recipients. Nor are there problems reported on the North Coast.

Budget:

It is estimated that a total of L.59,500.00 will be spent in 1976. Of this amount, L.27,000.00 is budgeted for the special program in La Mosquitia and L. 32,500.00 for salaries and administrative expenses of the central office and regional operations. Some 95% of the budget comes from foreign donations, principally from churches and evangelical organizations in the United States. The remaining 5% comes from local donations. Almost all its teaching materials are donations received from abroad (ALFALIT Internacional), and their value is not included in the budget.

Promoters receive L.200.00 in monthly salary and this amount includes travel expenses. No other information was received regarding salaries.

Means of Delivery:

The literacy courses are given in fixed centers (schools, churches, community centers, etc.) using monitors to organize and direct the meetings. Socially and religiously motivated written materials are used. Of the three organizations dedicated exclusively to literacy improvement, ALFALIT has a greater abundance of written and visual materials.

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Relationships with other Institutions:

By means of the agreement between General Directorate of Literacy and Adult Education, the certificates issued by ALFALIT are recognized by the Ministry of Education. In addition, short courses or seminars are given periodically on topics related to literacy in which the General Directorate invites the participation of ALFALIT personnel.

The organization maintains close relationships with all of the evangelical sects which sponsor its efforts. It also maintains a strong relationship with CEDEN (described elsewhere in this report), an organization which grants it space for its regional offices free of charge. The President of the Board of Directors of ALFALIT of Honduras is an officer of CEDEN.

The only contact which ALFALIT has with ACPH, is through activities organized by the General Directorate of Literacy and Adult Education, in spite of the fact that the offices of both organizations are located 50 meters apart.

EVANGELICAL COMMITTEE FOR DEVELOPMENT AND NATIONAL EMERGENCY (CEDEN)

As a result of the situation brought about by the events of the war with El Salvador in 1969, the Evangelical Committee for Development and National Emergency was created. Then in 1972, as a result of the earthquake which affected Nicaragua, the Committee once again began to function in order to channel aid to the earthquake victims. In September of 1974, when Hurricane Fifi devastated Honduras, the evangelical community agreed to restructure and increase CEDEN's field of action and to make it permanent in nature. It was thus that CEDEN was granted its legal status in January 1975.

Types of Activities:

CEDEN works principally in three fields: Promotion and Human Resources, Health and Agriculture.

Its promotion and human resource activities are oriented toward the organization of community development groups and leadership training. It is equipped with a laboratory for the preparation of written and audio-visual material. Most of its work is of a definitely religious nature.

In the field of health, CEDEN carries out a number of activities: it collaborates with health committees and trains nursing assistants, midwives and paramedics. Its promoters provide assistance to the mothers of infant children and carry out family planning activities. They organized housewives' clubs and to discuss topics such as nutrition, environmental sanitation, family health,etc. They also operate well-

drilling equipment and set up eating facilities for children and infants.

The agricultural area is very important. It provides techincal assistance to small farmers in the raising of livestock and the cultivation of basic grains. It grants small credits for farmers who own up to a maximum of five manzanas and who have been unable to obtain credit through normal banking channels. It also promotes the forming of cooperatives.

Target Population:

CEDEN attends to approximately 50 rural communities. Its beneficiaries are children and adult campesinos. Concrete information on the number of persons benefitted is unavailable.

Location of Activities:

CEDEN is organized in three regions: San Pedro Sula, which also services the Western Zone, La Ceiba, and Choluteca.

Human Resources:

A total of 27 persons work direclty with CEDEN. The administrative staff consists of three people. There are 17 promoters, 2 instructors, 3 auxiliaries and 2 pastors who work as advisors.

Seven of the promoters have degrees as Peritos Agrícolas. Two pomoters are nurses with secondary educations. Three of the promoters are teachers, two are Peritos Mercantiles, two are Bachilleres and one is a high school student.

The Director of CEDEN is an Agricultural Engineer. The head of promotion and human resources is a teacher and has studied abroad in the field of educational cinematography. The head of the health division is a graduated nurse of the highest level and the head of the agricultural area is a graduate of the Panamerican Agricultural School.

Installations, Materials and Equipment:

CEDEN has modern and well equipped installations in Tegucigalpa. It also has centers in San Pedro Sula and La Ceiba. It uses churches and community centers for its promotion and community development activities. In 1975, CEDEN built a Rural Health Center (CESAR) in the community of El Rancho in the San Pedro Sula region. The goal for 1976 is to organize and build an additional 5 Rural Health Centers.

Two well-drilling units were donated to CEDEN by foreign sources. It also has its own vehicles. It also operates 12 eating facilities for children and 39 milk distribution centers for children.

In 1975, CEDEN loaned out L. 137,893.21 in the form of credits to campesinos for the growing of basic grains and vegetables. The credits were used for the planting of 4,666 manzanas.

Through the housing program which finalized in 1975, CEDEN built 502 dwellings in El Progreso, Santa Rita, Flores de Oriente, San José, Olanchito and Tocoa.

Mobilization:

As previously mentioned, CEDEN is equipped with its own vehicles. It also uses vehicles provided by the religious institutions associated with CEDEN.

Budget:

For 1976, CEDEN has a budget of L. 1,510,115.50. Of this total, the amount of L. 260,240.00 has been budgeted for salaries.

The Director of CEDEN earns an annual salary of L. 19,200.00. The promoters receive between L. 175.00 and L. 225.00 monthly. A promoter in the agricultural field earns L. 450.00 monthly.

CEDEN receives almost all of its funds from abroad: donations from the sister churches of the national churches, from international agencies, from banks and from private individuals.

Means of Delivery:

CEDEN promoters work in the communities through meetings, talks and direct action with individuals. They organize workshops or encounter sessions for the training of leaders, etc. They use written and audio-visual materials prepared in their own facilities as well as imported from abroad.

Relationships with other Institutions:

CEDEN maintains close relationships with the Ministry of Health. By means of agreements with the Ministry the first Rural Health Center has been built and training has been provided for paramedics and auxiliary nursing assistants (midwives).

It also has relationships with CARE and with the National Social Welfare Board in certain activities.

HONDURAN POPULAR CULTURAL ACTION (ACPH)

ACPH was created sixteen years ago based on the experiences of the Colombian radio schools founded in 1940 by Father Salgado.

Today, the objectives of ACPH transcend mere literacy improvement; they emphasize an awakening of the campesino and his motivation toward individual and community development.

Today, ACPH has no direct link with the Catholic Church, although it receives donations from some international Catholic institutions.

Types of Activities:

ACPH attempts to achieve four goals: literacy, to imbue a motivation toward change, to develop a capacity for organization and to promote a greater participation in the local and national governmental processes.1/

To achieve these goals, ACPH carries out three programs of activities: the Radio School, Agricultural Promotion and Social organization.

The Radio School has two orientations: literacy and accelerated primary education.

The Agricultural Promotion Program is oriented toward the teaching of agriculture techniques - especially the cultivation of basic grains - to campesinos.

The Social Organization Program is oriented toward motivation for formation of groups such as campesinos leagues, agricultural enterprises or cooperatives.

Target Population:

The Radio Program covers almost the entire country. In 1975, a total of 23,589 individuals enrolled. The regions of Choluteca (8,400 students), Yoro (3,268), Cortés and Atlántida (2,540) registered the greatest number of students. In the Agricultural Program, some 10,000 campesinos are currently participating.

Location of Activities:

ACPH has established eight regional offices in San Pedro Sula, El Progreso, Sonaguera de Colón, Santa Rosa de Copán, Snta Bárbara, Choluteca, Juticalpa and Tegucigalpa (for Francisco Morazán, El Paraíso, Intibucá and Comayagua).

The central offices are located in Tegucigalpa along with the workshops for the preparation of materials, studio for the preparation of radio programs, and the administrative headquarters of the association.

Human Resources:

ACPH currently has a total of 166 paid employees: 6 in central management, 9 programmers at central headquarters, 8 regional supervisors and 1 auxiliary supervisor, 16 agricultural instructors, 49 agricultural promoters, 68 Radio School coordinators and 6 auxiliaries at central headquarters.

For carrying out its radio program, ACPH employs 1,267 voluntary monitors at present. Additionally, there are some 530 monitors in the Choluteca area who are currently inactive, due to the closing down of the radio station which ACPH used in that region.

Installations, Materials and Equipment:

The central headquarters of ACPH are located in the center of Tegucigalpa. They are equipped with adequate space and with supplies of material and equipment which are also adequate for the programmed activities.

In the field, ACPH uses space in the offices of CONCORDE or other space provided free of charge for its regional offices. The training circles or school groups meet mainly in public schools, which are also loaned free of charge.

Mobilization:

ACPH has available a number of vehicles for the mobilization of office personnel and supervisors are provided with vehicles for their own mobilization. Transportation is provided by CONCORDE and a few campesinos organizations for promoters, instructors and coordinators.

Budget:

ACPH receives from the Government of Honduras an annual subsidy of L. 30,000.00 which is used for the administration of its programs (salaries, rent, transportation, etc.). Radio School students pay a L. 2.00 quota each. According to the reported enrollment figure, these quotas total L. 47,718.00 which is used for the preparation of written material and material for the Radio Programs. The Agricultural Program is financed mainly with funds from the sale of crops.

ACPH regional supervisors receive a monthly salary of L.325.00, promoters and instructors earn L.210.00 and programmers receive L.450.00 monthly. ACPH authorizes per diems of L.5.00 per day for these employees and L.10.00 for administrative employees earning between L.600.00 and L.1,000.00 monthly.

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Means of Delivery:

The radio is the cornerstone of the ACPH programs. It is used to carry out the literacy and accelerated primary education program and to provide information to the campesino with respect to agricultural topics and social organization.

The teaching program uses the radio and the monitor. Each monitor is equipped with a radio and printed material (posters and instructions) for carrying out the classes.

Agricultural instructors and promoters have more direct contact with their beneficiaries (talks, short courses, etc.) and the radio is used to reinforce the material presented.

ACPH publishes a monthly newspaper. Its articles are written by employees and, on occasion, by participants in the programs.

ACPH also prepares two news programs for the campesino: "Voz del Campo" (Voice of the Field) and "Horizontes Campesinos" (Campesino Horizons).

These programs are transmitted by radio through the Ministry of Culture, Turism and Information.

Relationships with other institutions:

By means of the agreement signed with the General Directorate of Adult Education, the diplomas issued by ACPH are recognized by the Ministry of Education. ACPH also participates in meetings called by the General Directorate.

ACPH maintains very close ties with the National Union of Campesinos (UNC) whose activists serve as monitors and voluntary promoters of the programs of the associations.

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ANNEX M

OBSERVATIONS ON THE ROLE OF WOMEN IN THE AGRICULTURAL SECTOR IN HONDURAS

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INTRODUCTION

The following paper is a brief presentation of observations on the role(s) women play in the Honduran agriculture sector and on the development program and human resources that currently deal with women as beneficiaries. The objective is to flag economic opportunities for women in the sector -- not only opportunities for increased participation but for increased decision-making and control in their lives. Because of the lack of adequate statistics on the economic activities and resources of rural women, this paper should be considered preliminary and the observations subject to change as more data become available.

In Honduras, as in most of the world, development planning and implementacion are done largely by men, with men's roles and needs in mind. Assuming that women are (or can be) as productive economically as men, it becomes imperative to document the role of women, to better serve them and help them realize their economic potential.

Rural men traditionally are the agriculturists and women the performers of household work and child care. "Men's"activities -- food production --are accorded more prestige than domestic chores, probably than do "women's" activities. Of course "Men's" and "women's" roles are not mutually exclusive and there is a degree of flexibility that permits some overlap in traditional roles. Nevertheless, by documenting women's actual roles in the rural areas, emphasis can be given to reducing the drudgery and time spent on certain tasks and making possible increased decision-making and income-producting activities. It is not being advocated here that women reject their traditional tasks or imitate men's roles. Instead, they should gain access to roles which permit them to be economically more productive, to exercise control over more economic resources, and at the same time, to be successful in domestic and child-care responsibilities, as their cultural setting dictates. Moreover, increases in rural woman's income are almost certainly converted into increases in the standard of living of the family.

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STATISTICS ON HONDURAN WOMEN 1/

General

Total population of Honduras	2,657,000
Total rural population	1,824,000
Female rural population	902,000
Total population 15 to 54 years of age	1,250,000
Female population 15 to 54 years of age	650,000
Married rural females	130,000
Rural females living in "free union" relationship with a male	160,000
Total rural head-of-household	317,000
Total rural heads-of-household without spouse, with dependent children	49,000
Rural female heads-of-household without spouse, with dependent children 2/	40,000
Average urban life expectancy	61.5 years
Average rural life expectancy	50.1 years
Average female life expectancy	55.53 years
Average male life expectancy	50.91 years
Average fertility rate of rural females	8.7 children
Average number of children per rural family	5 to 6 children

Employment

Total population economically active 3/	762,795
Total rural population economically active	509,806
Rural females economically active 3/	39,382
Occupation Categories of Economically Active Rural Females	
Operators of agricultural product processing/preparation equipment	13,500
Domestic servants/cooks	7.400
Farmers and agricultural day laborers	5.300
Professionals (teachers, nurses)	3.800

1/ 1974 National Census Figures

2/ This figure of 13% of total rural heads -of-household probably represents permanently single females; if seasonally single women are included (because of male labor migrations), the figure approaches 25-27%.

3/ "Economically Active" includes employed and unemployed salaried workers; it does not include students, housewives, landlords, retired, handicapped, or other unremunerated positions.

4/ By the above definition of economically active, rural women constitute only 8% of the rural labor force while they account for 49.5% of rural population. Unaccounted for are women engaged in productive on-farm activities.

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Shopkeepers, vendors	3,400
Seamstresses, artisans	3,000
Other	3,000
Percentage of Women Employees in Central Government Agencies 1/	45.1%
Percentage of Women Employees of Public Agriculture Sector Agencies 1/	
Banco Nacional de Fomento	24.4%
Corporación Hondureña del Banano	33.3%
Corporación Hondureña para el Desarrollo Forestal	16.7%
Consejo Superior de Planificación Económica	30.8%
Dirección de Fomento Cooperativo	30.9%
Instituto Hondureño del Café	18.2%
Instituto Nacional Agrario 2/	
Instituto Nacional para la Formación Profesional	29.8%
Junta Nacional de Bienestar Social	60.4%
Ministerio de Recursos Naturales	15.4%

Education

Total rural primary school graduates, 30 and over	146,000
Female rural primary school graduates, 30 and over	62,000
Total rural secondary school graduates, 30 and over	4,300
Female rural secondary school graduates, 30 and over	1,900
Total college graduates, 30 and over	6,412
Female college graduates, 30 and over	1,041

ACTIVITIES OF WOMEN IN THE AGRICULTURE SECTOR

The economic conditions in the rural areas of Honduras dictate that all family members able, contribute to income. If agriculture is defined in a broad sense, (i.e., from land preparation through seeding, fertilizing, weeding, harvesting, storing, processing, and marketing), then there is a great deal to write about a woman's role in agriculture. It is not uncommon for the cash or subsistence income contributed by the woman in the form of eggs, cheese, fresh or processed fruit, vegetables, or small animals to be the principal food source for the family during periods of grain shortage. Statistics are scarce for women's unremunerated labor. Interviews both with people who work with rural women and with a number of women themselves form the basis for the following information.

1/ Includes professional, technical, supervisory, secretarial, artisians, an unskilled personnel. The percentage of female mid- and high-level professionals is considerably lower.

2/ Figures not available.

