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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

HONDURAS

PROJECT PAPER

SMALL FARMER COFFEE IMPROVEMENT

AID/LAC/P-069

Project Number: 522-0176
Loan Number: 522-T-044

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete <input checked="" type="checkbox"/> A	Amendment Number _____	DOCUMENT CODE 3
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2. COUNTRY/ENTITY HONDURAS	3. PROJECT NUMBER 522-0176
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4. BUREAU/OFFICE LA 05	5. PROJECT TITLE (maximum 40 characters) SMALL FARMER COFFEE IMPROVEMENT
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 06 05 86	7. ESTIMATED DATE OF OBLIGATION (Under 'B' below, enter 1, 2, 3, or 4) A. Initial FY <u>81</u> B. Quarter <u>3</u> C. Final FY <u>83</u>
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8. COSTS (\$000 OR EQUIVALENT \$1 = L. 2.00)						
A. FUNDING SOURCE	FIRST FY 81			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(400)	()	(400)	(480)	(70)	(550)
(Loan)	(300)	(8700)	(9000)	(300)	(8700)	(9000)
Other U.S.						
1.						
2.						
Host Country		60	60		4680	4680
Other Donor(s)						
TOTALS	700	8760	9460	780	13,450	14230

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	120	079	079	-0-	-0-	400	9000	550	9000
(2)									
(3)									
(4)									
TOTALS						400	9000	550	9000

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 012 020 044	11. SECONDARY PURPOSE COD. 110
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)							
A. Code	BF	TECH					
B. Amount	9550	(9550)					

13. PROJECT PURPOSE: (maximum 480 characters)

To mitigate the impact of coffee rust on small coffee producers by assisting as many of them as possible to increase their yields so as to be able to afford rust control measures thereby allowing them to increase their level of real income.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 1 2 8 2 0 4 8 6	15. SOURCE/ORIGIN OF GOODS AND SERVICES Grant Loan Both <input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify) _____
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

17. APPROVED BY	Signature: <i>John R. Oleson</i> Title: John R. Oleson Mission Director, USAID/Honduras	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 0 5 0 4 8 1
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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

PROJECT AUTHORIZATION

Name of Country: Honduras
Name of Project: Small Farmer Coffee Improvement
Number of Project: 522-0176
Number of Loan: 522-T-044

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Small Farmer Coffee Improvement Project for Honduras (the "Cooperating Country") involving planned obligations of not to exceed Nine Million United States Dollars (\$9,000,000) in loan funds ("Loan") and Five Hundred Fifty Thousand United States Dollars (\$550,000) in grant funds ("Grant") over a five-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign currency and local currency costs for the project.

2. The project ("Project") will strengthen the capability of and expand the coverage of the extension service of the Instituto Hondureno del Cafe (IHCAFE) and will increase the availability of investment credit for Project beneficiaries who will participate in IHCAFE's coffee technification program designed to mitigate the impact of spreading coffee rust in Honduras.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment (Loan)

The Cooperating Country shall repay the Loan to A.I.D. in U.S. Dollars within forty (40) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in U.S. Dollars interest from the date of first disbursement of the Loan at the rate of (i) two percent (2%) per annum during the first ten (10) years, and (ii) three percent (3%) per annum thereafter, on the outstanding balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services (Loan)

Goods and services, including ocean shipping, financed by A.I.D. under the Loan shall have their source and origin in countries that are members of the Central American Common Market or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing.

c. Source and Origin of Goods and Services (Grant)

Goods and services, except for ocean shipping, financed by A.I.D. under the Grant shall have their source and origin in the United States and countries that are members of the Central American Common Market, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

d. Conditions Precedent to Disbursement

(1) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance the credit fund, the Cooperating Country shall provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that an administrative agreement delineating powers and responsibilities for credit fund administration has been signed by the Ministry of Finance, the Central Bank, and IHCAFE.

(2) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance the credit fund, the Cooperating Country shall cause to be provided to A.I.D., in form and substance satisfactory to A.I.D., a detailed operational plan which indicates (A) the division of labor between each of the Banco Nacional de Desarrollo Agricola (BANADESA) and the Banco Hondureño del Cafe (BANHCAFE) and IHCAFE and (B) the mechanism which will be employed to assure the linkage between the extension activities of IHCAFE and the credit activities of BANADESA and BANHCAFE.

(3) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance the credit fund after March 1, 1983, the Cooperating Country shall cause IHCAFE to provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that IHCAFE has cumulatively established and funded twenty (20) positions for credit extension agents.

e. Special Covenants

The Cooperating Country shall covenant that, unless A.I.D. otherwise agrees in writing, it will:

(1) make available, or cause to be made available, adequate crop production credit to Project participants through the banking system.

(2) make a capital contribution of at least \$1 million equivalent in lempiras to the Central Bank for use in the special line of credit established under the Project.

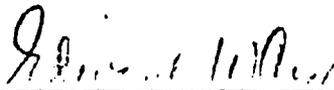
(3) maintain the investment credit fund for a period no less than ten years at a level no less than equal to the amount contributed thereto by A.I.D. and out of its own Treasury resources, returning all reflows of

principal plus interest charges not otherwise allocated thereto, and allowing the banks participating in the program access thereto for relending in accordance with the Project.

(4) ensure that the investment credit for on-farm activities will be allocated reasonably and equitably among farmers.

g. Waiver (Loan)

Thirty (30) 4x4 diesel engine, utility vehicles with export warranty (Jeep CJ-5's or CJ-7's) having an approximate value of \$240,000, may be purchased from a single source on a negotiated price basis.



Acting Assistant Administrator
Bureau for Latin America
and the Caribbean

27 MAY 1981

Date

Clearances:

GC/LAC:BVeret: h date 5/26/81
LAC/CEN:RGomez: R date 5/22/81
LAC/DR:CPeasley: CP date 5/22/81
LAC/DR:MBrown: MB date 5/27/81

Drafted:GC/LAC:GMWintery GM 5/20/81:x29182

SMALL FARMER COFFEE IMPROVEMENT
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I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

USAID/Honduras recommends authorization of a \$9,000,000 Development Loan and a \$550,000 Development Grant for a Small Farmer Coffee Improvement Project. The Loan would be repaid to the United States Government in U.S. Dollars within forty years from the date of first loan disbursement, including a grace period of not to exceed ten years, at a rate of interest of 2% during the grace period and 3% thereafter.

B. Borrower/Grantee

The Borrower/Grantee will be the Government of Honduras, which, in turn, will use the funds to make a grant to the Instituto Hondureno del Cafe (IHCAFE). Credit funds will be administered through a tri partite agreement between IHCAFE, the Central Bank and the Government of Honduras. These funds will then be made available through the Central Bank to the Banco Nacional de Desarrollo Agricola (BANADESA) and to the Banco Hondureno del Cafe (BANHCAFE). The main implementing agencies will be IHCAFE, BANADESA, and BANHCAFE.

C. Project Summary

The increasing importance of coffee in the national economy is easily seen in the growth of the value of coffee sales. The aggregate coffee production of Honduras has grown from 950,000 quintales in 1976/1977 to about 1.65 million quintales in 1979/80. The value of coffee exported has increased from approximately \$20 million in 1970 to \$100 million in 1976 and \$200 million in 1979. It represented over 28% of the total value of agricultural exports in 1979, down from the 1978 share of 35%, but is still close to equalling bananas as the number one export crop. Government revenues from an export tax on coffee have grown from \$13 million in 1976 to \$35 million in 1980 (est.) and now account for 9.9% of Central Government tax collections.

Coffee production in Honduras is different from that of many other countries in that many thousands of small producers account for a large percentage of its production. Almost 80% of the land in coffee production is in the hands of 93% of the farmers.

In 1980, the presence of coffee rust in Honduras was confirmed. Rust constitutes a serious threat to the livelihood of small coffee producers. It can be controlled, but the required measures are costly. It is not financially feasible for small producers to incur these costs at their prevailing low yields. The costs can be absorbed and profits increased by a process of technification, which will increase yields by 3-4 times present levels. The small coffee producers effectively face only two choices: increase yields to meet the rust threat or slowly lose their income from coffee.

Concerned with the welfare of the small coffee producers and the negative effects on GDP, the Honduran Government is determined to increase its

assistance to small coffee producers. It recognizes that without assistance, the first producers to drop out of coffee production altogether will be the "micro producers" - those farmers who have a bit of coffee but whose main source of income is not coffee. The second group which would be forced to abandon coffee production would be the smaller producers who have only a few hectares planted, but whose livelihood depends on the income they receive from producing coffee. Of the 47,000 producers in Honduras, approximately 25,000 fall into this second category.

The purpose of this Project is to enable as many as possible of this second group of small coffee producers to maintain their coffee production and income in the face of spreading coffee rust. The Project seeks to do this by demonstrating the viability of technification of coffee production to increase yields to an extent that production in the presence of rust is still sufficient to be economical. Although the Project will work with approximately 3,000 small farmers, the Project's success should result in more farmers being willing and able to technify more hectares, thereby contributing to an overall goal of increasing the income of the rural poor in Honduras, while maintaining GNP and foreign exchange earnings from coffee in spite of the presence of coffee rust.

In order to achieve the production levels necessary to maintain their incomes, small farmers need to improve their technology and gain access to capital. These needs are addressed by the Project's two activities: 1) establishment and operation of a special credit fund for target group coffee producers, and 2) improvement and expansion of the coffee extension service operated by the Instituto Hondureño del Café (IHCAFE). Whereas larger coffee producers have been able to finance technification out of their profits and credit from commercial sources, access to investment credit of the kind and quantity necessary is currently unavailable to small producers in Honduras. Under this Project, investment credit of \$9 million will be provided through two financial institutions, the Banco Nacional de Desarrollo Agrícola (BANADESA) and the Banco Hondureño del Café (BANHCAFE). Small producer use of credit will be carefully supervised by IHCAFE technicians, who will prepare investment plans and loan applications, ensure that appropriate inputs are obtained and correctly applied, and guide the producers in adopting the technology that will optimize their financial return.

In order to adequately attend to 3,000 new clients, \$1,000,000 of development loan and \$550,000 of development grant funds will support a significant expansion and specialization of IHCAFE's extension program. Currently, IHCAFE's extensionists assist small producers with both the credit and technological aspects of coffee production. Under the Project, IHCAFE will separate its technical and credit extension services by hiring and training a corps of credit extension workers who will develop farm investment plans and credit applications. This will leave the technical extension workers free to concentrate on technology transfer and training of farmers to initiate and manage technified farms. Both groups of extensionists will be aided by long term technical advisers who will guide the processes of division of labor and expansion of the coverage of the extension service. Technical assistance to IHCAFE will include two long-term contract consultants: one, in

extension for three years; and one, in credit for two years. In addition, twenty-four person/months of short-term technical advisors will be required for a variety of training activities. Grant funds will be used to finance this assistance as the Mission anticipates seeking highly qualified U.S. technicians for the majority of this work. Loan funds will finance a certain amount of equipment necessary to the success of the Project's extension component including training expenses and vehicles.

Honduran counterpart contributions will be provided from three different sources. The Government will make a contribution of \$1 million to add to the capitalization of the Project's credit fund. IHCAFE's counterpart expenses include the costs of additional personnel required for the Project and the increase in operating costs. IHCAFE also will finance certain of the training (per diem expenses, etc.) and equipment costs. Management of the credit fund will also require certain increases in the personnel and operating expenses of the participating banks. In addition, the GOH will covenant to make available all necessary production credit to Project participants. The total Honduran contribution amounts to 33% of the Project costs.

In summary, A.I.D. and Honduran funds will be used as follows (\$000s):

	A.I.D.		<u>Honduras</u>	Total
	<u>Loan</u>	<u>Grant</u>		
1. <u>Extension Activities</u>	1,000	550	2,480	4,030
2. <u>Credit Fund</u>	<u>8,000</u>		<u>2,200</u>	<u>10,200</u>
TOTAL	9,000	550	4,680	14,230
Percent of Total	(63%)	(4%)	(33%)	(100%)

II. PROJECT BACKGROUND

A. Socio-Economic Framework

Coffee production in Honduras is an important source of income for about 45,000 small farmers. This coffee production not only generates \$200 million in foreign exchange earnings, but also distributes income to thousands of small farmers and rural laborers across the country. The recent appearance of coffee rust in Honduras is the most serious of several threats to coffee producers.

Coffee rust is a pale yellow fungus which causes premature defoliation, and can eventually kill the coffee tree. The threat of the disease, however, is not so much biological as it is economic. Coffee rust can be controlled chemically but the cost of control is high relative to the total production costs on a small, traditional farm. Given the current farm gate price of coffee, it is generally considered that coexistence with rust would require a tripling or quadrupling of productivity from the 7-10 quintales per manzana now common. It is also very likely that the smallest coffee producers, those with less than one manzana of production, will be unable to increase their productivity to generate enough income to employ chemical control. These micro-producers are, generally, not much more than coffee bean gatherers, and do not have the technical skills to remain in coffee production. Large producers are able and have already begun to improve their coffee production techniques largely due to the success of IHCAFE's promotion of its technification program. They probably will be able to survive rust with little additional assistance. In between the micro-producer and the large producer are 25-30 thousand small and medium/small farmers, many of whom are technically capable of remaining in coffee production, but who need access to credit and technical assistance to do so.

Without an effective assistance program directed toward these small coffee producers, coffee production on small farms would largely disappear in a very few years, both from the physical damage done to coffee trees and from the economic pressure brought with it. Assuming no dramatic increase in the price of coffee, the economic return would drop so low as to make it unprofitable to harvest and market the small production even before rust would completely eliminate a farmer's trees. Thus, the small farmer would abandon his coffee production, and either migrate from the area or revert to subsistence crops, thereby suffering a severe drop in family income.

The situation of the small coffee producer is even more precarious because he has been largely ignored by Honduran and international assistance programs. The Ministry of Natural Resources remains oriented toward basic grains and valley agriculture; the Honduran Coffee Institute (IHCAFE) has, in the past, delivered assistance primarily to medium and large producers; and the Agrarian Reform Institute (INA) does not work with these small traditional farms.

Recognizing the importance of the small coffee producers in the Honduran economy, the Instituto Hondureño del Café (IHCAFE) - a semi-autonomous

government agency which provides technical assistance, research, and extension services to coffee producers - has begun to look for ways to direct greater assistance to them. The policy of assisting small producers, however, will require significant changes in IHCAFE's method of operations and a significant increase in available financing. Thus, to accomplish its goal of serving a broader range of producers, IHCAFE has actively sought additional external financing in order to effect a restructuring of its extension service, hire and support additional extension workers and train them. Similar changes are necessary in coffee financing institutions. In fact, coffee producers, under IHCAFE leadership, recently have created the Honduran Coffee Bank (BANHCAFE) whose primary purpose is to assure the timely provision of an adequate supply of credit to coffee producers. Since BANHCAFE is a private bank with normal commercial credit practices and is capitalized by a special export fee paid by all coffee producers, it would be most likely to serve the larger producer. It has recognized in its charter, though, the importance of providing specialized services to the large majority of smaller coffee producers by creating a special programs branch of operations for activities targetted specifically toward this group. However, it will need assistance, primarily from IHCAFE, to achieve that purpose.

B. Relationship of the Project to the GOH National Development Plan

This Project responds directly to the main macroeconomic development goals of the Government of Honduras as expressed in its Five-Year Plan (1979-83) and the more recent Immediate Action Plan, developed in December 1980, and Emergency Economic Plan, published at the end of April 1981. The prime objective of all three plans is to increase national production on a growing and sustained basis. Production oriented programs are given priority. A secondary objective is to increase exports. This Project responds to both priorities. All three documents also place highest priority on increasing the share of development benefits accruing to the poor.

Depending on the spread of coffee rust and the damage it causes, this Project may or may not increase nationwide coffee production in the short run. In fact, it probably will not. However, what it will do is assist Honduras to maintain its level of production and coffee exports, that way preventing the serious economic downturn which would occur if production were to fall due to coffee rust.

While it might be assumed that larger coffee farmers could expand their production to make up for that lost to coffee rust on smaller farms, it is highly unlikely that they could do so given land constraints and the fact that large producers have already technified much of their holdings. Furthermore, a macro-production strategy of this sort, blindly aimed at maintaining production and export levels regardless of the social consequences, would be in direct conflict with the GOH's stated income distribution policies and its commitment to the welfare of the poor. The government is fully committed to this Project. In a period of severe government budgetary stringency the Government is contributing counterpart to this Project in excess of that required. It is also guaranteeing the maintenance of the credit fund, and thereby the continuation of the program

beyond the direct beneficiaries, by converting A.I.D. loan funds into grant funding for the executing agencies. Finally, it has committed itself to the future financing of production credit for the Project's beneficiaries.

C. Complementary A.I.D. and Other Donor Assistance

IHCAFE has identified three important constraints to the success of technification of coffee farms in Honduras: (1) the low level of technical expertise of both coffee producers and extension agents, (2) the lack of access to credit especially among small producers, and (3) the lack of access to transportation services, especially access roads. This Project, in combination with the activities described below, addresses all three of these constraints. In addition, the programs of A.I.D., other donors, and other entities of the GOH are helping to meet these and other related needs.

1. Access Roads. IHCAFE currently is receiving direct assistance from the European Economic Community for the construction of 247 kilometers of access roads in coffee growing areas. Several other donors are also financing the construction of access roads although they are not working directly with IHCAFE. For example, roads are currently being built in the coffee growing departments of La Paz, Copan, Ocotepeque, and Lempira under two IDB projects totalling \$31.7 million. The eighth IBRD road project is financing the construction of roads in three areas, one of which is a coffee region. A.I.D., too, is financing the construction of rural access roads under its FY 1980 Rural Trails and Access Roads Project. With total life of project funding of \$11.2 million this project will construct access roads and trails in the coffee producing areas of Santa Barbara, Copan, Ocotepeque, Lempira, Intibuca, and La Paz, and it is expected that approximately 18,000 families will gain access to improved transportation services. In addition, this Project seeks to increase the capacity of the Ministry of Public Works to maintain the roads built. This A.I.D. activity clearly will provide access to transportation services to target beneficiaries of this proposed Project who reside in these areas.

2. Training. IHCAFE is constructing two training centers for extension workers with loan funds from the European Economic Community. In addition, the Government of Great Britain is funding certain training activities within the Extension Service and the Research Department of IHCAFE. Among these will be scholarships at the Masters level in phytopathology, extension, coffee technology, entomology, and soils, and two month courses in coffee selection to be held in Brazil. IHCAFE also will be a direct and indirect beneficiary of the A.I.D. Agriculture Sector II Program since under the human resources development activity of that program, IHCAFE is eligible to receive two scholarships for participant training, and some of IHCAFE's agents will benefit from in-service training in extension. In addition, the activities designed to strengthen the institutional capacity of the National Regional Agricultural University (CURLA) ultimately will benefit the coffee sector. These activities, although limited in nature, eventually will enable IHCAFE to increase the capacity of its human resource pool.

3. Credit. IHCAFE has mounted a campaign to secure foreign loans at attractive terms for the purpose of relending them to Honduran coffee producers. At present, IHCAFE has made loan applications totalling \$40 million to a variety of foreign banks and applications totalling \$10 million to the Governments of Mexico and Venezuela. Repayment periods of 20 years have been requested on the bank loans, although interest rates will vary. IHCAFE has successfully secured such loans from commercial sources in Canada and West Germany (fertilizer credits). These funds although not targeted for use by small producers only, will be used to increase IHCAFE's total coffee credit portfolio, and will be managed by BANADESA and BANHCAFE. IHCAFE estimates that even if it were to succeed in receiving the total \$50 million, there would still be a shortage of credit necessary for the participation of both large and small coffee producers in its technification programs.