Agricultural Activities

Coffee: During the four-month coffee harvest each year men, women, and children give cutting coffee priority over all other work. Women are the preferred labor source for the harvest because of their speed (they average six arrobas per day compared to four for men). Women also are hired to do the initial planting of coffee seedlings and are important in the coffee processing plants where the final product is carefully picked over before being exported. The wage per arroba of coffee cut is L. 1.00 and the wage per work day in coffee processing is L. 4.25 minimum.

Men are the principal landowers in the coffee zone as in other areas of the country; however, coffee is a crop that a woman may undertake to plant as a cash crop, if she owns a few manzanas, since she can handle the labor by herself.

Cotton: As a source of wage workers in cotton, women are as important as men. Though land preparation and seeding is accomplished by men with tractors, there are four steps in the six-month cotton cycle in which hand labor is needed and for which women form perhaps 50% of the labor: in the "deshije" or thinning process when the seedlings are small; in the fertilization stage two months after planting, when workers must apply powdered area to the plants; during the weeding process, throughout the entire cycle; and at harvest when the laborers pick mature cotton over a three-month period.

Women and men receive equal pay: wages are L. 3.00 per hundredweight for the harvest; the eight-hour wage for other activities is L. 2.50 to L. 3.00, depending on the area.

Vegetable and Fruits: Irrigated garden plots are a fairly recent innovation in rural areas due to the scarcity of water, but around many households one typically sees pataste (a type of squash) and coriander. Through the efforts of Housewives Clubs, families are learning to grow and eat cabbage, green peppers, tomatoes, onions, and carrots, once foreign to their diet. With the exception of some commercial vegetable farms, it is women who carry out the gardening activities, from preparing the soil to carrying water for irrigation.

Fruit trees such as mango, papaya, avocado and orange generally are tended and picked by women with any processing also done by them. Marketing of the fresh fruit is done by either men or women, and may be a function of the distance to the market.

Packaging of fruits and vegetables for export such as bananas and tomatoes, is work done by women primarily. Women are hired as

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labor for other vegetable processing plants. The wages are the minimum required by law and the work often tedious. Women are the preferred labor, as in coffee, because they are considered to be more adept and visually sensitive than men. Other fruit crops attended by women and men alike are pineapple and melons.

Basic Grains: The land preparation, seeding, fertilizing and harvesting of basic grains is largely the work of men in Honduras, while women most frequently process, store, and market the product. This is true for beans, corn, rice and sorghum. In potato-growing climates, women genrally help with land preparation, and are responsible for planting, weeding, harvesting, storing and marketing the excess.

The examples of women taking responsibility for all phases of basic grains production are numerous. The high rate of abandonment by men or their seasonal migration for wage labor makes it necessary for rural women to be able to care for the milpa. Offers of small loans for seed and fertilizer from the Junta Nacional de Bienestar Social and COHDEFOR/FAO programs have stimulated groups of women to plant a few manzanas of basic grains for commercialization. While the full-time participation of women in basic grains production is not a goal of these programs, women are benefiting from the extra income and the experience of organizing around such a project.

Tobacco: Women and men both are active in the cultivation, harvest, and drying of tobacco, while leaf selection and cigar manufacture depend almost entirely on women's wage labor.

Animal Husbandry: Raising small animals is one of the most important of a woman's agricultural activities since pigs, chickens and laying hens represent family savings, are an important source of protein, and may bring in a cash income. The woman's role in animal care and the income-increasing potential of this activity are recognized by a number of public and private sector institutions that promote technical assistance and small projects through the Housewives Clubs. At least one private organization, CEDEN, has launched a chicken vacination campaign through women and high school students.

In addition to pig and chicken raising, a number of projects in beekeeping and rabbits have been promoted by the Ministry of Natural Resources and the Junta Nacional de Bienestar Social. Cheese from goats being promoted by CEDEN may generate additional income for rural women.

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On farmsteads where there are a few head of cattle, it often is the woman's task to milk and feed the animals. In the West, (Lempira, Ocotepeque, and Copán) it is not uncommon for women to lead the cattle herd to highland pasture during the dry season and to stay with them there, making periodic trips home to replenish supplies, sell cheese, etc.

Projects involving small animals may have great income-earning potential for women since it appears that women make the decision whether to sell or butcher the animal.

Marketing: Control of the internal commerce of rural communities is one agricultural activity commonly in the hands of women. A woman may buy the products of other women in the community, trade or sell them in a larger market community, and collect a small profit in the process. Another source of income is for a woman to invest her savings in nonperishable items such as soap, salt, noodles, candy, and bottled drinks and sell the stock for in-kind or cash payment genrally at the time her family needs food or clothing.

As in all marketing situations there exists the potential for exploitation. In a study of several rural communities of the south women were found to carry their proficiency at marketing to the point of exploitation in the form of extraordinarily high prices and interest rates, leading potentially to a net outflow of wealth from the community. Cooperative management of community commerce might be an acceptable alternative to this situation.1/

Nonagricultural Activities

The principal nonagricultural role of the Honduran women is to educate her children and to prepare food and care for her family. Family education is nonformal and therefore unstructured. Formal education of the children usually cuts into the time they have available to help with farming or household work, and therefore i a luxury for most rural children beyond third grade.

Food preparation and laundry involve the most tedious work for a rural woman. She rises at three or four in the morning to gather firewood and carry water, often from distances of two to five kilometers. Three hours may be spent grinding first in a hand grinder followed by a stone mano, corn for tortillas. This is a task that must be done daily for flavorful results. The animals must be fed, the cows milked. Laundry may take two or four hour

1/ R. G. Stares, "Estudio de Ingresos y Gastos Familiares en la Zona Sur de Honduras", Choluteca: Octubre, 1971.

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depending on the distance the woman has to walk to the stream or spring. At noon it is customary for a woman to deliver lunch to her mate in the milpa, often at a great distance. The afternoon may be spent attending a "charla" by the promotor of one of numerous agencies, or it may be an opportunity to tend the garden (if there is one), make cheese, or mend clothing. Supper is light; bedtime is early.

Diesel-powered corn mills and potable water systems understandably create immense changes in a woman's daily routine.

AGRICULTURE SECTOR PROGRAMS CURRENTLY REACHING HONDURAN WOMEN

Agricultural programs for women exclusively or for men and women together are being implemented by no fewer than five public sector and six private sector institutions. Below is an inventory and short description of the most influential of these programs.

Public Sector

Ministry of Natural Resources (MNR): The Division of Home Economics within the Agricultural Extension Program promotes, through the development of Housewives Clubs, the objectives of increased standard of living and increased level of family participation in the development process. Specific projects in women's agricultural production include family and community horticulture; care of hens, pigs, bees, fish and rabbits; tree fruit crops, and ornamental plants. The Clubs also sponsor activities in home improvement; courses in applied nutrition, health,small agro-industries, agriculture, food preservation, and sewing; and installation of small canning, tailoring and handicraft industries. In 1978 six small agro-industries will be begun through the Frontier Development Program. In 1977, 43 Clubs with a total of 645 members were organized. The Ministry claims a total membership of about 750.

The Home Economics program is staffed with one national supervisor, two regional supervisors and twenty-five Promoters, all women, who are assigned to various of the Ministry's 82 Agricultural Development Agencies all over the country. Each agency is directed by an extension agent; there are no female extension agents.

The promotors must have as a minimum a bachillerato (high school) degree; they receive no formal training in agriculture in their job.

Junta Nacional de Bienestar Social(JNBS): The Junta's Division of Social Development of the Community supports a country-wide program of social services channeled through community "Patronatos", "Housewives Clubs", and "Production Groups". Much like the

Ministry, Junta promotors organize Housewives Clubs, promote activities in child feeding and provide seed and technical assistance for gardening. The Junta solicits donations from international organizations to pay start-up costs for small projects in sewing, canning, etc. In 1977, 22 promotors, 38 feeding center directors and 19 Peace Corps Volunteers, all women, worked to establish 308 new Housewives Clubs. The promotors receive from the Junta a maximum of three weeks' training in nutrition, gardening, and project planning.

Since the 1974 hurricane, the Junta also has sponsored a Basic Grains Production Project through which community groups receive improved seed and fertilizer for corn, beans, rice, sorghum, bananas and sesame. Extension agents of the Ministry of Natural Resources often collaborate by providing technical assistance for crops and small animals. Any community group including the Housewives Clubs is eligible for this assistance upon completion of a brief production plan. The seed credit is granted in exchange for a signed receipt from the group, and is repaid at the time of harvest. If the community needs no further assistance after one or two years, the credit and technical services are extended to new communities in the same region.

In 1977, L. 84,169 were provided in seed and fertilizer to 458 Production Groups all over the country. Most of these groups are composed of male farmers in the traditional sector who assist each other on privately-owned lands or who work a few manzanas of community land in common. JNBS promotors indicate that women participate in this project both by assisting the men and by forming all-female production groups. The JNBS later encourages these groups to become pre-cooperatives.

In this program's four years of operation, a repayment rate of 90% has been achieved. The 10% default rate is attributed to bad weather, drought, and insects.

National Agrarian Institute (INA): PROCCARA, INA's training arm, initiated in May, 1977, a program to increase women's income and quality of life in the reform sector. Women already organized in Housewives Clubs, either by INA itself or by the campesino organizations, are eligible for courses in vegetable production, preserving, beekeeping, small animal husbandry, sewing, communications, health, and nutrition. Many of these courses have been sponsored with the assistance of the National Institute for Professional Formation (INFOP). In the first eight months of the program known as "UNIFCA", training was given to 1,208 rural women on agrarian reform farms affiliated with either INA or the major campesino organizations.

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The 1977 program reached women in the Aguan and Cortes; plans call for 5,000 women in eight departments to be trained in 1978.

Project coordinators indicate that a major frustration has been the inability to obtain credit for small projects.

National Institute for Professional Formation (INFOP): Until 1977, INFOP's training programs in agriculture were directed exclusively toward men. In 1977, women and older children began to be promoted for training programs in horticulture, beekeeping, and rabbit,pig, and chicken raising. To date this program has been given in the Bajo Aguan, where it is in collaboration with the INA program mentioned above, and Olancho. It will be extended to other regions in 1978.

INFOP in 1976 collaborated in a three-month course in horticulture and basic grains production for eighteen female ANACH promotors. The course, designed to integrate the women into the broader agricultural activities of cooperatives, was three months shorter than planned because of lack of funds.

Honduran Forestry Development Corporation (COHDEFOR): A watershed management program sponsored by COHDEFOR and the Food and Agriculture Organization of the United Nations subsidizes as many women laborers as men in terrace construction near San Pedro Sula. The project promotes soil conservation as well as crop diversification. Agrarian reform groups and some traditional farming groups are supplied seed, fertilizer and tools with which to cultivate basic grains, vegetables, fruit trees, bananas, and pineapple. Extensionists are employed by the project to teach the new techniques.

Increased economic independence of the women participants is a benefit of the project since each laborer receives the same measure of corn and beans for the day's work. The project is most burdensome for the women, however, since they must still carry out the domestic chores and care of the children. The men, on the other hand, work on this project only at times of the year when other farm work is light.

Private Sector

Private sector organizations promoting rural women's projects include the National Association of Honduran Campesinos (ANACH), the Evangelical Committee for National Development and Emergency (CEDEN), CARE, Caritas, the National Campesino Union (through the Federation of Campesino Women), and the Community Development Foundations/Save the Children Federation (CDF/SCF). Of these,

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interviews were conducted only with ANACH, CEDEN, and CDF/SCF.

ANACH: ANACH's women's arm, JUFEDECO, was started in February, 1976, with a grant from the Honduran Government through the Ministry of Finance. Twenty-five campesino women promotors, each receiving a stipend of L.100.00 monthly to cover salary and expenses, organized 210 Housewives Clubs in ANACH-affiliated cooperatives. In October, 1976, eighteen promotors began a six-month course in horticulture and basic grains production in La Paz, in collaboration with INFOP, but had to stop after three months when funds were exhausted.

The promotors have stimulated the clubs to seek resources for training and project development from government institutions. Many applications for small animal and agro-industrial projects were circulated, with little success. INFOP collaborated by sponsoring courses in beekeeping, small animal care, sewing, etc., and several groups joined the COHDEFOR/FAO terraced agriculture project.

JUFEDECO has no permanent funding source. Their grant ran out in July, 1977, and a reduced program has continued with the volunteer work of a director and sixteen promotors. Moreover, inability to get credit for start-up costs has been one of the biggest hindrances to establishing small agro-industrial projects.

CEDEN: CEDEN is a local voluntary agency working in 40 communities on the north coast and in Ocotepeque, promoting health care and improved nutrition. With assistance from Church World Services, CEDEN organizes Housewives Clubs to plant gardens, raise small animals, install wells, and establish feeding centers. Chicken vaccination campaigns and dairy-goat projects are being promoted through and for women. Men receive technical assistance and small loans for basic grains. CEDEN works primarily with traditional sector farmers.

CDF/SCF: This private voluntary agency financed start-up costs for a mango puree enterprise managed and operated by a cooperative of 21 women in San Juan Bosco, Pespire. While the marketability of the product is not yet determined, based on the first season's production, the venture has been successful in several other respects: the women organized effectively to oversee and participate in the construction of a building and equipment for the factory; they set up systems for accounting and procurement of supplies; they got the enthusiastic support of their husbands and families in the process; and finally, income made by the cooperative bought food for the community when last year's corn crop failed.

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CONSTRAINTS TO INCREASING WOMEN'S PRODUCTIVE ROLE

The promotors of organizations seeking to increase the participation of the rural woman in the development process identify limited or no access to credit or technical assistance as a major constraint to this process.

The network of promotors and agencies reaching women is well developed: literally thousands of women belong to Housewives Clubs promoted by one of the nine or ten institutions mentioned earlier. Although technical assistance is offered by some of these, it is not often accompanied by credit for small money-making projects. To be eligible for agricultural credit from the BNF, a woman must have as cosignator her husband, son, or other male. The BNF administers a "Small Industries Fund" guaranteed by the Central Bank that lends a maximum of L.10,000 to individuals or L.25,000 to groups. To date, however, this money has not been lent to women. The high default rate has caused the Bank to virtually stop loan disbursements from this three-year-old fund. In any case, loans to all but small agro-industries probably will be discontinued by the BNF with the impending reorganization.

Water carrying, tedious food preparation techniques, and the demands of several dependent children are another serious constraint to a woman's efforts to increase her income or skills level. Even when financial and technical resources are available, women may not have the time nor energy to engage in income-producing activities.

Cultural attitudes that place a higher value on a man's income-earning potential may generate opposition to efforts to draw women into the development process. This is by no means a justification to leave women out as beneficiaries or implementing agents of development programs. The Community Development Foundation Mango Puree Project and COHDEFOR/FAO have succeeded in getting broad-based support for projects in which women make the same or a larger income than men and in which women often supervise work being performed by men. In both cases, the implementing institutions worked to gain the confidence of the project community and demonstrated in advance what benefits would accrue to the community as a whole. In addition, it is significant that men and women both are involved in these two projects.

RECOMMENDATIONS

1. Establish a national training program for promotors of public and private institutions that work with Housewives Clubs or other base-level groups that include women among their membership. The

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curriculum should have a firm basis in data collected on activities currently performed by women in the sector, the economic resources they actually control, and their priorities for improving their standard of living. Training should last at least six months and be oriented toward skills needed to promote labor saving projects (such as community-owned corn grinders, central washing facilities, potable water systems and child day-care facilities) as well as income-producing projects (small industries in canning, cheese-making, meat-smoking, leather work, sisal rug and furniture production, soap-making, etc.). The projects will depend on the priorities of the community, the resources available locally, and must be based on an assessment of the market. Promotors should be instructed to encourage cooperatively-owned enterprises with a simple accounting system to avoid domination by a few.