4. Control of Coffee Rust. IHCAFE is in the process of acquiring from the Government of Great Britain rust control commodities (pesticides, fungicides, and fertilizers) and equipment (spraying devices and laboratory equipment). The total amount is not expected to exceed \$3,400,000, and will be loan funded. Great Britain also has provided technical assistance to support the program including one specialist in pesticide spraying who will train field personnel in the use of the equipment, and the assistance of a phytopathologist has been provided to the Research Department of IHCAFE.

While IHCAFE's programs are focused at the farm level, the Ministry of Natural Resources has mounted a national quarantine program consisting mostly of spraying at geographic checkpoints. This program, aimed at controlling the spread of coffee rust may have had some success at keeping rust out of previously uninfected areas. However, it is not likely to be effective in preventing the spread of rust in the long run.

In addition to the effort contemplated under this Project, A.I.D.'s Regional Office for Central America and Panama (ROCAP) recently has received AID/W approval to undertake a region-wide coffee pest control program. This project will complement the Honduran effort by providing expertise and carrying out research on the problems of coffee rust throughout the region. Given the political situation in other countries of the area, it is anticipated that many of the activities will be carried out directly in Honduras.

5. Crop Diversification. Recognizing the fact that technification will not be an economically feasible alternative for a large number of very small producers, IHCAFE has begun to look at options for those who have been, or are about to be, forced out of coffee production with the onslaught of rust. A crop diversification division recently has been created within IHCAFE. The Government of Great Britain is assisting with some training in the cultivation of crops requiring the climatic and agronomic conditions of coffee growing areas, but whose introduction would be new to Honduras. In addition, the Ministry of Natural Resources' research program has initiated studies in the area of crop diversification.

6. Coffee Processing. In its assistance package, the British also have included some international study tours, consultants' visits, and equipment designed to increase IHCAFE's ability to improve coffee processing procedures. In addition, they have loaned IHCAFE \$2.5 million for the establishment of eight centralized processing centers.

Under the A.I.D.-financed Rural Technologies Project, the feasibility of solar dryers for coffee and basic grains is currently being tested. Solar dryers would serve further to increase the producer's control over the production stage at which his coffee crop is sold, thereby allowing him more control over the price he will receive. Representatives from the Center for Industrial Development, one of the executing agencies for the Rural Technologies Project, have had a meeting with IHCAFE representatives regarding the possibility of testing the feasibility of several other coffee related implements under the Project. These include: low-cost fertilizer applicators, spraying devices, water catchment systems, and hydraulic rams.

III. PROJECT DESCRIPTION

A. Rationale and Project Purpose

In Honduras, coffee is a small farmer crop. Small producers work approximately 80% of the land planted in coffee. In addition to the importance of the crop as a foreign exchange earner, coffee production, structured as it is, has served an important social function in Honduras. It distributes income to small farmers who might otherwise be involved in less profitable agriculture. In a sense coffee represents the difference between living in poverty and achieving a modest standard of living for thousands of rural families. Coffee rust threatens to erode this difference since smaller producers without access to the means either to prevent coffee rust or to coexist with it will be the first to be forced out of production.

It is, however, possible for technified, highly productive coffee farms to coexist with rust. The better technified a farm, the less susceptible it is to disease, and the better able it is, economically to be sprayed with fungicides. Furthermore, since farms can be technified in phases, certain production levels can be preserved thereby mitigating the lost production that certain types of renovation imply. In short, technification has been determined to be the best long-run solution to the immediate problem. Furthermore, IHCAFE is committed to the idea that small farmers are able to technify and should be included in their technification program.

The purpose of the Project, therefore, is to mitigate the impact of coffee rust on small coffee producers by assisting as many of them as possible to increase their yields so as to be able to afford rust control measures thereby allowing them to increase their level of real income.

B. Project Strategy

There are several constraints to successful implementation of a rust control/technification program aimed at the target group.

First among them is the problem of access to investment credit. Technification is an expensive proposition for small coffee producers. It is impossible to undertake without access to investment credit at reasonable rates and with an amortization period geared to the production payback period of technification. Access to this type of credit is, therefore, a prerequisite to the success of a technification program.

Second is the dependence of the program on the success of the extension program in transferring technology to the small coffee farmer. New farm interventions and management techniques must be taught to the target population. The farmer's implementation of new practices will have to be carefully monitored, evaluated, and adjusted to guarantee success at the farm level. A strong extension service is, therefore, a prerequisite to the success of this Project.

Although this Project has been designed in great part to respond to an immediate need to combat the spread of coffee rust in Honduras, it will also have important longer term development impacts. By the end of this five-year Project, the following conditions will have been achieved:

1. Productivity per hectare will have increased from 7.9 to 25 quintales on that area which has been technified as part of the Project by the end of 1983, with proportionately equivalent increases being realized on farms which enter the program later.

2. The demonstrated success of the technification program will have induced small producers begin technification on approximately 4,000 more manzanas by 1986.

3. Reflows from the credit fund and additional sources will finance more farmers and more land in an expanded technification program.

In order to reach the end of Project status, as described above, A.I.D. and counterpart resources will be used to finance activities which will result in the following:

1. an expanded and better qualified IHCAFE extension service
2. increased and improved use of technologies at the farm level
3. the application of better farm management techniques at the small farm level
4. the establishment of a viable, self-sustaining credit mechanism for small producers.

C. Detailed Project Description

1. Extension Activity

The objective of A.I.D. assistance to the IHCAFE extension service is to develop and institutionalize a method of working with small farmers. The IHCAFE extension service will require a significant reorientation to achieve any type of long range success in helping small producers, and the Project will focus on supporting this process. Extension agents will be freed of almost all credit responsibilities, and will be responsible for more farmer training and less supervision. The extension agent will become more of an agent of social change, and less of a mere technology transfer agent. However, to obtain an immediate impact, support will be given, in early stages of the Project, to serving small farmers in the traditional way. As the Project progresses, extension methods will be refined, and a greater number of small farmers can be included in a program better tailored to their needs. The activities involved in the improvement of the extension service and its outreach to small farmers will include: i) development of a credit extension service, ii) in-service training, iii) production of area profiles, iv) promotion and farmer selection, and v) small farmer training and assistance.

Project activities will be coordinated nationally. All extension agents will be eligible to participate in in-service training activities, whether they work with participant farmers or not. It is not the intention of the Project to divide IHCAFE services into groups which serve traditional clients and groups that serve small farmers or Project participants, but rather to promote an integral shift in policy which will accommodate small farmers in the IHCAFE system. On the other hand, it is likely that Project activities will become concentrated in those regions where the small farmer population is most responsive to the technification program. This de facto regional concentration will be desirable because it will employ IHCAFE administration most efficiently, will allow for a more intensive development of a method for serving small farmers, and will permit the distribution of resources according to need. In addition to improvements in the extension system, the Project calls for an expansion of staff-by 10 extension agents and 20 credit agents. About 8 experienced extension agents and 4 credit agents will be assigned to the Project at the outset. In each of the next years, about 16 additional extension agents and 8 credit agents will begin work with Project participants. Exact estimates are difficult, however, because Project participants will be integrated into regular IHCAFE training activities in addition to Project activities. A.I.D. will finance the purchase of thirty vehicles for the increased staff.

a. In-service Training

The success of all extension activities will depend upon how well extension agents are trained. Short courses, seminars, workshops, field trips, supervised work activities, and training courses in foreign countries will be designed and conducted under the guidance of the long term credit and extension advisors, drawing upon short term T.A. from regional sources as needed. Much of the ground work for these training activities has been laid by work of PROMECAFE advisors. The Project will focus on expanding the amount of training and the content of courses. Courses will include: communication and extension techniques, rural sociology, campesino organization, group dynamics, area profiles, production economics, coffee culture, processing, marketing, small farm technology, etc. A special series of courses will be offered to credit agents, but many of the courses will be offered to both credit and extension agents. The ten extension agents hired in the first Project year will be the primary training recipients, while more experienced agents will be assigned specific project responsibilities. In support of this training, A.I.D. will finance the services of technical advisors and training costs such as materials, per diem allowances, rentals for 36 short courses, seminars and workshops over three years.

b. Area Profiles

One of the first significant activities involving the reorientation of extension work toward the small farm will be the development of area profiles by extension workers. This will be an important step in the process of learning about the special needs of the small farmer and planning detailed assistance efforts for him. The area profile will be a very specialized study designed to identify characteristics and attitudes of the

small coffee producer which will influence his participation in the program and ability to succeed in technification. The specific content of questionnaires and survey instruments will be designed under the close guidance of the long term extension advisor with the objective of providing information which can be used in the development of strategies for Project promotion, use of media, group formation, participant selection, and development of training materials. Short term technical advisors will assist in coordinating the development of area profiles with training activities and with regional program activities. Profiles will include agronomic practices, farmer characteristics, a community profile, an infrastructure inventory, and other relevant information. Area profiles will be initiated early in the second Project year, near the beginning of in-service training activities, and will be repeated annually. A.I.D. will finance short-term T.A. in rural sociology; and IHCAFE will pay all operating expenses for this activity.

Area profiles are useful not only for the specialized information that they provide about small farmers in a given area, but also as a training tool for extension workers. The process of designing a questionnaire and making contact with small farmers in a survey will be part of the extension agents' education. An objective of this activity is that the extension agents eventually adopt the practice of revising the area profiles annually, as they continually look for more effective ways to assist the small farmer. This information gathering process becomes the basis of the extension agent's reorientation from a mere provider of technical information to an agent of social change.

c. Promotion and Farmer Selection

The objective of this activity is to encourage participation in the Project by farmers who are within the target group and who are most likely to be successful in adopting technological change. In the first Project year, participants will be selected through traditional IHCAFE techniques and through informal communication. It would not, otherwise, be possible to provide the immediate assistance needed by those small farmers who are now threatened by rust and who are actively seeking assistance. However, as the Project progresses, extension agents at a regional level will have to define better their objectives and strategy for delivering assistance to those farmers who are not early adopters. The development of a plan to promote Project activities and select participants will be a significant departure from traditional IHCAFE operations. This will be a primary responsibility of the long term extension advisor. Methods of promotion will be based upon a strategy developed through the area profiles, taking into account farmer characteristics, community organizations, media availability, and other systems of communication.

Because participation in the Project will be limited by available credit funds, the process of selecting eligible participants is very important. Selection criteria will be based upon the conditions defined in area profiles and will be subject to A.I.D. review and approval. Traditional IHCAFE selection criteria will be changed significantly to accommodate this new Target Group. The responsibility of selecting those small farmers who are most likely to be successful belongs to the extension agent. Precise weighing

of selection criteria will be done after area profiles are evaluated. All participants, of course, will fall within the general target group definition of having between one and ten hectares of coffee, productivity of less than 15 quintales per hectare, and more than half of their income from coffee. Specific selection criteria will include: (i) soil types, (ii) slope of land, (iii) access to water, (iv) access to roads, (v) availability of family labor, (vi) education, and (vii) relative need (i.e. reliance upon coffee, availability of outside income). Again, development of selection criteria will be a primary responsibility of the extension and credit advisors.

d. Small Farmer Training and Assistance

The essence of the reorientation of the IHCAFE extension service toward the small farmer will be the change from a system of individual, on-farm supervisory visits to a system of farmer education. IHCAFE extension agents have traditionally provided intensive assistance in remedying specific production problems and in obtaining credit, but have done very little teaching or training to support their supervision. In this Project, the small farmer will receive more training, with individualized assistance in production related directly to this training. Individual assistance in credit procedures will be the specialized responsibility of the credit agent.

Improvement of IHCAFE's farmer training methods will be accomplished by: (i) separating credit and training activities, (ii) developing an improved technological "message" or curriculum, and (iii) introducing improved teaching techniques. Extension agents will perform a different function from credit agents. The credit agent will take responsibility for assisting the farmer with credit applications, input delivery, and loan repayments. The extension agent will dedicate full time to the responsibilities of technology transfer.

Perhaps the most important part of the development of a small farmer training program is the development of the message to be communicated to the farmers. The IHCAFE technical models have to be transformed into messages which are understandable to the small farmer and which form part of the logical progression of a training course. Different technological "messages" will be developed for each different teaching media - radio, group instruction, individual instruction, mobile video units, etc. These messages may be formal publications or broadcasts, or they may be informal programs of instruction for use by the extension agent in his visits to individual farmers. In all cases, the development of teaching messages or curricula will be a responsibility of the extension advisor, who will work with IHCAFE researchers, extensionists, and training personnel and will draw on short term assistance in communications and in technical aspects of production or publication. IHCAFE has some limited capability in communications presently, but will require considerable assistance. The need for short term TA will depend upon the long term extension advisor's own expertise in communications. It is possible that funding for a communications specialist will be shared with ROCAP, and that the specialist will be attached

to PROMECAFE. This would allow close coordination of national and regional Project activities in the development of technological messages and instructional material for small farmers.

Beginning early in the second year of the Project, extension agents will initiate new programs of farmer instruction. The primary activity from the second year on will be the instruction of farmer groups. From 15 to 30 farmers will be organized into an instructional unit, and will receive formal instruction from extension agents on a regular basis (approximately biweekly). Additionally, extension agents will establish demonstration lots in cooperation with local farmers. One demo lot will be established for approximately every fifty farmers (or two to three groups), and where possible the cooperator farmer will be hired (and trained) as a paratechnician. While extension agents will rely increasingly on group instruction, each participant farmer will also be visited individually at key times in the crop year. Individual assistance will be especially intensive at the beginning of renovation (March-June), and will, later, focus on key activities such as fertilization, pest control, and pruning. Both farmer training and in-service training courses will be concentrated in May-November, after principle renovation work and before harvest. Individual assistance will be in the nature of follow-up instruction rather than mere supervisory visits. Other complementary farmer training activities will include radio broadcasts and other mass media (as identified in area profiles), and mobile training units employing video tape or movies. The Project will provide short-term T.A. to assist in the supervision of group formation and instruction. Specialized short-term T.A. will assist with development and implementation of media programs. A.I.D. will finance the services of short term advisors and the purchase of specialized media equipment, such as videotape. IHCAFE will finance operating costs of training activities.

e. Development of Credit Extension Service

A primary change needed in the IHCAFE extension system is the separation of responsibilities for credit supervision and farmer instruction. Under the present arrangement, the IHCAFE extensionist attempts both to supervise the farmer's credit and to advise him on technical problems. This system detracts from the extensionist's ability to do either job fully; and, very importantly, it often creates a barrier between the farmer and his technical advisor. The instructor cannot be totally effective if he is also the person who is responsible for reminding the farmer to make loan payments. Moreover, the need for specialized credit in coffee production requires that small coffee producers be given more assistance than any of the banks are capable of providing. Institutionalization of a credit extension service in IHCAFE can ensure the effective distribution of credit to small producers under farm plans that realistically reflect the farmer's technical needs and abilities. IHCAFE will, in the first year of the Project, establish a credit division and hire at least twenty credit agents. This may be a reorganization of the present technical credit assistance department, but will be an operational division parallel to the extension service. The credit agents may be new employees or they may be IHCAFE extension agents. If they

are extension agents, IHCAFE will hire new extension agents to replace them (i.e. the net gain will be 20 employees). It will be their responsibility to develop credit plans, assist in loan administration, assist in distribution of inputs to farmers, and monitor repayments. They will coordinate their work with both the extension agents and the lending banks' credit supervisors.

Credit agents will work closely with IHCAFE extensionists in designing a program of credit and technification for the individual farmer. Thereafter, the extension agents will supervise the farmer training, and the credit agents will supervise the farmers' relations with the bank and the suppliers of inputs (fertilizer, etc.). The credit agents also will ensure that farm plans are based on profit maximization rather than on mere production technology. The establishment of the IHCAFE Credit Division will be assisted by an A.I.D.-financed, long term credit advisor. A.I.D. financing will also provide short-term TA in such areas as rural savings mobilization and group credit organization. IHCAFE will pay operating costs of the credit division.

f. Relation to Regional Activities

The Project Identification Document identified the need to support research in resistant varieties and appropriate technologies for small farmers. This type of research is most appropriately carried out at a regional or international level. PROMECAFE and CATIE are currently active in coffee production research, and the proposed ROCAP project supporting these activities will augment their research capabilities considerably. Direct assistance to IHCAFE research has traditionally come from PROMECAFE, and IHCAFE prefers to maintain that relationship. To take full advantage of the existing regional/national relationship between PROMECAFE and IHCAFE, the ROCAP and USAID/Honduras projects have been developed with close communication. While neither project is dependent upon the other, there is a great deal of complementarity which should increase considerably the effectiveness of both.

In one area, especially, coordination of activities will be close and continuous. Both projects include components of development of a technology transfer mechanism. The complementarity envisioned is: i) PROMECAFE and CATIE will do basic research in technological packages, and will provide short-term T.A. to train IHCAFE personnel in the transfer of this technology, ii) a PROMECAFE advisor will work with the IHCAFE Extension Advisor to coordinate these training activities with training courses developed for the specific purposes of the this Project, iii) training of extensionists and participant farmers under this Project will be directed at a specific Honduran target group, but results of these activities will provide feedback to regional workers in their development of new technological packages, iv) it is possible that one communications advisor will be jointly funded by USAID/H and ROCAP, and that he will work first in this Project, and then assume responsibilities for duplicating the Honduran experience regionally. There is a strong need for a continuous flow of information between the regional institutions and IHCAFE. The complementary ROCAP and USAID/H projects will reinforce that linkage.

g. Production of New Coffee Plants

In order to ensure an adequate supply of new coffee plants of a highly productive variety, IHCAFE extension agents and researchers will assist about 50 cooperator farmers in a program of plant production. These cooperators will also be eligible for credit under the Project (at a term of one year). Plant production begins in April or May, the year before initiation of renovation activities. To be ready for renovation in 1982, IHCAFE has initiated this activity as of May 1981. The current research director, who will be Project coordinator, is responsible for this activity, and will supervise both researchers and extensionists who assist the farmers. IHCAFE supervision of production and quality control is very intensive, but the number of farmers involved does not create a large demand on staff time. IHCAFE extension agents will assist in the distribution of these plants to participating small farmers.

h. Summary Budget

	<u>A.I.D.</u>		<u>Honduras</u>	<u>Total</u>
	<u>Loan</u>	<u>Grant</u>		
<u>Extension Activities</u>				
Technical Assistance		480		480
Training/Education	437	70	12	519
Operating Costs	45		2,240	2,285
Equipment	256		7	263
Other	<u>262</u>		<u>221</u>	<u>482</u>
Sub-total	<u>1,000</u>	<u>550</u>	<u>2,480</u>	<u>4,030</u>

2. Credit Activity

In addition to technical assistance and training, access by small producers to another factor of production - capital - is indispensable. Furthermore, for a technification program of this nature to succeed, all necessary inputs must be in place at the proper time. Medium to large producers have been able to demonstrate the technical viability of the program, in part because they have been able to finance the costs of technification by tapping commercial sources of credit and by reinvesting their profits. Because of the perceived high risk in lending to farmers with small holdings, banks traditionally have been unwilling to lend funds in quantities sufficient to the task at terms required to make technification feasible. The small producers currently have access to short-term production credit at market rates or higher, depending on the source; but have little or no access to investment credit for financing the initial inputs for technification and providing maintenance until the new trees begin to produce.

a. Nature of the Investment Credit Fund. The investment credit fund will be capitalized by A.I.D. funds of \$8 million and GOH counterpart of \$1 million for a total of \$9 million. Through this fund, investment credit will be made available to producers or producers' organizations. Part of the first increment of credit funds, not to exceed \$500,000, may be used to finance the costs of establishing the nursery plots

necessary to cultivate the coffee plants needed as part of the technification program. Overall, the Mission anticipates that first round lending will occur at following rate: 1982, 17% of credit funds; 1983, 32%; 1984, 25.5%; and 1985, 25.5%. By the last Project year, reflows will begin to finance new Project participants.