2. Support a credit fund designed for small agricultural and industrial projects with policies that do not discriminate against women, even if they have no male cosignator or title to land. The appropriate institution will have to be identified -- perhaps the BNF.

3. Support increased participation by qualified, interested women in traditionally male career categories. Schools that currently limit enrollment to men (the Panamerican Agricultural School and the National Agricultural School at Catacamas, for example) significantly hinder that effort. Women professionals in the public sector agriculture institutions should be given equal consideration with men for training opportunities.

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ANNEX N

DEMAND FOR PROFESSIONAL AND TECHNICAL PERSONNEL GENERATED BY PRINCIPAL PROJECTS AND PROGRAMS SCHEDULED FOR 1979-83

DEMAND FOR PROFESSIONAL AND TECHNICIANS IN THE BASIC CAREERS GENERATED BY THE PRINCIPAL NATIONAL PROGRAMS AND PROJECTS FOR THE FIVE YEAR PERIOD 1979-1983

AGRICULTURAL SECTOR

- Agricultural Engineers	212
- Agronomists	240
- Agricultural "Bachilleres" 1/	179
- Veterinary Doctors	86
- Forestry Professionals 2/	200
- Promoters (agrarian, cooperative and others)	200
Total	1,117

SOURCE: Survey on personnel specialized in agriculture and related fields. National Projects. Ministry of Natural Resources. Institute for Socieconomic Research, 1977.

In the estimate presented on the following page corresponding to the basic professional careers, it can be seen that there exists a demand for 631 professionals in the agricultural careers, 86 veterinary doctors, 200 forestry professionals and 200 promoters (for the latter, no degree in agriculture is required).

1/ It was assumed that one third of the promotors demand by INA would be required to have an intermediate level of agricultural education and they were included under the agricultural "Bachilleres."

2/ Estimates calculated by P.W. Sundheimer (AID).

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AGRICULTURAL SECTOR, HONDURAS 1977. SPECIALIZED PERSONNEL REQUIREMENTS FOR OFFICIAL PLAN AND PRIVATE ACTIVITY IN THE FIVE YEAR PERIOD 1979-1983 OF THE NATIONAL DEVELOPMENT PLAN

SECTOR AND MAJOR AREAS	NUMBER	TOTAL
Public Sector		1,333
Basic Professionals		917
Agricultural Engineers	212	
Agronomists	240	
Agricultural "Bachilleres"	179	
Veterinaries	86	
Forestry specialists	200	
Post-agricultural specialist		164
Complementary specialists (non-agricultural)		138
Replacements		114
Private Sector		81
Demand	65	
Replacements	26	
General Total		1,414

Source: Preparation based on: Survey of specialized personnel in the agricultural sector. National programs and projects. Institute for Sodio-economic Research. Ministry of Natural Resources. Various AID reports.

NOTE: Excludes banana companies, Central Bank of Honduras and the private banking sector.

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ESTIMATE OF THE DEMAND FOR SPECIALISTS AND COMPLEMENTARY ADVISORS FOR THE PRINCIPAL GOVERNMENT PROGRAMS OF THE AGRICULTURAL SECTOR

FIVE YEAR PERIOD 1979-83

AREA	NUMBER OF PERSONS
Agronomy specialties	73
Statistics	5
Veterinary specialties	7
Marketing	7
Information and documentation	14
Economics	18
Engineering specialties	48
Planning and development	43
Administration	12
Social	22
Other	33
Total	302

Source: Survey of personnel specialized in agriculture and similar activities. National Projects. Ministry of Natural Resources. Institute for Socio-economic Research.

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After a careful analysis of the demand for specialists and the required functions, a classification was drawn up which appears below. This also allows for the determination of the areas in which the specialist is required to be, or might be, a graduate in an agricultural field, that is, specialties which are or might be obtained after the agricultural career. The results are as follows:

AREA	NUMBER OF PERSONS
Agricultural specialties	73
Veterinary specialties	7
Marketing	7
Planning and development	43
Administration	12
Social	22
Total	164

The results are 164 specialists (post-agricultural) and 138 complementary advisors.1/ This distinction is important since the former comprise the group of "specialists" for the sector. It is with respect to them that a decision must be taken whether to train a part of the basic group or bring them in from abroad; in the first case, the partial withdrawal must be compensated and the new specialist will partially reinforce the base.

1/ The program coordinators agreed decidedly on the desire of training personnel from the (basic) programs, who already have required a degree of experience thus converting them into specialists, instead of training recent graduates.

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ANNEX O

DEMAND FOR PROFESSIONAL PERSONNEL FOR DEVELOPMENT PLANS BY INSTITUTION AND SPECIALTY

DEMAND FOR PROFESSIONALS FOR THE DEVELOPMENT OF THE BASIC PROGRAMS AND PROJECTS OF THE AGRICULTURAL SECTOR, BY GOVERNMENT INSTITUTION AND BY CAREER AND SPECIALIZATION

Base Programs and Projects for the 1979-1983 Period

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
1. Ministry of Natural Resources			
1.1 Restructuring of the National Program for Agricultural Research	7 Agricultural Engineers 7 Agronomists 5 Agricultural "bachilleres"	7 Agricultural Economists (farm production) 7 Agricultural Engineers (Plant Production) 1 Ecologist 1 Sociologist 1 Anthroploogist 1 Specialist in Animal Nutrition 1 Specialist in Forrage Mgmnt. 1 Seeds 1 Soils 1 Irrigation 1 Entomology 1 Pathology 1 Improvement 1 Specialist in Library Science (for agricultural reporting) 1 Biostatistician 1 Statistician specialized in Rural Sampling	- Multidisciplinary approach to research. - Implementation of the focal point of the national experimental station network. - Development of a Master Plan for the development of each station. - To improve libraries and information systems. - Establishment of a farm level research team in each region of the country. - To support livestock research.
1.2 National Program for Agricultural Research - Attention to specific crop projects in various regions - Strengthening of Service - Corn and Beans Project	10 Agricultural Engineers 55 Agronomists 35 Agricultural "bachilleres".	1 Statistician specialized in design of Agricultural Experiments 2 Specialists in Extension 1 Communications Specialist 1 Agricultural Engineer in Horticulture 1 Economist	- Development of various crops, technical Assistance - Continuation of work of PREDIA upon withdrawal of experts in 1978. - Expansion of PROMYT actions on a national scope.

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
- Training and continuation of work of PREDIA		2 Agricultural Engineers specializing in irrigation 1 Specialist in Rural Development	
1.3 Program for Soil Management and Conservation (and projects for classification, conservation of soils, soil fertility and soil laboratory).	15 Agricultural Engineers 10 Agronomists	3 Soil Specialists (fertility, classification, conservation)	- Strengthening of the soil laboratory. - Attention to all regionals (they currently attend to three).
1.4 Vegetable Health - Fight against pests - Extensionist training - Extension to Quarantine Stations - Export of vegetable products - Import of insecticides - Application of insecticides	25 Agricultural "bachilleres" 5 Agricultural Engineers	1 Specialist in Entomology 1 Specialist in Plant Pathology 1 Specialist in Quarantine Legislation 1 Engineer specialized in the technical means of applying pesticides	- Installation of laboratory. - Advisory support for extensionists. - Adequate attention to quarantine. - Proper preparation for emergency situations - Everything is conditioned on an urgent supply of infrastructure (installations, vehicles, etc.), currently very inadequate.
1.5 Animal Production and Health - Coordination with extension, attention to national center of livestock, attention to Insemination center, Animal Brucellosis and Tuberculosis Project	85 Veterinary Doctors 30 Agricultural Engineers	1 Specialist in Animal Pathology 1 Microbiologist (Central Lab.) 1 Parasitologist 1 Bromatologist 7 Microbiologists (Regional Labs.) 1 Agricultural Economist 1 Biostatistician 2 Statisticians 1 Documentalist 1 Specialist in Animal Nutrition	- The goal is to provide administrative and sanitary infrastructure for the diagnosis of animal diseases, implement projects for the control and arraadication of tuberculosis and brucellosis.

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
		6 Specialists in Animal Prod. 1 Specialist in Animal Reproduction	- 6 zones have been determined, of which two are currently being attended to. By the end of the five year period all will be attended to. One central laboratory, five regional and one quarantine station will be built.
1.6 Agricultural Services - Processing, conservation, and distribution of seeds. - Agricultural mechanization program	7 Agricultural Engineers 3 Agronomists	2 Specialists in Seed Production 2 Specialists in mechanization	- A restructuring of the agricultural mechanization program is foreseen, and at this date it is impossible to give exact estimates of the specialized personnel required.
1.7 Sector Planning - Reinforcement of the office for optimum fulfillment of functions	2 Agricultural Planning Specialists	2 Specialists in Agricultural Planning 1 Specialist in the development of agricultural projects	
- Several projects regarding production, agroindustries, internal consumption, and export (peanuts, soy beans, potatoes and yucca).	2 Agricultural Engineers 6 Agronomists	1 Specialist in Business Administration 1 Industrial Engineer 1 Specialist in Marketing and Storage 1 Sociologist 10 Specialists in Citrus Fruits	
- Project for the Development of Rural Border Areas	7 Agricultural Engineers 4 Agronomists 1 Forestry Engineer 1 Veterinary	1 Specialist in agrarian production cooperatives 1 Economist 1 Adviser on campesino organization 1 Agronomist specializing in production planning	

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
1.8 Water Resources Unit - Rehabilitation of the irrigation systems in Selguapa, Flores, S.J. de Flores, Valle de Siria, Valle de Talanga, Valle de Cuyamapa, Florida, La Entrada, Valle de Quimistán, Groundwater studies in the Southern zone in the Choluteca River Basin.	2 Agricultural Engineers	5 Civil Engineers specializing in irrigation 1 Civil Engineer specializing in Water Resources 2 Geologists 2 Hydrologists 2 Civil Engineers	The execution of the Choluteca River project will generate considerable additional demand.
1.9 Several Projects for Production Development - Especially in Horticulture, soy bean, peanuts in Comayagua.	7 Agricultural Engineers	1 Entomologist 1 Plant Pathologist 1 Geneticist 1 Specialist in Vegetable Physiology 1 Specialist in Agricultural Marketing 1 Specialist in Horticulture 8 Agricultural Engineers specializing in various crops	- It is considered that these professionals, coordinated with the extension and research programs, will be able to attend to all the specific products which appear during the five year program. The base staff could be increased in accordance with the area of cultivation.
1.10 Department of Human Resources - Extension and strengthening of actions - Catacamas Project	7 Instructors 7 Promoters 6 Agricultural "bachilleres"	1 Agricultural Economist 1 Specialist in Rural Admin. 1 Communications Specialist 1 Director (without specification of degree) 1 Academic Section head (without specification of degree) 1 Specialist in Library Science 1 Specialist in Animal Production	- Complete national coverage. - Restructuring of the National School of Agriculture (ENA).

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
		9 Specialists in Plant Production 4 Specialists in Rural Development	
1.11 Renewable Natural Resources 1/ (Ecology, environment, parks, fish)		27 Biologists 4 Zoologists 10 Specialists in Information 4 Specialists (Ecology, Botany, parks, recreation) 10 Researchers (microbiology, Chemistry, Ecology, Civil Engineering, and Soils) 1 Economist 2 Specialists in Community Development 1 Ecologist	- Demand estimated by Paul Sundheimer (AID).
2. National Agrarian Institute - Project for Concentrated Rural Development - Consolidación of the reformed sector (various regulations, various crops) - Great Project for African Palm, cashew and other crops	20 Agricultural Engineers 40 Agronomists 318 Agrarian Promoters 1/	1 Agricultural Economist 5 Social Workers 3 Sociologists 1 Anthropologist 1 Irrigation Specialist 1 Soil Specialist 1 Specialist in Rural Admin. 1 Chemical Engineer 1 Industrial Engineer, specializing in African Palm oil extraction 1 Industrial Engineer 1 Project Evaluator 1 Economist specialized in Planning 1 Specialist in Business Administration	It is presumed that between 1 and 3 of the promoters will be required to have a high school (bachillerato) degree in agriculture.

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
3. Dirección de Fomento Cooperativo			
- Restructuring of the Cooperative Sector	5 Cooperative Promoters	1 Agricultural Economist 1 Specialist en Cooperative Administration 1 Agricultural Planner 1 Rural Sociologist 1 Business Administrator 1 Expert in the External and Internal Marketing of Agricultural Products	- To promote the formation of 37 large agricultural enterprises, based on the 250 agricultural cooperatives and the 1,200 pre-cooperative groups.
- * In the event the 37 agricultural enterprises are formed during the five-year period, additional demand will be generated		36 Agricultural Planners* 36 Agricultural Economists* 36 Rural Sociologists* 36 Business Administrators*	- Full operation of the 37 agricultural enterprises.
4. COHDEFOR (Corporación Hondureña de Desarrollo Forestal)			
- Teaching, training, research and informatics in immediate projects	2 Forestry Engineers	1 Industrial Engineer, specializing in Forestry 1 Specialist in Forest Management 1 Library scientist specializing in forestry information	- To deal with projects and exploitation, research and specialized manpower development. No studies have been made with respect to the demand for labor. According to a report by P.W. Sundheimer (AID), 200 professionals will be required, mostly forestry and wood usage.
5. CORFINO (National Financial Corporation of Olancho)			
- Forest exploitation for the purpose of exploiting lumber	4 Forestry Engineers	2 Electrical Engineers 3 Mechanical Engineers 1 Industrial Engineer	- Operational Stage of the Project

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INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
6. INFOP (Instituto Nacional de Formación Profesional) - Rural manpower development	15 Agricultural Engineers		
7. Banco Nacional de Fomento (BNF) Restructuring of the Bank and establishment of two institutions: 1. Banco Nacional de Crédito Agrícola 2. Instituto Hondureño de Mercadeo Agrícoa	50 Engineers	1 Specialist in the Storage of Agricultural Products 1 Transportation Specialist 1 Specialist in Internal Marketing 1 Specialist in External Marketing	Inasmuch as the restructuring has not yet taken place, no estimate is given for manpower requirements. A minimum number was estimated for the Marketing Institute based on the programmed activities. The 50 engineers are an estimate provided by the Department of Human Resources of the Ministry of Natural Resources.
8. COHBANA - Conditioning and Production in Isletas - Aguán Integral Program for Banana Development (78-84) - Other probable activities and projects	8 "bachilleres" (high school graduates)	2 Agricultural Engineers 1 Irrigation Specialist 1 Business Administrator (specializing in bananas) 1 Electrical Engineer 1 Mechanical Engineer 1 Accounting Advisor	Additional assistance to already rehabilitated zones. - Industrialization of banana by-products. - Technical assistance to producers. - Rehabilitation and development of a minimum of 5,000 areas. - Establishment of cooperatives. - Goal of 50 million boxes by 1981.
9. IHCAFE (Instituto Hondureño del Café - Strengthening of ongoing actions	25 Engineers 100 Agronomists	2 Plant improverent specialists 2 Parasitologists	- Five-year goal: to cover the entire productive area (105,000 hectares).