Subloans will be made for up to seven year terms. Depending on the degree of improvement required to technify a given parcel of land, a grace period of up to two years will be allowed at which point production will be high enough to enable the farmer to start repaying the loan from production profits. Starting in the first year of production, yearly costs will be financed with follow-on production credit. By the fourth year of implementation, it is estimated that \$10 million will be needed annually. The GOH will covenant to provide the production credit required by Project beneficiaries. This production credit may come from a variety of sources including, but not limited to, the participating banks, the regular Central Bank discount line for coffee, and a special fund capitalized by producers and exporters from earnings on coffee sales to new markets. IHCAFE will prepare a yearly estimate of production credit needs well in advance of actual needs. This estimate will be based on the number of manzanas under specific technification models vs. their stage of development from the previous crop cycle. The estimate will be used by the GOH and the banks as the target amount necessary for satisfying the covenant referred to above.

b. Participating Entities

i. A.I.D. A.I.D. will loan \$8 million to the GOH for the credit activity. Disbursements will be made by A.I.D. on a reimbursement basis to the Central Bank.

ii. Central Bank. The Central Bank will be responsible for overall administration of the investment credit fund. It will make advances to BANCAFE and BANADESA, reimburse them for subloans, request reimbursement from A.I.D. for eligible subloans, and conduct post audits of BANCAFE and BANADESA reimbursement requests. From the interest it charges to BANADESA and BANCAFE, it will cover its own administrative costs, pay the Government the interest due on the A.I.D. loan, and pay IHCAFE an amount to be determined (probably 3-4%) to cover the costs of the credit extension system. It's role in the Project will provide additional assurances that the independent judgement of a banker will be the final determinant of which farmers participate in the Project and will strengthen the probability of subsequent expansion of the Project on commercial terms.

iii. BANADESA and BANCAFE. BANADESA and BANCAFE will approve and administer the subloans, providing all normal banking services.

iv. IHCAFE. IHCAFE will negotiate and approve an Administration Agreement with the GOH and the Central Bank. Within the parameters described here, this Agreement will establish specific operating procedures. IHCAFE also will have a direct role in the management of the fund in that its credit and technical extension workers will identify, and prepare initial financial documents with potential participants. It is anticipated

that IHCAFE's role in the credit approval process will be formalized in a contract with both BANADESA and BANHCAFE, after their role is formally defined in the tripartite Administration Agreement.

c. Credit Procedures. Although A.I.D. will loan the \$8,000,000 destined for use as credit funds to the Government of Honduras, the GOH essentially will grant it for use in the Project, provided that the Project will pay the Central Treasury out of interest earned enough money to cover payment of the interest on A.I.D. loan funds used for credit.

Upon signing of the Project Agreement and the Administration Agreement, the Central Bank will open a line of credit, initially capitalized at US\$1,000,000 in favor of BANADESA and BANHCAFE. As subloans to individual Project participants are authorized by these banks, certified lists of subborrowers and amounts of subloans will pass through the Central Bank to A.I.D. which will reimburse the Central Bank directly. To facilitate implementation, subloan authorizations will be subject to post-audit by the Central Bank. In this manner flexibility will be maintained as to which executing institution will receive what portion of the credit funds, and expeditious implementation will be assured.

More specifically, the credit fund will operate in the following manner:

i. Eligible Sub-borrowers. An individual producer will be eligible for participation in the technification program if he has a total of no more than ten, but no less than one, hectare planted in coffee, earns at least 50% of his total annual income from coffee production, and has an average production per hectare of no more than 15 quintales. Furthermore, it is expected that sub-borrowers will only be located in those areas where agronomic conditions and access to marketing and processing services are developed enough to keep them out of the category of marginal coffee producers.

Sub-borrowers will be asked to provide collateral or guarantees for their investment loans. At the beginning of the Project this will occur in two ways: (1) sub-borrowers may pledge a portion of the value of their land if they have full title; (2) IHCAFE may guarantee the subloan directly with the banks. No producer will be excluded from participation in the Project because of lack of land title. A decree recently introduced into the Constituent Assembly will, when passed, allow coffee producers to purchase the land they farm on a fee simple basis. It is estimated that almost all eligible lands will be purchased and titles granted in this manner. However, the lack of land title has not prohibited coffee producers from acquiring production credit through formal banking channels since both participating financial institutions accept harvest guarantees as collateral on short term loans.

In order to qualify for short term credit to plant a nursery, the potential borrower must be a qualified producer and supplier of new variety plants recognized by IHCAFE.

ii. Farm Financial Plans. In conjunction with IHCAFE's credit extension agents, each producer who meets eligibility requirements and other selection criteria as specified above will draw up a farm plan to be included with his formal application for credit. This plan will cover both the implementation requirements of the most appropriate technification model, specific to the parcel in question, and the costs thereof. Cash flows will be developed which cover the entire period of the technification process (up to 7 years) which will be used as a basis for determining the farmer's total investment credit need and his financial capability for repaying the subloan.

Given that those borrowing for nurseries will be experienced nursery operators, farm financial plans will not be required.

iii. Applications for Credit. The farm financial plans will be the basis for credit applications which will be submitted by the producers, and reviewed and approved by the IHCAFE credit agents. Although potential borrowers will be eligible for subloans as long as they meet Project selection criteria (amount of land in coffee, percent of income attributable to coffee, etc.), their loan applications will be carefully analyzed and reviewed by banking personnel who will actually approve or disapprove the loans.

In the case of nursery producers, applications for credit will be accompanied by a certification of eligibility from IHCAFE. Bank approval or disapproval of credit will be based on its own examination of the nursery operator's creditworthiness and history.

iv. Interest Rates and Terms of the Subloans. At the outset of the Project, the rate of interest will be in the 14-15% range. At a minimum, the interest rate charged on subloans will be high enough to cover:

- (1) part of IHCAFE's costs of administering this program, especially as they relate to the expansion of the credit extension program (estimated at 2%);
- (2) the Central Bank charge for administering the discount line (not to exceed 1%);
- (3) reserve for bad debts of subborrowers (estimated at 5%);
- (4) BANADESA/BANHCAFE administrative costs (estimated at 4%) and;
- (5) repayment of interest on A.I.D. loan funds (2%).

Any additional interest earned will contribute to the further capitalization of the fund. The actual split of interest charges will be defined initially in the Administration Agreement. Interest rates charged for investment credit under the Project will be reviewed annually by BANADESA, BANADESA, Central Bank, and A.I.D. representatives for conformance with the prevailing rates charged for commercial agricultural credit in the local

market and for the effect of changing rates on the microeconomic viability of the Project. The interest rate charged may then be adjusted for subsequent Project entrants as this review indicates.

Terms of the subloans will vary in the following manner:

(1) For producers who undertake total renovation, the subloans will be repaid within seven years with a two year grace period during which interest will be capitalized;

(2) For producers partially renovating their land, the loans will be repaid within four years with a grace period during the first year during which interest will be capitalized; and

(3) For nursery operators producing plants for use in the program, loan will be repaid within one year without grace period. These funds will be available subsequently to finance required investment credit for second and third year entrants into the technification program.

v. Administration of Subloans. Subloans will be made available through two financial entities: BANADESA, the public sector agricultural development bank; and BANHCAFE, a newly formed, private sector bank owned by coffee producers and exporters. Vis-a-vis the subborrowers the banks will perform a three-fold role. The banks will determine the credit worthiness of the subborrowers; they will determine the financial feasibility of the proposed subloans; and they will be responsible for the monitoring of the repayment progress of the subborrowers. Each institution has, or will have, adequate staff to perform this function.

Subloans for farm technification will be received by approved subborrowers in kind and in cash. For that portion of the loan received in kind, the farmer will be required to draw down his approved commodity inputs from the nearest IHCAFE warehouse. Once the drawdown has been verified, the bank will reimburse IHCAFE the cost of the commodity. This procedure is designed to ensure that the technical relationship between producer and the IHCAFE extension service is reinforced at each step in the process.

d. Uses of the Investment Credit Fund. Credit funds may be used by the producer to finance the following:

i. Start up costs of goods and services required in order to technify a parcel of land. This will include, for example, the costs of physical inputs such as new plants and tools, and labor costs such as clearing and preparing the land, planting, and transportation.

ii. Initial costs of maintaining technified parcels. This includes the costs of goods and services required to control diseases, fertilize, control pests, and maintain proper shade during the first

one-to-two years of the technification process depending on the degree of improvement required.

iii. The costs of agricultural inputs and services necessary to establish nurseries. These will subsequently provide new and stronger variety plants to participants in the technification program.

e. Use of Reflows. All principal repayments will finance additional investment credit subloans. Over the longer term, the nature and procedures of the credit fund have been designed so that reflows will serve, at a minimum, to provide resources to the fund at an annual level of \$2 million.

f. Future Availability of Credit for Small Coffee Producers. Once this Project demonstrates the viability of lending for investment to smaller producers who demonstrate sizeable increases in production the banks, especially BANHCAFE whose constituency consists of over 20,000 coffee producers at present, will begin to aid in the expansion of the technification program on their own. This will occur in two ways: (1) a sizeable clientele will have been created who will have proven their credit worthiness and will seek to technify more holdings, and (2) having successfully lent on investment terms to smaller producers, the bank's perceptions of the financial risk involved will have diminished.

g. Summary Budget

	<u>A.I.D.</u>			
<u>Credit Activities</u>	<u>Loan</u>	<u>Grant</u>	<u>Honduras</u>	<u>Total</u>
Credit Funds	8,000		1,000	9,000
Administration			<u>1,200</u>	<u>1,200</u>
Sub-total	<u>8,000</u>	<u>0</u>	<u>2,200</u>	<u>10,200</u>

IV. PROJECT SPECIFIC ANALYSES

A. Technical Feasibility

1. Summary

Rust is the most immediate of several threats to coffee production in Honduras, especially that on small farms. While rust and other natural pests, such as coffee borer (Broca), are biological threats, they are primarily economic problems. The small farmer, facing rising costs of production and relatively low current coffee prices, will not be able to afford the additional costs of disease control without a significant increase in productivity. Without systematic and effective fungicide applications, coffee rust will cause severe premature defoliation and a resulting decrease in yield (of 25-50%). Rust can eventually kill the coffee tree, but it is likely that the farmer would have abandoned his coffee due to poor return before the trees actually die.