(9)

INSTITUTION, PROGRAM, PROJECTS	PROFESSIONALS IN THE BASIC AGRICULTURAL CAREERS	SUPPORT AND ADVISORY SPECIALTIES REQUIRED	PROGRAM GOALS AND ACLARATORY OBSERVATIONS
- Modernization of coffee growing - Coffee processing - Construction of a Coffee Research Facility (Lake Yojoa)		2 Soils 2 Extension 1 Communications 1 Project building and evaluation 3 Improvement 2 Plant Pathology 2 Entomology	- The purpose is to create a propitious environment for the fertilization and improvement of plantations. In the long run, diversification will be needed for export. In this stage the typical professionals will be: Taste experts Classification In exports and external marketing
10. Consejo Superior de Planificación Económica		1 Specialist in Farm Planning 1 Specialist in Project Evaluation 1 Specialist in Rural Development	Its actions have not been planned and it is therefore unable to provide precise estimates of its requirements for the five-year period.

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ESTIMATE OF THE DEMAND FOR COMPLEMENTARY SPECIALISTS AND ADVISORS FOR THE PRINCIPAL GOVERNMENT PROGRAMS IN THE AGRICULTURAL SECTOR FIVE YEAR PERIOD 1979-83

Area	Number of Persons
Agronomy Specialties	73
Entomology	5
Plant Pathology	5
Improvement	6
Soils	6
Parasitology	2
Horticulture	6
Seeds	3
Citrus Fruits	10
Bananas	2
Animal Production	13
Grazing	1
Irrigation	2
Various Crops	8
Statistics	5
Statistics	1
Biostatistics	2
Agricultural Export Design	1
Rural Sampling	1
Veterinary Medicine	7
Animal Reproduction	1
Animal Nutrition	4
Pathology	1
Parasitology	1
Marketing	7
Storage	2
Transportation	1
Internal	1
External	2
Agricultural	1

Area	Number of Persons
Engineering Specialties	48
Irrigation and Drainage	3
Hydrology	2
Civil (Water Resources)	1
Civil (Irrigation)	5
Mechanical	4
Electrical	3
Industrial	3
Forestry Industries	1
Palm Oil Extraction	1
Chemical	1
Farm Mechanization	2
Application of Pesticides	1
Civil	21
Planning and Development	43
Project Evaluation and Formation	4
Agricultural	5
Community Development	2
Rural	6
Regional Development	2
Agricultural Production	9
Animal Production	5
Business Administration	12
Accounting Advisory Services	1
With Banking Experience	1
Forestry	1
General	3
Cooperative	2
Rural	3
Social	22
Communications	3
Extension	5
Rural Sociology	1
Anthropology	2
Sociology	5
Social Work	5
Field Organization	1

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Area	Number of Persons	Area	Number of Persons
Information and Documentation	14		
Forestry	1		
Agricultural	1	Other	53
Animal Health	1	Zoologists	4
Library Sciences	1	Biologists	27
Information	10	Genetics	1
	-	Geology	2
Economics	18	Microbiology	9
General	7	Bromatology	1
Agricultural	11	Quarantine Legislation	1
		Ecology	3
		Botany	1
		Parks	1
		Recreation	1
		Chemistry	2
General Total	302		

Source: Survey on personnel specialized in agriculture and related fields. National Projects. Ministry of Natural Resources. Institute for Socioeconomic Research, 1977.

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ANNEX P

PLAN FOR DEVELOPMENT OF CURLA

PLAN FOR THE RESTRUCTURATION AND DEVELOPMENT OF THE REGIONAL UNIVERSITY CENTER OF THE ATLANTIC LITTORAL(CURLA)

Since last May and with the advisory services of the Interamerican Institute of Agricultural Sciences, Tegucigalpa office, a CURLA commission composed of three professors and one student, has dedicated itself to the task of drawing up a Plan for Reconstruction and Development. It has produced a document which is ready to be presented to the Govenment organisms of the National Autonomous University of Honduras (UNAH). 1/

This document provides a study of the present structure, which is explained in the organization chart which appears on the following page.

The fundamental unit of the academic structure of CURLA is the department, which is supposed to provide teaching and carry out investigations with respect to its discipline. That this is so imparts a certain stability to an institution which by law must elect its highest officers every three years, with reelection being permitted only once. This rule does not apply to department heads.

The careers themselves are administered by career coordinators who make use of departmental offers in order to fulfill the academic demands of the careers themselves.

The departments are supervised directly by the Director's Office and report to the academic sub-comission which is made up of the Director, coordinators and professors.

The administration of the institution is the responsibility of the Board of Directors made up of the Director, three professors and four students.

Up until now, CURLA has operated with four academic departments: Plan Production and Soils, Animal Production, Agricultural Engineering and Forestry.

1/ The reconstruction plan was approved by the University Board in its ordinary session on Thursday, November 17, 1977. (See TIEMPO, El Diario de Honduras, Friday, November 18 page 2.)

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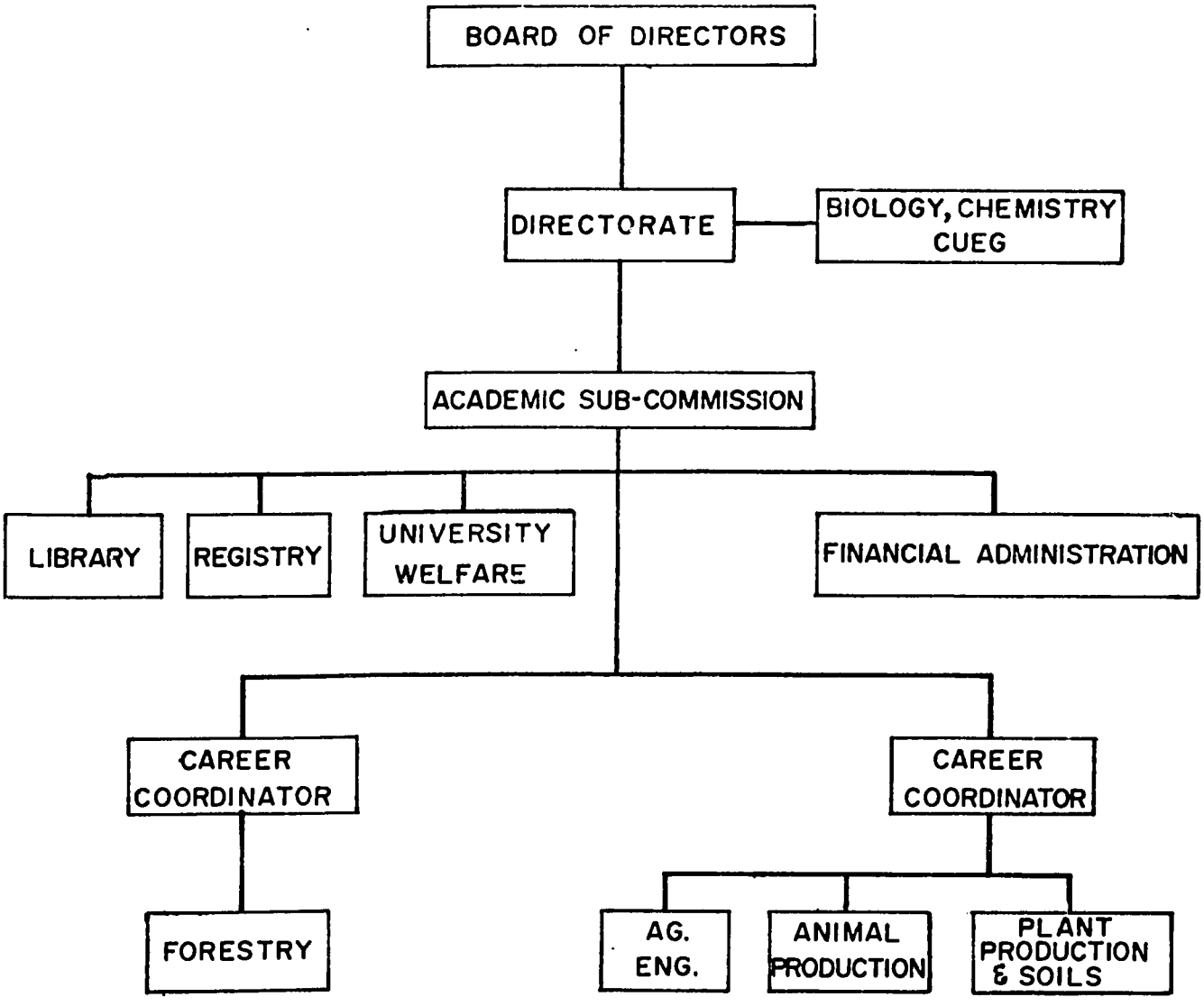
PRESENT STRUCTURE OF CURLA



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"The new academic structure for the CURLA, proposed by the Reconstruction Commission, calls for departmentalization by field of specialty in order to adapt to the general structure of the University. This plan includes the founding of new departments, the separation of departments which function jointly and the organization of the Regional Sections of the Central Departments.

This organization consists of eight (8) departments at the Center itself and eight (8) Regional Sections of the Central Departments, as follows:

Departments of the Center Itself:

1. Production
2. Plant Production
3. Soils
4. Animal Sciences
5. Agricultural Engineering
6. Forest Management
7. Forest Industries
8. Silviculture

Regional Sections:

1. Chemistry
2. Physics
3. Mathematics
4. Sociology
5. Philosophy
6. Languages and Literature
7. Biology
8. Institute for Economic and Social Research

The reconstruction plan distributes responsibilities between the Director and Sub-Director. The Sub-Director of CURLA will be in charge of supervising the functioning of the Academic Administration, Regional Sports Section, and the Coordination of Social Service and AID Program for graduates. The Director of the Center, in addition to carrying out the duties established by the regulations, will have under his responsibility as well, the direct supervision of: Financial Administration, the Regional Library Section, and the Section for University Welfare."1/

1/ Proposal for a New Academic-Administrative Structure for the Regional University Center of the Atlantic Littoral. Restructuring Commission. La Ceiba, November 1977. Page 24.

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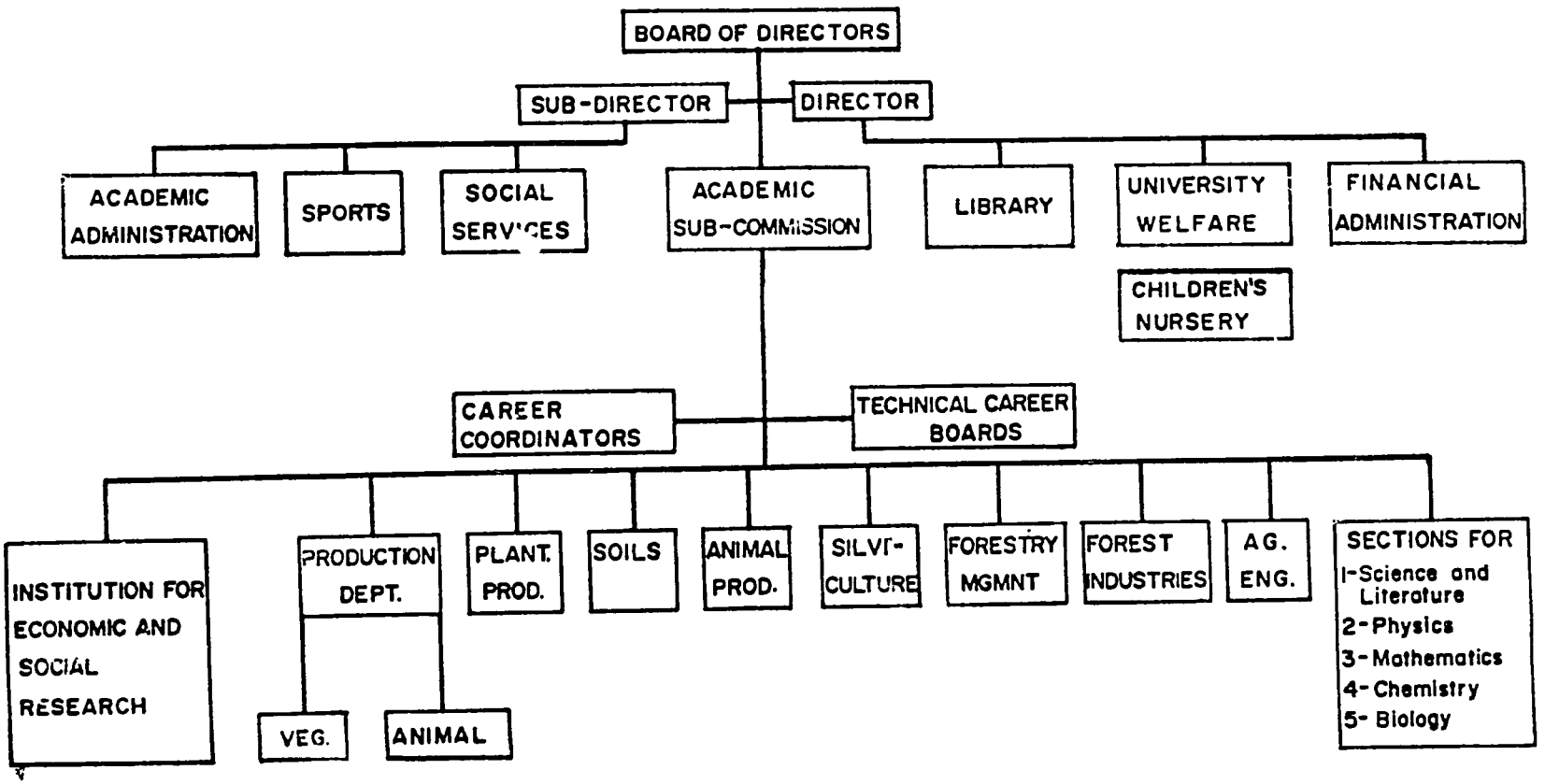
ORGANIZATION CHART FOR THE NEW STRUCTURE PROPOSED FOR CURLA



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The organization chart for the new structure appears on the following page.

The Production Department, in addition to academic and research work normally corresponding to said department, will have under its responsibility the entire agricultural production of the CURLA. The research of the other seven departmens must respond to the needs and requirements of the Production Department.

The Institute for Economic and Social Research will have, among other duties the institution's agricultural extension programs. In this way CURLA plans to become more integrated with the region in which it operates.

The sections correspond to departments run from the University in Tegucigalpa. So far, the University has not allowed the duplication of departments. This creates problems in the Centers and it is hoped that eventually the University will become a University System in which the dependencies report directly to the President of the University but with administrative and program autonomy.

The proposal for restructuration is only the first part of the Plan, which includes a development plan.

To provide an idea of the equipment and personnel difficulties facing CURLA, some sections of the Proposal are described below:

"1.3 Number of Students per School

The increase of the student population at the CURLA during the period between 1970 and 1977 is detailed in Diagram No. 1

Diagram No. 1

SCHOOL	1970	1971	1972	1973	1974	1975	1976	1977
Ag. Engineering	162	245	342	330	435	422		755
For. Engineering	8	7	6	24	27	6		158
Other Schools	10	8	18	29	5	40		62
TOTAL	180	260	366	383	467	488		975

ADAPTED FROM: University Statistical Bulletins 1974 and 1975, and information from the CURLA Registry Office.

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As can be seen, during the period from 1970 to 1975, the increase remained steady at a level of 23%. The total increase obtained in 1977 compared with 1975 is on the order of 50%. It should be noted that 1977 goes beyond all forecasts. This increase is possibly due to the prolonging of the class schedule into the night hours. It will be possible to achieve an annual rate of increase of 30% provided academic activities are not prolonged beyond the hours of the present schedule.

It is important to note the large increase of students enrolled in the school of Forestry Engineering. This thrust is presented as a consequence of the statement by the University Board indicating this to be a priority course of studies. Although the objectives of this statement were not fulfilled due to a number of factors, the increase in the student population obtained as a result of the slight increase in the number of professors teaching in the area of Forestry Engineering, is clear."

"2.5.1 General Education Plan

The course corresponding to the general studies plan are given by the University Center for General Studies (CUEG), and for this purpose, it assigns personnel to the CURLA campus. This service has been permanently deficient and the academic level of the courses given, particularly with respect to basic courses, is quite low. There has never existed a rational academic structure and the only laboratories are those for Chemistry, Biology and Physics, and they are still incomplete, except in the case of Physics, which for the foregoing reasons, is not even installed.

The number of professors giving classes under the General Studies Plan is insufficient, inasmuch as the enrollment per course frequently exceeds 250 students, and each course has only one professor, who must, at the same time, teach other classes and attend to the Laboratories.

By 1978 it is estimated that the enrollment of first year students will be 500. This indicates that, under current conditions, the CUEG will not only be unable to maintain its current level of work, but rather this level will decline even further.

In spite of the fact that the rules governing the operation of the department provide that the University department operating on a central level shall create, in the Regional Centers, the corresponding Regional Sections to provide service to the Schools requiring it, these Regional Sections have never been established, and it is considered that this is one of the main reasons that CUEG has not lived up to expectations."

"6.2 School of Chemistry and Pharmacy

The assessment presented in the previous section is applicable in every way to the service provided by the School of Chemistry and Pharmacy,

Best Available Document

which, although its section has been organized, it has not been done in accordance with the aforementioned rules, and insufficient personnel are assigned to serve the careers functioning at the CURLA."

"3.2 Installations and equipment
3.2.1 Buildings

There are two main buildings at CURLA, one containing classrooms, laboratories, cubicles and administrative offices, and the other containing the auditorium, cafeteria and library.

The first building is divided into three sections:

- Section A, containing administrative offices, cubicles, conference room, mimeograph and library, has a total area of 1,081 m^2.

- Section B, contains 4 rooms designed as laboratories which measure 8 m by 20 m each and includes a storeroom and an office. It also contains 4 classrooms measuring 8 m by 12 m each, as well as two additional storerooms and rest rooms, for a total area of 1,952 m^2. It is worth mentioning that in this wing, only the chemistry laboratory, normally set up to handle 40 students, is currently operating. The other three rooms set aside for use as laboratories are being used as classrooms.

-Section C contains four rooms for laboratories measuring 8 m by 20 m each, as well as two classrooms measuring 8 m by 12 m each, in addition to storerooms, offices and rest rooms. This section covers an area of 1,132 m^2. 'The Soils and Biology laboratories operate in this section, both of which are normally equipped to handle 40 students. The remaining two rooms designed as laboratories are currently being used as classrooms.

The area covered by the three sections is 4,169 m^2.

The second building covers an area distributed as follows:

Auditorium	703 m^2
Library	524 m^2
Cafeteria	524 m^2
TOTAL	1,751 m^2

The total area covered by the two main buildings is 5,290 m^2.

The capacity of the six classrooms currently being used at the CURLA is 50 students each.

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It is hoped that when the new building, with a total of 10 classrooms, and a total student capacity of 880, becomes available, the remaining laboratories, which up until now have been functioning as classrooms, as previously indicated, can be put into service.

It is estimated that the classroom building will solve the problem of physical space until the year 1980.

Laboratory Equipment

The problem of space for the laboratories is augmented by the scarcity of equipment for the laboratories currently operating at the CURLA.

These are the laboratories for Soils, Chemistry and Biology.

The Soils Laboratory, with a current capacity for 40 students, has equipment only for the analysis of organic material, pH, electric conductivity, and soil texture and structure. Due to the lack of proper equipment, macronutrient analyses such as N, P and K cannot be carried out.

The Laboratory for general and analytical chemistry is also ill-equipped and its capacity has already been exceeded by the large number of students enrolled at CURLA. In addition, the Center has no properly equipped laboratory for Organic Chemistry and Biochemistry.

Likewise, there are no laboratories at CURLA to carry out exercises in Entomology, Plant Pathology, Genetics, Biometry, Seed Technology and Vegetable Physiology; in the area of Forestry Engineering, the deficiency in laboratories is total."

After completing the study, the Commission reached 16 conclusions, the most relevant of which are transcribed below:

"4.7 The teaching staff at the Center is insufficient to carry out teaching, research and extension activities."

"4.8 There are very few specialized professors and the majority of these are visiting professors."

"4.9 To a large extent, the shortage of teachers and the excessive number of students per course necessitates the use of archaic teaching methods."

"4.11 Practical teaching is the exception rather than the rule."

"4.13 There are no research or extension programs which allow the University to fulfill these basic roles."

"4.15 There are no irrigated areas under cultivation, for which reason the yields obtained in the production of basic grains and pasture are low."

"4.16 CURLA is not equipped with the laboratories indispensable for the teaching of Agricultural and Forestry Sciences."

The Commission proceeds then to make the following recommendations:

"5.1 The University must be endowed with an efficient irrigation system, in order that this system might be used for purposes of teaching, research, extension and production."

"5.2 The University must be endowed with the laboratories indispensable for the teaching of Agricultural and Forestry Sciences."

"5.3 The number of professors must be increased, both in the fields of agronomy and forestry and in the area of general studies."

"5.4 The University must train its national teaching staff, since to continue to rely on visiting professors implies a large economic expenditure and academic instability."

"5.5 It is imperative that CURLA be endowed with a new academic/administrative structure which will streamline its teaching, research and extension work, in order to comply with the resolutions of the First Meeting of the CURLA University Commission."

CURLA has mobilized toward the initiating of the Plan for Restructuring and Development by making concerted efforts for the authorization of the new proposed structure. Previous mention has been made of the faculty development plan which has begun and which calls for a minimum of five members of the teaching staff to be receiving specialized training abroad at all times.

The laboratory and equipment requirements, both for the basic sciences as well as for the professional courses, are expected to be met through loans.

CURLA is the Honduran institute of higher learning in the fields of agriculture and forestry. The noteworthy increases in enrollment and the interest of the Director and the faculty in presenting a development plan and carrying through with it demonstrate the existence of a strong demand for career studies and the fundamental manpower necessary to develop them.

An action plan is needed in order to endow CURLA with:

1. A faculty sufficient in number and qualifications.

2. Laboratories and equipment for the basic sciences and for the professional courses in both careers. It is very possible that the construction of new buildings for laboratories will not be necessary once the new classroom building is in operation - with 10 classrooms with a capacity of 88 students each - inasmuch as six rooms originally designed for laboratories and which have never been equipped as such, will become vacant.

3. A better library. The building exists. What is required is an expansion of the present library and 2 training of personnel. The area currently used for the cafeteria, 524 m^2 as indicated in paragraph 3.2.1, will be used for the expansion, with the cafeteria being moved to another more adequate locale, already being planned for construction.

4. Irrigation equipment. The project is costly since water must be brought from a distance of three kilometers.

5. Student dormitories. La Ceiba is not a large city and besides, it is located 12 kilometers away. Part of the students can live on campus.

6. Residences for the highest officers of the institution, including the farm manager.

If this were to be achieved, CURLA could supply, in a few years, the manpower needed by the country on the highest professional level. If this were the case, the most outstanding graduates from CURLA would be the indicated candidates to continue on with graduate studies abroad and thus satisfy the demand for specialized personnel which is beginning to appear and which, as more and more activity takes place in all phases of agriculture, will continue to increase. The agronomist has a sufficiently wide scientific base which makes him a versatile professional and allows him to study a variety of subjects on the graduate and undergraduate levels. For example, an agronomist can obtain a bachelor's degree in agricultural engineering in two years, or he can study for a master's degree in forestry sciences, ecology, fisheries, etc. The CURLA authorities consider that, if their development plans meet with success, within a few years, thought may be given to offering options within the career of agronomy and later to specializations. They likewise feel that courses in marine biology and fisheries could be developed.

It has been calculated that in order to carry out the plan for permanent improvements at CURLA, an investment of Lps. 8,000,000 will be required over the next five years.

During visits to CURLA it has been corroborated that the conditions described in the report are true to description.

I recommend that this Plan for the Restructuring and Development of CURLA, for which the present document represents merely a first step as far as development is concerned, receive maximum attention with respect to areas which must be given priority attention.

ANNEX Q

AN EVALUATION OF THE PROBABLE NUTRITIONAL IMPACTS OF PRESENT AND PROPOSED AGRICULTURAL POLICIES AND PROGRAMS

I. Introduction and Summary

Introduction - This report was prepared by Dr. George V. Poynor, under Contract No. AID/522-T-416, and is the result of an evaluation of the probable impact of present and proposed agricultural policies and programs of the nutritional status of the Honduran population. Findings are based on work done in a visit to Honduras during the period July 13 - 25, 1978.

The scope of work for the assignment included the following tasks: (1) evaluate, in macro term, past and prospective performance of the Honduran agriculture sector in meeting the country's food requirements; (2) identify the nutritionally at risk population, (3) identify current and proposed agricultural policies and programs which bear on the nutritional status of the population, and make judgements concerning the impacts of these on the nutritionally at risk population; and (4) recommend agricultural policies and strategies to improve nutritional status in Honduras.

Special thanks are due the following people for their assistance in various aspects of this assignment: Bill Janssen; Leonard Kornfeld; Luis Zelaya; Concepción Mejía; John Kelley, Jim Leo; Isabel Cooper and Nelly Kearn.

Summary, Conclusion and Recommendations - Honduras faces serious nutritional problems, with widespread effects that impact the lives of great majority of the population, both urban and rural. The nutritionally at risk population 1/ comprises more than 60 percent of all urban families and more than 90 percent of all rural families, for a total of over 80 percent of the total Honduran population.

The principal nutritional problems in Honduras, are protein-calorie malnutrition and a series of other nutritional deficiencies, caused by dietary inadequacies and/or the presence of infections which prevent proper utilization of food consumed, or which radically increase the body's nutrient requirements. A study of food consumption in Central America undertaken in 1971 and 1972 by GAFICA, and FAO advisory group attached to the Secretarías of the Central American Common Market, found that in 1970, the lower 50 percent of the Honduran population in income terms, consumed less than 1,500 calories per person per day, an average deficit of over 700 calories per person per day. The same group also consumed a per capita average of only 33.3 grams of protein daily. Projections of food consumption levels to 1980 and 1990, made as part of the study, show no significant improvement in these levels of protein and calorie consumption by the lower half of the population, unless high rates or real economic growth are realized, along with considerable redistribution of income.

1/ See page 14 for definition of the nutritionally at risk population.

The main casual factor associated with malnutrition in Honduras is low income. Average per capita income is less than $400 per year. Sixty-four percent of urban families and over 90 percent of rural families receives less than $250 per capita annually in income. Incomes among the poor are being rapidly eroded by inflation, which has increased markedly since 1972, and which will probably reach double-digit levels this year. Food prices have risen far more rapidly than have the prices for other consumption items; and the prices of agricultural inputs such as seeds, fertilizers, and pesticides have risen very rapidly as well. On the other hand, producer prices for small farm agricultural crops have grown at a rate of less than the general index of inflation in recent years.

A comprehensive analysis of the nutritional impacts of GOH policies is not possible in the time allotted for this study, and given the nature of the data base. But certain conclusions, some of them admittedly tentative, can be drawn:

1. The nutritional impact of GOH price controls on consumption items of basic necessity is not completely clear; but based on what is known for Honduras, and also from other countries' experience with similar policies, the net effect is probably negative.

2. Agricultural policies and programs are currently being directed at increased incomes for the rural poor, in particular the small farmer and the members of the agrarian reform sector, and inasmuch as this is accomplished, the nutritional well-being of the rural poor will be improved.

3. GOH policy is to attain self-sufficiency in most basic grains, in fruits and vegetables, and in oilseeds, over the life of the 1979-1983 agricultural plan. This policy is being addressed with programs which involve production of these commodities on small farms, cooperatives, and agrarian reform settlements, the families of which form the bulk of the nutritionally at risk population in rural areas. Increased production on these farms will mean increased incomes to the families that operate them, and therefore better nutrition.

In addition, increased production of basic foodstuffs will probably help to stabilize prices of food items, and this will have positive impacts on the nutritional status of the nutritionally at risk population in urban areas.

4. GOH programs to move livestock operations that currently use state land suitable for the production of more intensive crops, and to replace them with collective farms composed largely of landless laborers, should have positive nutritional impacts, with the level of the impact largely a function of the increase in the incomes of the families moved to these lands.

With respect to the AID strategy in agriculture, the following conclusions can be drawn:

1. The AID target group and the nutritionally at risk population in rural areas are almost the same population.

2. The areas in which AID envisions support which will provide direct nutritional benefits to the target group are small farm credit, small farm infrastructure development, intermediate technology, and small farm nutritional improvement activities. There is no question that these activities, if done well, will result in improvement in the nutritional well-being of the target group.

3. Other areas of support indicated in the AID strategy -- human resources and organizational development, and agricultural research -- have less direct benefits. The aim behind these activities is to widen present bottlenecks which limit the movement of resources in GOH programs to larger numbers of the target group, and to increase, over time, the number of alternatives open to the small-scale producer. While the rationale appears to be in consonance with improved nutritional well-being, nutritional benefits are not directly calculable, and therefore the conclusion of a positive nutritional benefit must be highly tentative.

It is impossible for someone to drop in for a couple of weeks and lay out an optimal set of agricultural policies and programs for improving nutritional status. The problem is highly complex, deserves serious study, and also deserves to be part of the continual dialogue and debate within the Honduran decision-making apparatus. There are indications that this has begun, with the creation of SAPLAN as a multi-sectoral nutritional analysis and planning body. What is presently lacking is a body of knowledge which permits the likely nutritional impact of a present or proposed agricultural policy or program to be estimated, other than in a very general way. The Office of Sector Planning of the Ministry of Natural Resources has begun, in recent months, to gather in a systematic way some of this kind of information. This activity deserves further support, and should be part of the AID strategy.

II. The Nutrition Problem in Honduras

Nature and extent of the problem. The nutrition problem faced by Honduras is a serious one, with widespread incidence of protein-calorie malnutrition as well as other nutritional deficiency diseases. Surveys conducted by the Honduran Ministry of Public Health and by the Institute of Nutrition of Central America and Panama (INCAP) show that between 75 and 85 percent of all children under the age of 6 years, suffer from some degree of protein-calorie malnutrition. Ninety percent of all children admitted for treatment to pediatric hospitals and clinics in Honduras suffer from malnutrition.

INCAP has studied the problem of malnutrition in Central America extensively for many years. In addition to high quality scientific research concerning the immediate biological and chemical causes of malnutrition in the individual, INCAP has conducted a number of nutritional status surveys within the region. The result of these efforts is that a great deal is known about the nature, extent and severity of the nutrition problem in Central America.

The principal nutrition problem in the region is protein-calorie malnutrition, frequently abbreviated as PCM. There are, in addition, to PCM several other nutrition problems of consequence, among them chronic deficiencies of vitamin A, riboflavin, iron, folic acid, and iodine. These deficiencies may arise even when the diet is adequate in quantity of food, and represent problems of dietary quality.

As in the whole of Central America, the major nutrition problems in Honduras are: (1) high levels of protein-calorie malnutrition; and (2) deficiencies of certain vitamins, and trace minerals, particularly vitamin A, riboflavin, iron, folic acid, and iodine. In 1965-67, INCAP conducted nutritional status surveys in all five Central American republics and in Panama. The survey of Honduras showed that its nutritional status was among the lowest of the six countries. Among children under six years of age, the most vulnerable segment of the population to nutritional problems, 76 percent suffered from some degree of protein-calorie malnutrition, with 45 percent in Grade I on the Gomez Scale, 1/ 29 percent in Grade II, and 2 percent in Grade III.