The recommended strategy for the small coffee producer is for him to adopt modern, highly productive coffee production techniques. This will allow him to survive the immediate threat of coffee rust, and will provide him a solid basis for his long run welfare.

The primary constraints to this small farm technification program are the present lack of credit and T.A. Basically, the farmer needs to learn proper management techniques. Other technical constraints, such as the availability of water, labor, agricultural inputs, and new coffee plants are not significant problems.

2. Alternative Strategies

Possible responses to the threat of coffee rust in Honduras include: (i) eradication or quarantine, (ii) introduction of resistant varieties, (iii) introduction of alternative crops, and (iv) technification and chemical control. The strategy which is adopted for the Project is the last - technification of coffee farms to increase productivity and permit coexistence with coffee rust and other natural problems.

Eradication of coffee rust is no longer considered feasible. Nicaragua attempted to eradicate rust in 1977-78; and, although the program was nearly successful, rust returned in two years to infest over 19,000 manzanas. It is extremely difficult and expensive to establish the necessary detection system, and to destroy all traces of the disease. Moreover, if rust were not totally eliminated from every other Central American country, it would soon return to Honduras. Quarantine efforts can be of some value in slowing the spread of the disease, but they are not effective enough to warrant significant investment. Quarantine programs typically involve the spraying of cars and trucks entering rust free zones, but they can do nothing against the most effective vectors - wind and man. The modest MNR rust quarantine program has not expressed the need for additional financing, nor is project assistance considered necessary.

The introduction of rust resistant varieties seems to hold the most promise as a long run solution for many small farmers. There are, however, several limitations to this strategy: (i) there are no rust resistant varieties which can be distributed commercially in the new future; (ii) rust resistance may not be permanent; (iii) rust resistant varieties do not, alone, respond to other natural problems such as coffee borers (Broca); and (iv) rust resistant varieties might not respond well to traditional cultivation practices. Research being done regionally and internationally could produce a commercially available rust resistant variety within ten years. Within that time, rust may have already caused severe production and income losses in Honduran coffee production. Moreover, the resistant variety is not, alone, a solution to the small farmers' production problems. Other insect and disease problems or a new strain of rust itself, could neutralize the effectiveness of a resistant variety. Furthermore, it is very possible that the disease resistant varieties which are developed will be most responsive to technified cultivation, and may not be suitable for traditional practices. In that case, they would be of limited value to the small farmer who has not learned modern, technified coffee culture.

For many small coffee producers, the best solution to the economic losses caused by coffee rust will be to grow a different crop. Some farmers may be forced to return to subsistence production of basic grains on land that may not be especially suitable for annual cultivation. In the long run, it may be desirable to introduce alternative cash crops which offer an equivalent economic reward to coffee. It is not appropriate, however, to attempt to combine a strategy of coffee production improvement with a strategy of introducing alternative crops. They are different projects. There is, currently, no alternative crop with a better long run economic promise than coffee. Most alternative crops would involve similar market fluctuations and complex production technology, but there is no institutional support or infrastructure for alternative crops. The costs of mounting a program of research, training and extension based upon an alternative crop would be much higher than a program of assistance in coffee production based upon existing knowledge, institutions, and infrastructure. IHCAFE is managing a program to explore the potential feasibility of alternative crops, and work done by the MNR and regionally at CATIE in farm systems research may demonstrate new crops which are viable substitutes for coffee. The next step of transferring the technology of alternative crops to the farmer will require an entirely different level of institutional commitment and support. If IHCAFE is the institution to take responsibility for the introduction of alternative crops to small farmers in coffee producing regions, it is appropriate that they, first, take the step of directing assistance in coffee production to small farmers.

The best response to coffee rust, both in the immediate future and in the long run, is technification. Technification is the process of increasing productivity through the introduction of improved varieties, increase in foliar area, and improvement of the plants environment. A technification program means that the small farmer can move beyond the margin of economic viability through intensive education in all aspects of coffee production, management and marketing, and through regular access to commercial credit. Technification accomplishes three goals vis-a-vis coffee rust: (i)

it increases the economic return to the farm, so that the farmer can afford the relatively high cost of disease control, (ii) it creates a more orderly environment where chemical control is more efficient, and (iii) it creates a more vigorous plant that is less susceptible to disease. A technification program is entirely compatible with long range research efforts in resistant varieties and alternative crops. As the farmer learns improved coffee production, he becomes much better able to adopt new disease resistant varieties (which may, in fact, require technified cultivation) and to learn the technology of a new crop.

3. Characteristics of Coffee Rust

Coffee rust is a fungus which causes premature defoliation, loss of yield and eventual death of the plant. Untreated, rust is expected to cause a loss of production of about 15% within two to three years of its appearance up to 50% within five to six years.

The amount and timing of the damage caused by rust will depend upon how rapidly it spreads. Rust has spread worldwide from Sri Lanka (Ceylon) where it virtually eliminated coffee production in the 19th century. It appeared in Nicaragua in 1976 and El Salvador in 1979, affecting about 13,000 and 19,000 hectares, respectively. Rust has been reported in two major coffee producing regions of Honduras, near the El Salvador border and in the center of the country (Santa Barbara). The extent of spread will not be known until the dry season ends and the symptoms become more visible.

4. Technification Models

Technification includes a broad range of practices based upon certain agronomic principles. Generally, technification includes the introduction of improved varieties, increase in foliar area and improvement of the plants environment. Improved varieties have characteristics such as: broad and numerous leaves, many buds, an ample root system, and relatively erect branches. Increased foliar area is accomplished by increasing the plant density. Improvements in the plant's environment include: (i) increasing disposable solar energy, (ii) increasing availability of water, (iii) increasing nutrients, (iv) reducing competition and disease, and (v) improving pruning and plant formation. The farmer needs to learn basic principles of improved production, but the specific technologies he applies can vary. The technification program, however, will not advocate the perpetuation of traditional, non-productive practices. If the farmer adopts even a modest level of technological change, his yields will be in the range of 35-45 quintales per manzana. Yields of 80 quintales per manzana are currently obtained on some Honduran farms and experimental yields of 120-150 quintales are not uncommon.

Each farmer will technify according to his own needs and circumstances. However, for the purpose of analysis, it is necessary to reduce the possible technification schemes to two models - total and partial renovation. These models are based upon IHCAFE's best understanding of modern coffee production, and include all agronomic steps, fully costed. They also include the cost of transporting and processing the harvest. The full cost

approach to these models is considered to be appropriate for a reasonable and conservative economic analysis. Total renovation implies complete removal of all coffee and shade, and replacement with improved varieties of both. Total renovation is followed by a complete maintenance program. Total renovation may be the only solution for many typical small farms that have extremely low plant populations, poor varieties of coffee, overgrown coffee trees, and heavy shade. Partial renovation assumes that the farm has coffee trees worth saving. In this case the farmer interplants an improved variety to bring plant population to about 3,300 per manzana, reduces shade by trimming, radically prunes old coffee trees, and initiates a complete maintenance program. It is estimated that 80% of participating farmers will be able to undertake partial renovation and 20% will need to undertake total renovation.

It is important to understand that each farmer will select the amount and type of renovation best suited to his economic and physical circumstances. The farmer may very well reduce the area he has in coffee, still increasing this coffee production through technification, and use the remainder of his land for food crops. Even though there is a broad range of possibilities, for the purposes of analysis it is assumed that all farmers will follow one or the other of the technical models only.

Total and Partial Renovation Models are presented in detail in Annex I, Technical Analysis.

5. Technical Constraints to the Project

The two primary constraints to technification on small farms are lack of effective credit and technical assistance to the farmer. In order to overcome these constraints, the Project places great emphasis on the training of the farmer. Getting the materials for technification is not nearly as difficult as learning how to use them. Additional constraints, beyond credit and T.A., could be availability of: (i) labor, (ii) new coffee trees, (iii) agricultural inputs, and (iv) water.

The labor needed for technification represents a small fraction of total coffee farm labor supply, and the demand for labor in technification comes after the coffee harvest - when there should be labor availability. Total labor requirements for renovating 2,000 manzanas would be equivalent to 750 full time laborers for a ninety day period. There are approximately 167,000 laborers participating in the coffee harvest. The labor problem likely to face coffee producing areas is an over supply due to production losses from rust more than a shortage.

IHCAFE has already initiated a program to increase the production of improved variety plants by three million new coffee plants for the first Project year (of the Caturra and Pacas varieties). Thereafter about five million per year will be needed. Cooperator farmers will receive credit for production of plants through the Project, and will have the incentive of a \$.03 per plant profit for participating. A farmer can grow 100,000 plants in an area 50 mts. x 50 mts. Plant production is an ongoing enterprise, supported by IHCAFE research workers. Currently, there are at least 10-12

million plants produced annually for replacement. Production, however, is limited only by demand. There will be little difficulty in finding 30 coffee producers willing to earn \$3,000 on the management of an area 50 mts. x 50 mts.