1/ The Gomez method of classifying infant and child malnutrition, has become the standard method for determining the severity of PCM. It is based on individual deviations from normal weight for age. A child under the age of 6 years whose weight is within 10 percent of what is considered normal for his age (in months) is considered to be normal. One, whose weight is between 10 and 25 percent below normal weight for his age, is classified in Grade I, and is said to suffer from 1st degree malnutrition; one whose weight is between 25 and 40 percent below the norm for his age, is classified in Grade II, and is said to suffer from 2nd degree malnutrition; and those children whose weights for age fall more than 40 percent below normal weight for age are in Grade III, or suffer from 3rd degree malnutrition. The terms moderate, moderate-to-severe, and severe are sometimes used to describe the Gomez Grades, I, II, and III, respectively.

Subsequent surveys have been conducted in Honduras by the Ministry of Public Health (MSP). They have demonstrated the following levels of malnutrition among children under the age of six in rural area: 43 percent in Grade I; 32 percent in Grade II; and 6 percent in Grade III; for a total of 83 percent of children surveyed malnourished. The results of these latter surveys are not strictly comparable with the results of the INCAP survey. The INCAP measurements were taken on children in cabeceras municipales, and in the major city, San Pedro Sula, in a sample selected to be representative of the entire Honduran population. The MSP studies were conducted on a considerably larger sample population than the INCAP survey, but were drawn from fourteen rural villages and communities in seven of the Departments of Honduras. In spite of this problem of comparison, however, the Honduran national nutrition planning group, SAPLAN, concluded in its 1976 assessment of the nutritional situation that malnutrition had increased in the period subsequent to the INCAP survey.

These statistics and others place Honduras among the countries of the world most seriously affected by malnutrition. The World Food Council's list of countries that face severe food problems, for example, includes only four countries of the western hemisphere: El Salvador, Guyana, Haiti, and Honduras.

The effects of malnutrition. The effects of malnutrition in Honduras are pervasive and costly. Infant mortality, according to official estimates, is 117 deaths for each 1,000 live births, which places Honduras among the countries with very high rates of infant mortality. In rural Honduras the official statistic for infant mortality is 127.2, and is acknowledged by Honduran health and nutrition planners to be underestimated because of problems or registration of infant deaths.

Ninety percent of all children admitted for treatment to pediatric hospitals or clinics in Honduras, for whatever causes, suffer from some degree of malnutrition. The great majority of illnesses which result in infant and child mortality, are nutrition-related, in the sense that these same illnesses, in the well-nourished child, are either mild or routinely treated; whereas in the malnourished child they prove serious, and often fatal.

Malnutrition among women of childbearing age affects their own health as well as that of their infant children. A considerable percentage of maternal deaths associated with childbirth in Honduras, have nutritional anemias as a contributing factor. Anemia and other maternal nutritional disorders are also factors in the low birthweights of children, and infant mortality is significantly higher among children of low birthweight. Chronic calorie shortages in the diets of lactating women, lead to problems in breast feeding, and increase the probability

of illness in the mother. These conditions, in turn, have deleterious effects upon the nutritional status, and health, of the infant.

Malnutrition affects the ability of the members of the economically active population to sustain themselves and their families. Research undertaken by INCAP, and aimed at a better understanding of the relationship between nutritional status and work peformance, has shown that a daily supplement of 600-900 calories in the diets of low income adults, produces a surprisingly sharp increase in work stamina. Turning this around, we may conclude what many observers have long held: that chronic shortages of food energy (calories) in the diets of the poor lead to decreased work peformance, and therefore, to overall reductions in labor productivity.

The causes of malnutrition. We have said that the existence of malnutrition in the individual stems from one or both of conditions of dietary inadequacy and an inability on the part of the body to utilize properly the food which is in fact consumed, because of the presence of infectious disease. Both of these conditions have as their primary cause low income. In the case of inadequacy of food intake there are other factors which contribute, as well. For example, food habits generally play a significant role, especially with respect to the amount and quality of food received by women and young children within the family. The purchasing power of a family's income affects its level and quality of food consumption, and purchasing power is conditioned by the prices of food and other consumption items.

The ability of the human body properly to utilize nourishment taken, is primarily a function of the frequency and duration of infectious illness within the body. Both frequency and duration of illness are related to the base-line nutritional status of the individual: the poorer the nutritional status, the more frequently does the body succumb to illness, and the longer the illness contracted endures. Frequency of illness is also conditioned by the level of preventive health care which the individual enjoys, including potable water and adequate means of disposing of human and other wastes that carry or nourish infectious agents. The duration of illness, apart from its relationship to base-line nutritional status, is also related to the existence of, and accessibility to, appropriate curative health services.

III. Analysis of Factors Affecting Nutritional Status

Population. Current population in Honduras is just under 3.5 million, with approximately 34 percent of the people living in areas classified as urban, and 66 percent living in rural areas. The latest population projections made by CONSUPLANE, which revise the earlier projections produced by CELADE, postulate a population growth rate

of 3.5 percent per year through atleast 1985, when the population is expected to be about 4.4 million, with an urban/rural split of 37 percent/63 percent.

Income. Recent income statistics are obtainable from several sources in Honduras. Figures derived from the national accounts show average annual per capita income to have been approximately $365 in 1977, up about 8.1 percent, in nominal terms, from the 1976 figure of $339.

In Table 1. below, income estimates for the rural population are given, based on data obtained from a series of surveys conducted in 1976 and 1977.

Table 1

Average Annual Per Capita Income in Rural Honduras, by Sub-Sector

Sub-Sector	Percent of Rural Families	Percent of Land	Average Annual Per Capita Income
Agrarian Reform	10.03	6.6	$ 106
. Asentamientos	-	-	100
. Cooperatives	-	-	131
Traditional	42.91	40.0	135
Landless	47.06	-	50
Commercial	-	53.4	-

Source: ATAC and AID surveys, 1976 and 1977

Income distribution. Data on the national income distribution are somewhat out of date, being based on an income and expenditure survey carried out in 1967-68. Table 2. and Table 3. below summarize the findings of this study. Income distribution figures for the traditional farm sector are available from the surveys referred to above, and their findings are shown in Table 4. It should be mentioned that the rural income estimates obtained in these recent surveys were found by valuing on-farm consumption in producer, rather than in consumer prices.

TABLE 2

HONDURAS: Distribution of Urban-Rural Income, by Narrow Income Levels, 1967-68

Thousands of Lempiras

Income Levels	URBAN ZONES			RURAL ZONES			WHOLE COUNTRY		
	No. of Families	No. of Persons	Total Income	No. of Families	No. of Persons	Total Income	No. of Families	No. of Persons	Total Income
Under 500	6.963	31.852	2.349	175.000	852.614	50.042	181.972	884.466	52.391
500 - 1.000	16.026	86.278	12.008	72.025	462.794	48.716	88.051	549.072	60.724
1.000 - 1.500	17.436	93.342	21.105	18.743	110.882	20.420	34.181	204.224	41.525
1.500 - 2.000	13.480	76.537	23.247	6.634	49.280	11.278	20.114	125.817	34.525
2.000 - 2.500	14.033	88.011	31.740	6.634	53.387	14.923	20.667	141.398	46.663
2.500 - 3.000	7.818	48.815	21.121	4.422	36.960	12.114	12.240	85.773	33.235
3.000 - 3.500	7.367	50.838	23.475	3.791	27.167	12.506	11.158	78.005	35.991
3.500 - 4.000	4.736	30.792	17.633	316	1.895	1.259	5.052	32.687	18.892
4.000 - 5.000	8.956	57.335	40.346	632	4.107	2.763	9.588	61.442	43.109
5.000 - 6.000	5.572	38.176	30.433	1.263	9.793	6.891	6.835	47.959	37.324
6.000 - 7.000	3.514	26.119	22.803	948	5.370	6.145	4.462	31.489	28.948
7.000 - 8.000	1.807	13.529	13.500	-	-	-	1.807	13.529	13.500
8.000 - 9.000	1.459	9.650	12.414	316	3.475	2.573	1.775	13.125	14.937
9.000 -10.000	1.783	11.910	16.858	-	-	-	1.783	11.910	16.858
10.000 -12.000	1.919	12.243	20.829	-	-	-	1.919	12.243	20.929
12.000 and over	5.362	43.762	95.969	-	-	-	5.362	43.762	95.969
TOTAL	118.233	719.189	405.831	288.733	1.617.724	189.630	406.966	2.336.913	595.461

SOURCE: National Economic Planning Council, Global Sector, La Distribución del Ingreo en Honduras, Tegucigalpa, 1973

Table 3

Distribution of Family Incomes by Broad Ranges 1967-68

	URBAN				RURAL			
	Families		Income		Families		Income	
Income Range	%	Cum.%	%	Cum.%	%	Cum.%	%	Cum.%
LOW: under L.2000	45.7	45.7	14.5	14.5	93.7	93.7	68.8	68.8
under L. 500	5.9	----	0.6	----	60.6	----	26.4	----
L.500 - 2000	39.8	----	13.9	----	33.1	----	42.4	----
MEDIUM: L.2000 - 7000	44.0	89.7	46.1	60.6	6.2	99.9	29.8	98.6
HIGH: Over L.7000	10.3	100.0	39.4	100.0	0.1	100.0	1.4	100.0

Source: CONSUPLANE

Inflation. Income levels in Honduras are being steadily eroded by inflation, which is increasing at an increasing rate. Historically, rates of inflation in Honduras have been extremely low, but the decade of the 1970s has seen inflation become a factor of real significance. Between 1966 and 1973, the General Index of Consumer Prices increased at an average annual rate of 2.7 percent. Between 1973 and 1977, this rate had grown to an annual figure of 7.5 percent; and it appears, based on monthly movement of the index in late 1977 and early 1978, that in 1978 inflation will reach double-digit levels.

The General Index of prices understates the impact of price increased on the poor.. It is based on middle income consumption patterns, for which roughly 40 percent of income is spent on food, and the other 60 percent for non-food consumption items. The poor, on the other hand, spend 80 percent or more of their incomes on food. The significance of this is that food prices have been increasing much more rapidly in recent years than have the prices of non-food consumption items. While the General Index rose by 8.6 percent between February 1977 and February 1978, food prices rose by 12.4 percent. This means that non-food items experienced a price rise, as measured by the General Index, of only about 6 percent, or at less than half the effective rate of food prices.

Both low income urban and rural families are affected strongly by inflation, but in slightly different ways. Urban consumers must purchase all of their food and other consumption goods at retail prices, and the most realistic alternative of the urban poor in the face of high inflation rates is to lower their already precariously low standards of diet.

TABLE 4

Distribution of Net Farm Income by Narrow Income Ranges, 1976-77 Farm Surveys

Income Range	Number of farms in sample	Percentage of farms	Cum. Percentage of farms
L. 0 - 500	883	42.6	42.6
500 - 1000	423	20.4	63.0
1000 - 1500	247	11.9	74.9
1500 - 2000	170	8.2	83.1
2000 - 2500	102	4.9	88.0
2500 - 3000	79	3.8	91.8
3000 - 3500	37	1.8	93.6
3500 - 4000	29	1.4	95.0
4000 - 4500	21	1.0	96.0
4500 - 5000	15	0.7	96.7
5000 - 5500	12	0.6	97.3
5500 - 6000	12	0.6	97.9
6000 - 6500	4	0.2	98.1
Over L. 6500	39	1.9	100.0

Source: ATAC and AID 1976-77 Farm surveys.

NOTE: The total of 2.073 farmers included in these surveys cover traditional family farm and do not include cooperatives or asentamientos. The ATAC survey, which covered several regions of the country, included farmers of under 20 Ha. The 1977 AID farm survey included farmers of under 35 Ha. The aggregate sample is reasonably representative of the entire country.

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Rural families purchase only about 25 or 30 percent of their food at retail prices, and produce the rest for on-farm consumption. They tend, however, to pay higher prices for this purchased portion than do urban consumers. A further inflationary effect is felt by those who use agricultural inputs, such as seeds, fertilizers, chemicals, etc. The prices of these agricultural inputs have been increasing at an average annual rate of over 16 percent in the period 72-77.

Producer prices for basic grains available from the Central Bank do not reflect the rates of growth that inflationary pressures and observed high rates of increase of consumer and wholesale prices would lead one to expect. Table 5 below gives these average annual prices together with their average rates of growth for the period 1972-1977.

TABLE 5

Price Growth for Basic Grains, 1972-1977

(Lempiras per Quintal)

Year	Beans	Corn	Sorghum	Rice
1972	17.00	6.00	5.45	22.45
1973	17.75	6.50	5.50	22.50
1974	18.50	7.00	6.25	23.25
1975	19.05	8.25	6.25	24.25
1976	19.50	8.50	6.50	25.00
1977	20.50	10.00	7.75	27.27
Average Annual rate of growth 1972-1977	3.8%	10.7%	7.3%	4.0%

Source: Central Bank of Honduras

Food Consumption. The most recent national food consumption estimates for Honduras, were prepared in 1971-72 by GAFICA (Grupo Asesor de FAO para la Integración Centro-Americana), an FAO technical advisory group attached at that time to SIECA, the Secretariat of the Central American Common Market.

GAFICA compiled food balances, segmented by income group, for every country in Central America, using an innovative method. This method improved by many times the value of food balance sheets as a nutrition planning tool.

The food balances compiled for Honduras, show that the lower 50 percent of the population, in income terms, consumed a diet in 1970 that contained a daily average of 1,465 calories and 33.3 grams of protein. The calorie figure represents a daily food energy deficit of over 700 calories.

GAFICA performed, as part of this study, projections of food consumption levels for 1980 and 1990, under different sets of assumptions concerning rates of economic growth and re-distribution of income. These projected levels, for the lower half of the population, showed no significant improvement in calorie and protein consumption, except under assumptions of high real rates of economic growth and considerable re-distribution o income. The results of these projections are shown in the table below.

Table 6

Projected Levels of Food Consumption for the Lower Half of the Honduran Population, in Income Terms

GAFICA, 1972

Type of consumption	Base year 1970	1980	1990
Hypothesis I. Low economic growth, no change in income distribution			
Total Protein consumed (gms/day)	33.3	37.0	40.4
- Animal protein	6.4	8.1	10.1
- Vegetable protein	26.9	28.9	30.3
Total calories (kcal./day)	1464.6	1605.8	1708.2
- Animal sources	127.3	154.5	192.1
- Vegetable sources	1337.3	1451.3	1516.1
Hypothesis II. High economic growth, change in income distribution.			
Total Protein consumed (gms/day)	33.3	54.0	68.0
- Animal protein	6.4	11.4	18.3
- Vegetable protein	26.9	42.6	49.7
Total Calories (kcal./day)	1464.6	2310.1	2787.8
- Animal sources	127.3	212.7	335.0
- Vegetable sources	1337.3	2097.4	2452.8

Source: GAFICA, 1972.

The nutritionally at risk population. The target group for national policies and programs aimed at nutritional improvement should be the "nutritionally at risk population." This is defined to be that segment of the population that lives continually on the brink of malnutrition, and for whom relatively minor changes in income, food prices, health status, family size, or environmental conditions, can create not inconsiderable nutritional impacts. Within this population, we can expect a high percentage of the members to be experiencing malnutrition at any given time. The most visible effects of this malnutrition, will be manifested in the most vulnerable segments of the nutritionally at risk population, which experience has shown to be infants, young children, and pregnant and lactating women.

Since income is the single most important determinant of nutritional status, identification of the nutritionally at risk population should logically being with an analysis of income and the effect of income on food intake. In order to accomplish this, we need to know, in addition to the facts already shown above, what constitutes the least cost diet that can be considered to be adequate, in order that we can determine the minimum cost of food to sustain a reasonable level of nutrition in the individual.

INCAP has studied this problem, and has produced a series of least cost, adequate diet studied for the various Central American countries. These diets take into account the economic, cultural and social factors which govern dietary patterns. The latest such study for Honduras was based on prices and food availabilities for the year 1975. This least cost adequate diet has been valued at 1977 prices as part of the present work, in order to see what its cost would have been in that year. Based on a family of typical size and structure, the cost of the INCAP least cost diet in 1977 would have been about $200 per capita. If we assume that food costs only represent 80 percent of all family expenses, for a low income family, who might be likely to consume a diet similar to this one, then the per capita annual income necessary to consume the INCAP least cost adequate diet would have been $250 in 1977.

The foregoing calculation assumes that all food is purchased at average retail prices for 1977. Thus for urban dwellers, it is safe to assume, that $250 per capita annual income can be used as a criterion for determining the nutritionally at risk population. There may in fact be families some of whose members are nutritionally ar risk, but who enjoy higher income that this, because of an inequitable distribution of food resources within the family.

It is a little more difficult to apply this dietary criterion to the rural population, for two reasons: (1) part of the diet, particularly certain tree and root crops, are obtained in rural areas at almostno cost; and (2) real income studies available for this analysis have

valued food consumed on the farm at producer, rather than at consumer, prices. A rough estimate of the income measured in this way, that is necessary in order to consume the least cost adequate diet can be made, however, by adjusting the above income figure of $250 to account for the price differences mentioned here. This done, we find that a per capita income of roughly $180, in 1977 prices, is required. This corresponds, based on a family size of 6 persons, to an annual family income of about $ 1080.

It should be noted, that the income figures arrived at here to define a nutritionally at risk population should not be used as target figures. They represent the absolute minimum income necessary for adequate nutrition, and do not include an estimate for resources to be put to productive use, as would certainly be needed in rural areas.

The above estimates, although precise, are not totally accurate because of problems inherent in the data base. But neither are they crude, and while they may in reality overstate or understate the income required for minimum adequate nutrition, the probability that they do so, in a significant way, is low. In addition, these figures are entirely consistent with esimates arrived at in entirely different ways, as we shall see.

By referring to statistics shown in Table 2., concering the distribution of income in Honduras, the above measures permit us to obtain estimates of the size of the nutritionally at risk population. - For urban dwellers, the number of families whose annual income falls below $250 per capita represents 64 percent of the total urban population.

The more recent income distribution figures obtained from the recent farm surveys for the rural sector, demonstrate that 86.1 percent of the farm families in the traditional sector, earn less than the $180 determined to be necessary for minimum adequate nutrition. Given that this segment of the rural population earns the highest average income of any of the segments identified in this assessment, it should be safe to say that the percentage of families in the reform sector, who belong to the nutritionally at risk population is probably at least as large as 86.1 percent. Ad the excessively low incomes of the landless laborers, argue that nearly 100 percent of them are in the nutritionally at risk group. Such assumptions, would lead us to conclude that approximately 92 or 93 percent of the entire rural population belongs to the nutritionally at risk population.

AID has established a figure of $150 per capita, in 1969 prices, as a general indicator of the "poverty line." In order to translate this figure into 1977 prices for Honduras, and thus be able to compare it with the ones arrived at above, we need to apply average rates of inflation for the period 1969-1977. Low income families in Honduras

have experienced an average rate of inflation of nearly 7 percent in this period, which means that the $150 poverty line amount in 1977 dollars becomes approximately $255 for low income Honduran families. This figure is quite close to the $250 per capita figure arrived at above for urban dwellers.

We note a further consistency between the figures given here and the data concerning the incidence of malnutrition among children under 6 years of age. We have said that about 90 percent of the rural population and over 60 percent of the urban population belong to the nutritionally at risk population. Note that nutritional status surveys have shown that about 83 percent of rural children under six are malnourished, and between 55 and 60 percent of urban children in the same age group are malnourished.

IV. National Agricultural Policies and Programs

The great bulk of GOH agricultural policies and programs are aimed directly at increasing incomes of the rural poor, and to the extent that they are able to achieve this, they will improve nutritional status among the target population.

Current policies are aimed at self-sufficiency within the upcoming five years (1978-1983) in most basic food commodities which are produced in Honduras, with additional emphasis on increasing exports in such crops as beans, citrus, cashew nuts, canteloupe, and pineapples, which are grown either on traditional farms or within the agrarian reform sector.

A policy of self-sufficiency in basic food crops, together with some means for assuring seasonal stability of prices, should have beneficial impacts on both rural and ruban nutrition.

The Honduran Government is also increasing its efforts to provide land to landless laborers, who have the lowest incomes of any segment of the population. One method being used to accomplish this is through the transfer of livestock operations which utilize state-owned lands that are suitable for crop farming, and to replace these with collective farms composed largely of landless laborers. Operations of this kind can have a significant impact upon the nutritional status of the landless laborers, provided, of course, that the lands utilized for this purpose are really suitable for growing food crops.

Irrigation, drainage and flood control programs being developed by the GOH, appear to hold promise for increasing productivity of land resources, and this should mean increased rural employment and increased incomes for the rural poor.

V. The AID Strategy

The AID target group. AID's chosen target group for Honduras, is very nearly identical with the rural nutritionally at risk population, as we have seen. AID program activities which increase incomes within this group, will be focused in the most direct manner on improving nutritional well-being. The greatest marginal improvement in nutritional status can probably be made through investments which increase the incomes of the landless laborers. Substantial nutritional improvement should also be possible through activities which permit the small farmer to be more productive.

Strategy Elements with direct Nutritional Benefits: The elements of AID's envisioned strategy which can provide direct impacts on target group nutritional status are small farm credit, small farm infrastructure development, applications of intermediate technology, and small farm activities aimed specifically at nutritional improvement.

Analytical work being done in the Office of Sector Planning of the Ministry of Natural Resources, indicates that many small farmers may no be able to use effectively their land and labor resources because of inadequate production capital. This is borne out by other studies undertaken as part of the agricultural assessment. Small farm credit can expand the productivity of these resources, with increased incomes and improved nutritional status as a result.

The small farm infrastructure element, which emphasizes access roads and local storage, can likewise address important nutritional constraints. Because of a lack of access to markets during seasons when roads are not passable, many small farmers suffer considerable incomes loss. Because of inadequate storage for their grains, many small producers also must market all of their grain, only to buy much of it back later in the year at consumer rather than producer prices.

Several possibilities for the use of intermediate technology, have been mentioned which offer potential for at least small positive nutritional benefits. One such possibility concerns the local manufacture of small tools and implements which are typically very costly to the small farmer, and at times not available at all. One of the case studies undertaken as a part of the assessment pointed out the considerable expense to the small farmer of tools and other materials, and emphasized that this is typically onverlooked or underestimated in farm production studies.

The element of AID strategy which aims at assisting the small farmers in producing more and better quality foods should, in the opinion of this analyst, be a continuing part of the GOH agricultural program, and is an especially valuable part of the AID strategy, from

the nutritional point of view. Such an element could, in program terms, include production of vegetables and tree crops, and the husbandry of fish and small animals.

Other strategy elements. Other areas of support indicated in the AID strategy -- human resources development and organizational development, and agricultural research -- have less direct nutritional benefits, and operate in a different time frame for the nutritional benefits hoped to be produced through indirect action, than do the above activities. The aim of these activities is to enable GOH programs directed at the small farmer to provide more and varied resources to him, by widening or eliminating current organizational bottlenecks. The rationale behind these activities appears to be consistent with increased nutritional benefits through greater small farmer incomes; however, the nutritional impacts are indirect, and will only occur as a function of the success in finally moving greater bundles of resources to the target group.

TABLE 1.1

FARMSIZE: NUMBER OF FARMS AND AMOUNT OF FARMLAND BY FARM SIZE CATEGORY (a)

FARMSIZE	Number of Farms	% of Total	Area of Farms	% of Total
Less than 1 hectares	33,774	17.3	21,534	0.8
1-2 hectares	38,643	19.8	53,584	2.0
2-3 hectares	28,699	14.7	69,865	2.6
3-5 hectares	23,631	12.1	93,696	3.5
5-20 hectares	47,478	24.3	468,983	17.6
20-50 hectares	15,164	7.8	461,464	17.5
Greater than 50 "	7,908	4.0	1,485.949	56.0
TOTAL	195,297	100.0	2,655,095	100.0

(a) Source 1974 Agricultural Census.

TABLE 2.1

LAND TENURE BY FARMSIZE:
(Percent of land in each Tenure Category)

LAND TENURE

FARM SIZE	Private Ownership	Sharecropped (a)	Rented (b)	Other
0.6 - 1 Hectares	25.3	14.4	32.9	27.4
1 - 2 Hectares	39.8	7.8	30.0	22.4
2 - 3 Hectares	49.9	5.1	14.9	30.1
3 - 5 Hectares	65.3	2.6	9.7	22.4
5 - 20 Hectares	85.0	1.0	4.5	9.4
20 - 35 Hectares	98.2	0.0	0.1	1.7
TOTAL	65.2	3.8	12.	18.

(a) Received in a sharecropping arrangement.

(b) Rented from a private owner.

TABLE 2.2

LAND TENURE BY REGION
(Percent of land in each tenure category)

TENURE

REGION	Privately Owned	Sharecropped	Rented	Other
South	69.3	2.9	16.0	11.7
East	62.0	3.2	5.9	28.9
North	64.7	1.2	7.9	26.2
East Central	61.8	5.6	8.3	24.3
West Central	81.0	1.4	14.3	3.2
West	54.7	8.5	25.3	11.5
TOTAL	65.3	3.8	12.9	18.0

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TABLE 2.3

LABOR: FARM LABORERS BY FARMSIZE

LABOR

FARM SIZE	Farm Laborers (a)	Adult Males	Adult Females	Children	Family Size
0.6 - 1 Hectares	1.7	1.6	1.4	2.9	5.2
1 - 2 Hectares	1.8	1.6	1.6	3.3	5.8
2 - 3 Hectares	1.8	1.6	1.6	3.3	6.0
3 - 5 Hectares	1.9	1.7	1.5	3.3	6.1
5 - 20 Hectares	2.0	1.8	1.8	3.8	6.8
20 - 35 Hectares	2.9	2.7	2.0	3.0	7.1
TOTAL	1.9	1.7	1.6	3.4	6.3

(a) Derived by weighting males, females, and children in the household by their relative contribution to farm labor.

TABLE 2.4 LABOR: RELATION OF FAMILY AND WAGE LABOR

LABOR (In Percentages)

FARM SIZE	Farms Using Wage Labor	Wage Labor Ratio (a)
0.6 - 1 Hectares	47	31.3
1 - 2 Hectares	56	29.2
2 - 3 Hectares	78	32.6
3 - 5 Hectares	86	36.8
5 - 20 Hectares	87	40.6
20 - 35 Hectares	82	40.3
TOTAL	79	36.8

(a) Wage Labor is calculated as a percent of all farm labor.

TABLE 2.5

FARM CAPITAL: GROSS CAPITAL, DEBTS, AND NET WORTH

CAPITAL

FARM SIZE	Gross Farm Capital (Lempiras)	Indebtedness (Lempiras)	Net Worth (Lempiras)
0.6 - 1 Hectares	740.2	10.0	730.3
1 - 2 Hectares	1,105.8	21.5	1,084.8
2 - 3 Hectares	1,152.5	110.9	1,460.9
3 - 5 Hectares	2,187.2	170.9	2,027.2
5 - 20 Hectares	3,551.3	271.7	3,377.7
20 - 35 Hectares	4,641.2	137.8	4,435.5
TOTAL	2,250.7	166.5	2,145.2

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TABLE 2.6 FARM CAPITAL PER HECTARE: GROSS CAPITAL, DEBTS, AND NET WORTH PER HECTARE IN FARM

FARM SIZE	CAPITAL PER HECTARE		
	Gross Farm Capital per Hectare (Lemp)	Indebtedness per Hectare (Lempiras)	Net Worth per Hectare (Lempiras)
0.6 - 1 Hectares	906.5	12.2	894.3
1 - 2 Hectares	737.2	15.1	722.1
2 - 3 Hectares	621.0	46.1	593.8
3 - 5 Hectares	546.8	42.7	506.7
5 - 20 Hectares	384.6	29.4	355.2
20 - 35 Hectares	168.8	5.1	163.6
TOTAL	377.9	27.8	358.4

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TABLE 2.7 CREDIT: AMOUNT OF CREDIT PER CULTIVATED HECTARE

CREDIT

FARMSIZE	Credit per Cultivated Hectare (Lempiras)	Debt/Credit Ratio(%) (a)
0.6 - 1 Hectares	16.3	2
1 - 2 Hectares	72.2	6
2 - 3 Hectares	91.1	6
3 - 5 Hectares	103.1	5
5 - 20 Hectares	122.0	3
20 - 35 Hectares	191.0	4
TOTAL	101.3	5

(a) Showing debits as a percent of credit obtained.

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TABLE 2.8

LAND USE BY FARMSIZE

LAND USE CATEGORY (% OF TOTAL)

FARM SIZE	Land in Crops	Land in Improved Pasture	Subtotal: Land in Crops and Improved Pasture	Fallow Land	Unutilized Land (a)	Land in Forest and Natural Pasture (b)
0.6 - 1 Hectares	86.3619		86.7			0.3
1 - 2 Hectares	83.7305	0.1	83.3	0.9	0.4	0.3
2 - 3 Hectares	82.4463	1.6	84.1	1.6	1.7	4.2
3 - 5 Hectares	73.9397	3.4	77.4	4.3	5.7	7.5
5 - 20 Hectares	52.2632	12.1	64.4	5.5	5.7	21.1
20 - 35 Hectares	17.5645	27.1	44.6	6.6	12.9	34.3
TOTAL	67.1599	6.6	73.8	3.6	4.1	11.8

(a) Land that is potentially utilized but not actually used due to lack of resource.

(b) Remaining land is houseplots, farm building or other land.

TABLE 2.9

LAND USE BY REGION

LAND USE CATEGORY (% OF TOTAL)

REGION	Land in Crops	Land in Improved Pasture	Subtotal: Land in Crops and Improved Pasture	Fallow Land	Unutilized Land (a)	Land in Forest and Natural Pasture (b)
South	68.0	6.6	74.6	2.1	2.1	14.8
East	76.1	6.6	83.6	3.2	2.3	6.3
North	76.9	3.6	80.5	2.5	7.9	6.5
East Central	67.3	7.7	75.0	2.9	3.5	9.2
West Central	48.6	6.1	54.7	7.5	7.2	21.8
West	62.7	8.0	70.6	4.1	2.4	13.9
TOTAL	67.1	6.6	73.7	3.6	4.1	11.8

(a) Land that is potentially utilized but not actually used due to lack of resource.

(b) Remaining land is houseplots, farm building or other land.