The most important agricultural input will be fertilizer. While the number of transactions will be significant, the amount of fertilizer needed for the Project is not overwhelming. Fertilizer will be distributed by IHCAFE through their system of warehouses. The Project's needs (26,000 quintales per year) represents less than 10% of the amount currently handled by IHCAFE. Pesticides (including copper oxichloride) are available through IHCAFE and local distributors.

Water is needed for use in fungicide spraying. Fortunately this spraying coincides with the rainy season, and water need only be collected. IHCAFE extensionists have a simple design for water catchment, requiring a roof of between two and four square meters.

6. Conclusion

The strategy of technification is the most feasible solution to the small coffee farmers' immediate problems, and is the best basis for his long term welfare. It will require, primarily, a significant commitment to training the small farmer and a reliable program of credit. With credit and training provided, the technical constraints to the program are manageable. The technified coffee production will be healthier and require less disease control, and it will generate a better economic return that will permit the farmer to take the immediate disease control measures that are necessary.

Many farmers (about 20%) will have to adopt total renovation to achieve a technified farm. They may do this on a small parcel of land to reduce risk. Other farmers (80%) will have good enough farms that they will be able to technify through a less costly partial renovation plan. Both groups of farmers will be able to afford rust control as it becomes necessary, and will have solidified their technical and economic basis for the future.

B. Economic and Financial Analysis

1. Summary

The economic analysis will evaluate four principal areas of concern: (i) the financial feasibility of the project, (ii) the economic internal rate of return, (iii) the economic incentive to the potential small farmer participant, and (iv) the structure of the internal and world coffee markets. The financial feasibility of the Project includes an analysis of the internal rate of return to the farmer, the cash flow on the farmer's investment, and an analysis of the cash flow of the Credit Fund. The attractiveness of the Project to the farmer is evaluated in terms of: (i) return on investment, (ii) income sensitivity to variations in price and yield, (iii) risk control, (iv) annual cash income, and (v) impact of coffee rust. Generally, the Project should be feasible and attractive to the individual farmer without considering potential losses from coffee rust, and the feasibility analysis considers both cases - with and without rust. In the

aggregate, however, coffee rust will certainly reduce coffee production (by 15-50%), and calculation of aggregate economic benefits to the Project includes as a benefit the potential losses of income to coffee rust which are averted by the Project. Economic feasibility is tested for sensitivity to a drop in world coffee prices. Additionally, the market structure is analyzed to determine whether Project participants will have equitable access to an outlet for their coffee and whether the Project will possibly adversely effect the small producer's market position. The conclusion is that the Project is economically sound, and there are no significant market inequities that would diminish the Project's feasibility.

2. Financial Feasibility

a. Internal Rate of Return to the Farmer

The principal measure of feasibility adopted in this analysis is the internal rate of return. This is the measure of the rate of interest at which the total stream of benefits would be exactly equal to the total stream of costs to produce those benefits. An activity is feasible when that rate of interest exceeds the opportunity cost of capital. This is considered to be an appropriate and descriptive gauge of feasibility for a Project such as this, where benefits are the value of agricultural production and costs are directly associated with that production.

Tables 1 and 2, Annex J, demonstrate the internal rate of return to the farmer under models of total and partial renovation. Both calculations assume full costs of renovation and production, and are adjusted to a current farm gate price of \$70 per quintal. Each table includes a calculation of IRR for rust and no rust cases and at the farm gate prices of \$70 (current average) and \$50. The IRR for no rust is strictly a rate of return to the costs of renovating, or a financial IRR. The IRR for the case where potential losses to rust are considered actually measures the economic rate of return; that is, where benefits include the avoidance of potential losses. In all cases, the Project demonstrates an internal rate of return which indicates financial feasibility. The total renovation scheme, without considering avoidance of rust damage, has an IRR of only 27%. If a farmer has better conditions and can renovate under the lower cost partial renovation scheme, the IRR is 47%. In both cases, the economic rate of return, which includes benefits from avoiding rust losses, is higher - 36% for total renovation and 64% for partial.

If the price of coffee were to decline by 28%, to \$50, and remain at that level for the life of the Project, the rate of return would, naturally, decline. A price of \$50, however, would reduce the average income on a traditional coffee farm to about \$60 per manzana (from \$200), and the small coffee farmer would be on the brink of economic extinction. In that case, technification would be a means to survive in coffee production. The IRR to total renovation is about equal to the opportunity cost of capital, 14%, if rust losses are not considered. The IRR to partial renovation remains considerably above the cost of capital, at 26%. These figures are somewhat higher, 17% and 31%, if the appearance of coffee rust is considered.

b. Cash Flow for Farmer's Investment

Table 3, Annex J, displays the cash flow for 100% financing of the total and partial renovation models. They assume a 5% annual increase in costs, and a 4.5% increase in the price of coffee the fifth and seventh year. The farmer pays off this renovation loan in 7 years, with 3 years grace in the total renovation model, and in 4 years with 2 years grace in the partial renovation model. Both assume a 14% interest rate on the initial investment.

c. Cash Flow of the Credit Fund

Table 4, Annex J, presents cash flow calculations of the \$9 million investment credit fund. The projections of the activity in the fund are based on the following assumptions:

1. The A.I.D. and GOH seed capital will be disbursed at a rate which depends solely on IHCAFE's capacity to deliver the credit and technical assistance to the farmer. This includes an assumption that the demand for this credit will be higher than the capacity to deliver.
2. After A.I.D. and GOH seed capital is disbursed into fund all reflows of principal and capitalized interest will be immediately relent (rounded to nearest \$100 thousand).
3. All subloans will be repaid with the same terms; 14% interest, 2 year grace period and 5 year principal repayment period.
4. The allocation of the 14% interest charged on subloans is as follows:
 - a) 1 point - Banco Central administrative charge
 - b) 3 points - IHCAFE administrative charge
 - c) 3 points - ICI's administrative charges
 - d) 4 points - recapitalization of uncollectible principal
 - e) 1 point - uncollectible interest
 - f) 2 points - payment of A.I.D. loan interest

The cash flow projection demonstrates the viability of this project to the extent that almost \$2 million will be available annually for renovation of additional coffee plantations after the PACD. It is estimated that at this rate of annual subloan activity approximately 10,000 manzanas of coffee plantations will be technified in fifteen years and more than \$27 million will have been disbursed to the farmers. This estimate was computed assuming a 5% average annual inflation rate in the cost of technification inputs over 15 years and a 20-80 split in full and partial renovation of the land.

The assumption of uncollectible debt losses results in an annual charge of more than 20% of the principal repayments for any given year. This rate of uncollectible debt charges may be high given the

demonstrated high rate of return for the activities of this project and the mechanisms contemplated for guaranteeing the subloans by the farmers. Also, IHCAFE will guarantee the level of the fund for any uncollectible debt losses surpassing the amount covered by the capitalization of interest income mentioned above.

The assignment of the remaining interest income as administrative costs to IHCAFE and the banks is not expected to fully cover their costs of providing credit. The substantial additional costs will be borne by the institutions from their general operating revenues and have been included in the financial plan as cooperating country contributions.

d. Estimate of Production Credit Needs

The project participants will require a substantial line of credit to finance the inputs of production on the manzanas affected by the investment credit program. The GOH will be required to assure in a Project Agreement covenant that this production credit will be made available. Table 7, Annex J, demonstrates that a maximum of \$10 million will be needed for this purpose during the five year implementation stage of this project. IHCAFE currently provides \$2.0 million in similar production credit and indicates that the \$10 million can be provided by their program, by capitalization of BANHCAFE, by BANADESA, by special project loans (see other donor programs), by the GOH through the Central Bank, and by private commercial banks. The total credit provided to the coffee sector is currently about \$50 million. An increase of \$10 million by the time Project participants need production credit is feasible.

3. Project Internal Rate of Return

Table 8, Annex J, demonstrates the internal rate of return to the Project. Net Project benefits are measured as the sum of net income gains to small farmer participants. Benefits of the Project include avoidance of rust damage that would cause the small farmers to eventually lose all production on unprotected land. Project costs include all direct A.I.D. and GOH expenses, and annual renovation and maintenance costs of the participant farmers. The Project has a very favorable IRR of 38%. Again, if the worst case is considered, and farm gate price is assumed to drop to \$50 for the life of the Project, the IRR is reduced to 21%. The Project is still very feasible, and the economic hardship caused by low price may be a greater incentive to participate.

4. Economic Incentives to Participate

The fact that the Project demonstrates a high rate of return is no guarantee that the potential benefits will be so perceived by the small farmer. The Social Analysis has shown that the small farmer is an adopter of new technologies when provided credit and technical assistance, but that does not address the specific question of whether the potential small farmer participant is likely to find this particular program attractive. The principle constraints to participation would be: (i) reluctance to assume a long term debt, (ii) reluctance to initiate a process that increases annual

production costs and credit needs, and (iii) uncertainty as to the yields that the new technology will produce. Offsetting these constraints are: (i) the potential for a much higher family income, (ii) an immediate source of income for increased personal or family labor, (iii) the ability to control risk by renovating on a small parcel of land, and (iv) an effective way to avert potential losses due to coffee rust.

Table 1, below, demonstrates the ranges of income by price and yield that a farmer could expect from a technified manzana. His current income (at \$70 per manzana) is approximately \$200 (see Table 9, Annex J). At current prices, the farmer would need to produce only 27 quintales to be better off than he is with a traditional manzana. The expected yield of 40 quintales will produce a higher income on one manzana than he currently earns on five manzanas (\$1,100 as compared to \$1,000). If the coffee price rises by \$10 his potential income is \$1,500 on a technified manzana, as compared to \$270 on a traditional manzana. On the other hand, if market price drops from the already low level, the farmer could earn a reasonable income from a technified farm, but would be on the margin of viability with traditional cultivation (\$700 income per manzana as compared to \$130).