TABLE 2.10 CULTIVATED LAND: MEAN BY FARMSIZE

CULTIVATED LAND

FARMSIZE	Mean Amount of Cultivated Land (Hectares)
0.6 - 1 Hectares	0.7
1 - 2 Hectares	1.2
2 - 3 Hectares	2.0
3 - 5 Hectares	2.9
5 - 20 Hectares	4.4
20 - 35 Hectares	4.5
TOTAL	3.0

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TABLE 2.11

CROP MIX: VALUE OF CROPS PRODUCED BY CROP TYPE

FARM SIZE	CROP TYPE: Basic Grains and Beans	Other Annual Crops	Annual Crops Total	Permanent Crops Total	Total Crop Production
0.6 - 1 Hectares	209.8	12.3	222.1	23.2	245.3
1 - 2 Hectares	321.2	111.9	433.0	64.9	497.9
2 - 3 Hectares	569.5	64.0	633.5	103.8	737.3
3 - 5 Hectares	690.2	48.2	738.5	158.8	897.2
5 - 20 Hectares	1,059.4	253.2	1,312.7	465.5	1,778.1
20 - 35 Hectares	1,166.8	237.9	1,404.7	1,811.3	3,215.9
TOTAL	745.0	147.8	892.8	302.7	1,195.6

TABLE 2.12

CROP MIX BY FARMSIZE

CROP TYPE (% OF TOTAL)

FARM SIZE	Basic Grains	Other Annual Crops	Subtotal: Annual Crops	Permanent Crops
0.6 - 1 Hectares	89.3	2.2	91.4	5.1
1 - 2 Hectares	85.1	3.3	88.4	8.3
2 - 3 Hectares	84.4	3.9	88.3	8.5
3 - 5 Hectares	82.0	2.8	84.8	10.0
5 - 20 Hectares	73.5	7.3	88.8	14.9
20 - 35 Hectares	59.5	8.3	67.8	28.6
TOTAL		5.0	84.2	11.6

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TABLE 2.13 PRODUCTION COSTS: LABOR VS. TECHNOLOGY

FARM SIZE	PRODUCTION CATEGORY Labor (%)	Technology (%)
0.6 - 1 Hectares	94.3	5.7
1 - 2 Hectares	90.8	9.2
2 - 3 Hectares	85.6	14.4
3 - 5 Hectares	83.1	16.9
5 - 20 Hectares	76.6	23.4
20 - 35 Hectares	72.2	27.8
TOTAL	82.5	17.5

TABLE 2.14 **INPUTS: USE OF FERTILIZER**

FERTILIZER

FARM SIZE	Fertilizer per hectare(Value in Lempiras)
0.6 - 1 Hectares	6.8
1 - 2 Hectares	39.6
2 - 3 Hectares	9.6
3 - 5 Hectares	9.9
5 - 20 Hectares	14.0
20 - 35 Hectares	18.0
TOTAL	16.0

TABLE 2.15

FARM PRODUCTIVITY: RETURN TO CAPITAL ON SMALL FARMS

CAPITAL AND RETURNS

FARMSIZE	Agricultural Capital (Lempiras)	Crop Production (Lempiras)	Return (a) (Lempiras)	Total Production	Returns
6-1 hectares	236.8	245.3	1.0	335.8	1.4
1-2 hectares	548.3	497.3	0.9	695.8	1.3
2-3 hectares	994.4	737.3	0.7	1,036.2	1.0
3-5 hectares	1,747.7	897.2	0.5	1,318.3	0.8
5-20 hectares	4,554.6	1,778.1	0.4	2,638.7	0.6
20-35 hectares	11,574.5	3,215.9	0.3	4,373.4	0.4

TABLE 2.16

FARM PRODUCTIVITY AND PROFITABILITY: RETURNS TO FARM LABOR

LABOR AND RETURNS

FARMSIZE	Labor (days)	Gross Farm Production (Lempiras)	Gross Productivity Index (Lempiras per day)	Net Farm Production (Lempiras)	Net Productivity (Lempiras per day)
0.6 -1 Hectareas	56.2	335.8	6.0	257.1	4.6
1 -2 Hectareas	99.7	695.8	6.0	529.9	5.3
2 -3 Hectareas	151.1	1,036.2	6.9	812.8	5.4
3 -5 Hectareas	218.3	1,378.3	6.0	1,036.4	4.8
5 -20 Hectareas	321.7	2,638.7	8.2	2,069.1	6.4
20-35 Hectareas	364.7	4,373.4	12.0	3,652.3	10.0
TOTAL	224.6	1,741.0	7.8	1,369.9	6.1

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TABLE 2.17

FARM PRODUCTIVITY: NET INCOME PER HECTARE IN FARM (FAMILY LABOR NOT IMPUTED)

INCOME PER HECTARE

FARMSIZE	Mean Net Income (Lempiras)	Mean Farmsize (Hectares)	Mean Income Per Hectare
6 - 1 Hectares	237.4	0.8	289.6
1 - 2 Hectares	488.2	1.4	343.8
2 - 3 Hectares	704.0	2.5	286.2
2 - 5 Hectares	822.2	4.0	205.5
5 -20 Hectares	1,722.5	9.2	186.6
20 -35 Hectares	3,342.3	27.1	123.3

TABLA 2.18 FARM PRODUCTIVITY: NET INCOME PER HECTARE CULTIVATED
(Family Labor not Imputed)

INCOME PER CULTIVATED HECTARE

FARM SIZE	Mean Net Income (Lempiras)	Mean Cultivated Land (Hectare)	Mean Income Per Cultivated Hectare
0.6 -1 Hectares	237.4	.8	316.6
1 -2 Hectares	488.2	1.2	410.3
2 -3 Hectares	704.0	2.0	346.8
3 -5 Hectares	822.2	2.9	281.6
5 -20 Hectares	1,722.5	4.4	394.2
20-35 Hectares	3,342.3	4.5	741.1

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TABLE 2.19

CROP PRODUCTIVITY AND PROFITABILITY: RETURNS TO CROP LABOR

LABOR AND RETURNS

FARMSIZE	Labor (days)	Gross Crop Production) (Lempiras)	Gross Productivity Index (Lempiras per day)	Net Crop Production (Lempiras)	Net Productivity (Lempiras per day)
0.6 -1 Hectareas	43.6	245.3	5.6	209.6	4.8
1 -2 Hectareas	72.1	497.3	6.9	393.1	5.5
2 -3 Hectareas	116.4	737.3	6.3	595.0	5.1
3 -5 Hectareas	165.2	897.2	5.4	702.2	4.3
5 -20 Hectareas	234.7	1,778.1	7.6	1,374.1	5.9
20-35 Hectareas	231.1	3,215.9	13.9	2,766.1	12.0
TOTAL	164.9	1,138.7	6.9	941.1	5.7

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TABLE 2.20

FARM ACCOUNTS: GROSS INCOME, PRODUCTION COSTS, NET INCOME (FAMILY LABOR COSTS IMPUTED)

ACCOUNTING CATEGORIES

FARMSIZE	Gross Income	Direct Costs of Production	General Farm Costs	Total Costs	Net Income
0.6 - 1 Hectares	335.8	604.8	23.9	628.7	- 292.9
1 - 2 Hectares	695.8	739.0	52.6	791.6	- 95.8
2 - 3 Hectares	1,036.2	895.4	71.0	966.3	69.9
3 - 5 Hectares	1,318.3	1,114.2	93.0	1,207.2	111.1
5 - 20 Hectares	3,638.7	1,609.8	128.0	1,737.9	901.0
20 - 35 Hectares	4,373.4	1,736.0	194.3	1,920.3	2,453.7
TOTAL	1,741.0	1,205.7	96.1	1,301.8	439.2

TABLE 2.21

FARM ACCOUNTS: GROSS INCOME, PRODUCTION COSTS, NET INCOME

(FAMILY LABOR NOT IMPUTED)

ACCOUNTING CATEGORIES

3,638.7

FARMSIZE	Gross Income	Production Costs	Net Income
6-7	335.8	90.3	237.4 245.5
1-2	695.8	207.6	488.2
2-3	1,036.2	332.2	704.0
3-5	1,318.3	496.1	822.2
5-20	2,638.7	916.2	1,722.5
10-35	4,373.4	1,031.1	3,342.3
TOTAL	1,741.0	584.5	1,156.5

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TABLE 2.22 DISPOSITION OF FARM CROPS BY FARMSIZE

(Crop Disposition Categories as a Percent of Total Crop Value)

CROP DISPOSITION

FARMSIZE	Marketed	Farm Use	Home Use	Paid as Rent
0.6 -1 Hectareas	12.3	11.3	73.4	1.3
1 -2 Hectareas	18.2	9.4	70.7	1.3
2 -3 Hectareas	35.5	8.4	54.5	1.0
3 -5 Hectareas	42.3	7.5	48.2	.4
5 -20 Hectareas	48.6	7.9	42.4	.2
20-35 Hectareas	40.6	8.4	49.5	.0
TOTAL	38.0	8.4	52.1	.6
	R = .3391	R = -.0790	R = -.3328	R = -.1232
	ETA^2 = .1286	ETA^2 = .0096	ETA^2 = .1244	ETA^2 = .0162
	R^2 = .1150	R^2 = .0062	R^2 = .1108	R^2 = .0152

TABLE 2.23 DISPOSITION OF CROP BY REGION

(Crop Disposition Categories as a Percent of Total Crop Value)

CROP DISPOSITION

REGION	Marketed	Farm Use	Home Use	Paid as Rent
South	42.1	10.5	46.4	.3
East	57.2	3.8	37.9	.5
North	50.2	8.5	37.9	.1
East Central	24.3	8.2	66.1	1.1
West Central	28.2	10.9	60.4	.2
West	22.5	9.1	66.6	1.4
TOTAL	38.0	8.4	52.1	.6

TABLE 2.24 SOURCES OF PEASANT HOUSEHOLD INCOME

SOURCES OF INCOME

FARMSIZE	Net Farm Income	Non-Farm Income	Net Family Income
0.6 -1 Hectareas	237.4 (36)	423.0 (64)	660.4 (100)
1 -2 Hectareas	488.2 (50)	483.1 (50)	971.4 (100)
2 -3 Hectareas	704.1 (59)	494.2 (41)	1,198.3 (100)
3 -5 Hectareas	822.2 (64)	468.9 (36)	1,291.0 (100)
5 -20 Hectareas	1,722.6 (77)	514.2 (23)	2,236.7 (100)
20-35 Hectareas	3,342.3 (90)	354.3 (10)	3,696.6 (100)
TOTAL	1,156.5 (70)	487.1 (30)	1,643.6 (100)

64% of net family income is non farm

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TABLE 2.25 SOURCES OF FARM INCOME

INCOME SOURCE

FARMSIZE	Crops	Other	Total
0.6 -1 Hectareas	249.1 (74)	86.7 (26)	335.8
1 -2 Hectareas	508.6 (73)	187.3 (27)	695.8
2 -3 Hectareas	751.1 (72)	285.1 (28)	1,036.2
3 -5 Hectareas	916.5 (70)	401.8 (30)	1,318.3
5 -20 Hectareas	1,811.5 (69)	827.2 (31)	2,638.7
20-35 Hectareas	4,241.2 (74)	1,132.2 (26)	4,373.4
TOTAL	1,217.5 (70)	523.5 (30)	1,741.0

TABLE 2.26 TECHNICAL ASSISTANCE TO SMALL FARMS

TECHNICAL ASSISTANCE

FARMSIZE	Has. Received	Has. Not Received	No Response
0.6 - 1	6.6	91.7	1.7
1 - 2	6.5	93.5	0.0
2 - 3	11.0	88.1	.9
3 - 5	9.5	89.1	1.3
5 - 20	11.7	87.1	1.2
20 - 35	22.4	76.1	1.5

TABLE 2.27 COOPERATIVE MEMBERSHIP BY REGION

MEMBERSHIP

REGION	Is a Member	Is nor a Member
South	5.4	94.6
East	14.5	85.5
North	10.5	89.5
East Central	4.3	95.7
West Central	13.7	86.3
West	13.2	86.8
TOTAL	10.2	89.8

TABLE 2.28

QUALITY OF LIFE INDEX

QUALITY OF LIFE

FARMSIZE	0	1	2	3	4	5
6 - 1	0	19.8	43.0	25.6	11.6	0
1 - 2	0.3	23.2	36.7	29.6	7.9	2.3
2 - 3	1.5	23.3	34.0	25.7	13.1	2.4
3 - 5	1.9	18.8	33.4	30.5	12.5	2.9
5 - 20	[illegible].0	13.7	30.8	28.7	17.7	7.0
20 - 35	0.0	13.4	19.4	26.9	20.9	19.4
TOTAL	1.4	18.1	33.1	28.4	14.1	4.7

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TABLE 2.29 QUALITY OF LIFE AND INCOME:

Mean Income Broken Down by Quality of Life Index

INDEX	Mean Income (Lempiras)
1	145.44
2	187.02
3	233.29
4	300.16
5	410.72

TABLE 2.30 **EDUCATIONAL LEVEL BY FARMSIZE**

EDUCATIONAL LEVEL 1%

FARMSIZE	Secondary	Primary: 6 Grades	Literate	Illiterate
.6 - 1	0	5.8	38.8	55.4
1 - 2	1.8	3.5	40.5	54.3
2 - 3	0.9	6.9	47.2	45.1
3 - 5	1.1	6.1	51.5	41.4
5 - 20	1.9	7.3	51.4	39.3
20 - 35	0.0	9.0	56.7	34.3
TOTAL	1.4	6.4	48.4	43.8

TABLE 2.31 **EDUCATIONAL LEVEL BY REGION**

EDUCATIONAL LEVEL

REGION	Secondary	Primary: 6 Grades	Literate	Illiterate
South	1.9	3.0	50.5	44.6
East	1.6	7.9	45.3	45.3
North	0.9	8.4	50.3	40.4
East Central	0.3	2.3	39.0	58.4
West Central	3.3	11.7	59.2	25.8
West	0.6	6.1	47.4	45.9
TOTAL	1.4	6.4	48.3	43.8

TABLE 3.1 MEAN INCOME BY FARMSIZE

FARMSIZE	Mean Income (Lempiras)
0.6 -1 Hectareas	126.0
1 -2 Hectareas	166.3
2 -3 Hectareas	200.4
3 -5 Hectareas	210.6
5 -20 Hectareas	327.5
20-35 Hectareas	519.2
TOTAL	260.5

TABLE 3.2 NET INCOME PER CAPITA BY FARMSIZE
(Percent of farms in each category)

INCOME

FARMSIZE	Less than 0 Lempiras	0-250 Lempiras	250-500 Lempiras	500-1,000 Lempiras	1,000-2,500 Lempiras
0.6 -1 Hectareas	2.5	85.1	9.1	3.3	0.0
1 -2 Hectareas	4.4	74.5	13.2	5.3	2.6
2 -3 Hectareas	3.3	63.9	21.5	9.0	2.4
3 -5 Hectareas	8.5	56.8	23.9	8.0	2.9
5 -20 Hectareas	5.9	45.9	24.7	16.4	7.1
20-35 Hectareas	6.0	40.3	20.9	23.9	9.0
TOTAL	5.5	57.6	21.1	11.3	4.5

TABLE 3.3 INCOME LEVEL BY FARMSIZE

INCOME LEVEL

FARMSIZE	Below Poverty Level	Above Poverty Level
0.6 -5 Hectares	90	10
5 -35 Hectares	75	25

INCOME LEVEL

FARMSIZE	Below Poverty Level	Above Poverty Level
0.6 -20 Hectares	85	15
20-35	67	33

TABLE 3.4 NET INCOME PER CAPITA GROUP FARMS

FARM TYPE	Income (Lempiras)
Asentamiento	201.4
Cooperative	262.6
Model Farm	301.5
Non-Model Farm	201.4
All Group Farms	211.5