Table 1
Net Income Per Manzana By Price and Yield - Technified 1/
(U.S. Dollars)

<u>Yield</u>	20 qq.	25 qq.	30 qq.	35 qq.	40 qq.
\$60	-500	-200	100	400	700
\$70	-300	50	400	750	1,100
\$80	-100	300	700	1,100	1,500

1/ Production costs are estimated to be \$1,700 - including \$200 in interest on production loans.

The potential for an increased net income per manzana definitely can be demonstrated to the small farmer. A more immediate concern of the small farmer, however, is likely to be his prospects for income during the renovation process. Again, the renovation program can be very attractive. If a farmer has 6 manzanas in coffee, at \$200 per manzana income, his total family income is \$1,200. If he totally renovates one manzana, he is losing \$200 income per year for two full years. If that loss of income is a serious impediment, the farmer can earn all of that or more by investing more of his own labor in the renovation. Labor costs in the first year of total renovation are \$600. (see renovation models, Technical Analysis). Most of this comes in March through June, when there is little other work to be done on a coffee farm, and the farmer should be able to supply up to half of the required labor himself. The second year labor costs total \$230, and are for maintenance activities which are spread out through the year. Again, the farmer can maintain an income close to or even exceeding his normal income by investing his own labor in the project. In the third year, he will have costs of \$1,092, with a production of only 15 quintales on the technified manzana.

This produces a loss of \$42; but again, labor costs represent over \$230, and the farmer is able to maintain a close to normal income. In the fourth year, income from the technified production raises total income over previous levels, and by the seventh year, when all loans are paid off, income from the technified manzana is greater than income from the rest of the farm.

The question of how large a debt burden the farmer will accept is very closely related to how much uncertainty he sees in the proposed technology. In any case, if the farmer is a technology adoptor (as indicated in the social analysis), he can control the relative debt burden and risk by renovating whatever part of his land he chooses. Most of the target group farmers will renovate a parcel of land that produces only as much income as they are willing to forgo, weighing the risk of failure against the potential for a much greater income.

Finally, although the renovation process is attractive to the small farmer on its financial merits alone, the presence or perceived threat of coffee rust will increase its attractiveness considerably. In addition to the fact that spraying costs would reduce income on a non-technified farm by \$80 to \$100 per manzana, the actual presence of rust would cause immediate plant damage that would lessen the farmer's reluctance to remove those plants and start again. The risk of losing an already marginal income to coffee rust, is considered by many small farmers much greater than the risk involved in learning improved production methods.

4. Market Structure

The above analysis indicates that the technification model maintains economic feasibility even under the assumption of a price to the producer of only \$50 per quintal for the life of the Project. The average price to the producer in the current year (1980/81) has been \$70. The world price has been declining since July 1980, and has been below \$120 in the first few months of 1981. The trend, however, has been upward for over ten years, and this long run upward trend will most likely continue. If it does not continue, and the price remains low, the Project becomes even more urgent for many marginal producers.

Two questions, however, remain concerning the marketing system for coffee. First, the existence of a quota system under the International Coffee Agreement raises the question of whether the imposition of export restrictions would affect the small producer disproportionately. Second, the success of the Project depends upon the small producer's having an equitable market outlet within the conventional market structure in Honduras. Will the Project have an effect on the producer's ability to market his coffee?

a. The International Coffee Agreement Quota System

Since February, 1980, there has been a system of export quotas for coffee under the International Coffee Agreement. The majority of coffee producers are members of the ICO and parties to the Agreement. All non-communist consuming countries except South Africa have agreed to enforce the quota. Generally, the quota system will tend to maintain base export

prices in periods of high world supply. When prices are high due to low supplies, the export limits are automatically removed. When prices are low, export quotas can be reduced. If a country produces more than its export limit in a period of low prices, the difference must be sold for local consumption, sold to non-ICO countries, or stored for future sale. All of the options imply sales at a lower price as compared to export to an ICO country. Two questions arise concerning the Project: (i) will increases in production on participant farms cause aggregate production in excess of the quota?, and (ii) if there is production in excess of quota, who takes the loss?

The Project is targetted to increase production on about 6,000 manzanas by a maximum of 30 quintales per manzana. This would represent a total increase of 180,000 quintales. Current production is about 1.8 million quintales. If rust causes only a 15% reduction by the fifth project year (when production would be coming in), the net change in aggregate production would still be a decline of 90,000 quintales (5%). The aggregate losses to rust could easily exceed 15% in that time period. In any case, the Project is unlikely to create production in excess of the current level. IHCAFE's target is to maintain production so that Honduras does not lose any of its export allotment.

If, however, the aggregate production does exceed exportable quotas, it is very unlikely that any individual producer will be foreclosed from the market as a result. There are about 28 exporters in Honduras. None has enough market information or control to predict what its export allotment will be. The individual exporter buys as much production as possible, and is given an allotment by IHCAFE later (up to 3 months after the purchase). It is in the exporter's interest to continue buying coffee in the hope of being able to sell it, and usually with the security of being able to pass storage costs to the producer. Exporters will continue to buy all production, but at a price which reflects the cost to them of storing excess or selling it on a non-ICO market. The average price may decline, but the loss is borne by all producers equally.

Internal Market Effects

The coffee producer usually has several options in the sale of his coffee, and a relatively large number of buyers means that he won't ever be entirely closed out of the market. Two principle problems, however, make the producer's position in the market somewhat weak: (i) lack of bargaining strength, and (ii) lack of financial resources and/or skill to maintain ownership of coffee through more stages of processing. Producers who are able to overcome either of these constraints will receive prices in excess of the average.

The Project will have a positive effect on the small producer's market position by: (i) organizing training groups and encouraging cooperative formation, (ii) increasing his access to credit, possibly allowing him to maintain ownership longer, and (iii) increasing his access to TA, which can eventually include training in on-farm coffee processing. These effects are demonstrated in the Social Analysis. Farm gate price is also shown to be proportional to the degrees of technology adoption. In consideration of these

factors, and because it is IHCAFE's objective to assist producers in marketing, the renovation models used for this Project assume costs of about \$250 per manzana for transport and marketing of the harvest. This would mean that the Project participant receives well over the average price. For the purpose of conservative economic analysis, this increased price is not assumed; however, the Project will tend to promote a favorable market position for the small producer.

C. Summary Social Analysis

1. Description of the Target Group

Small coffee farms in Honduras fall into three types. Micro-farms are primarily gatherers of coffee from small plots of land, typically with no technification. On these farms, coffee is a supplement to subsistence farming but is not a principal activity. Small farms, the second type, are distinguished from micro-farms in the use of a broader range of technological practices and in the importance of the crop to farm income. These are cash-cropping peasant farmers, rather than subsistence farmers, with a primary orientation to the coffee market. The average per capita income of these farmers in 1978 was \$288. Medium-small farms, the third type, utilize improved technology to a greater degree: they tend to have seedbeds or nurseries, and they already plant improved varieties; and they do some repopulation, weed control, pruning, fertilization, and disease control. Their average per capita income was \$386.

The nature of coffee farming on micro-farms makes it unlikely that these will be able to participate in the Project. As discussed in the technical analysis, the area in coffee production must be one or more hectares for technical feasibility. Furthermore, these subsistence farmers are not oriented to the market economy and are not already taking risks in coffee production. Small and medium-small farmers, on the other hand, are already risk-takers and therefore more likely to adopt the technologies by taking long-term investment credit risks.

According to data from a census of coffee farmers conducted by IHCAFE, a total of 81,162 hectares of coffee land are in small coffee farms, comprising 80% of total coffee land in Honduras, and accounting for 60% of total production. Thus, the Project target group is a significant proportion of the coffee production sector in Honduras. Over two-thirds of coffee farms within the target population have between one and 35 hectares of farm land with between one and five hectares in coffee production. Table 3 in Annex G describes the distribution of coffee farms by size and area in coffee. Approximately three-quarters of the target group are primarily coffee producers, with an average per capita income of \$288, more than 50% of which is derived from coffee production.

These target farms are typically independent small holdings. Eighty-two percent of the farmers do not belong to any type of cooperative, thereby placing them at a disadvantage in the receipt of technical assistance, credit, and in marketing relative to the larger producer. Moreover, only a small percentage express any desire to join one. This is not an unusual

finding in an agrarian social system characterized by small family holdings, as is coffee in Honduras, even when there are economic advantages to being organized.

2. Feasibility of Project Interventions

The Social Analysis in Annex D concludes that a good "fit" exists between small farm characteristics, because the Project design has been based on a good understanding of existing conditions. Credit arrangements will overcome the land tenure constraint. The hired labor constraint is addressed by providing labor costs as part of the investment credit amounts. Training approaches will address the constraint posed by a low level of organization.

A key to understanding the social feasibility of the Project is the examination of risk-taking and motivation among small farmers. Since the Project is not introducing a new crop, target group farmers will not be confronted with a substantially new risk environment. The technologies to be introduced are not unfamiliar to most farmers. As demonstrated below, the low existing level of technification is related to access to technical assistance and credit.

To elucidate the factors that lead to adoption of technology by coffee farmers, the social analysis contained in Annex D examines two project assumptions: (i) that small coffee farmers will adopt the production technologies made available through the credit and technical assistance activities; and (ii) that farmer income will increase as a result of the adoption of these technologies, consequently providing sufficient incentive for farmers to participate. These assumptions are tested by analyzing data from the small farm surveys conducted in Honduras for the Agriculture Sector Assessment of 1978 and by IHCAFE in 1979. The analysis clearly demonstrates that as long as farm gate prices do not fall below \$65 per quintal, as detailed in the financial and economic analyses, the provision of technical assistance and investment credit will lead to the adoption of the desired production technologies, and that the increase in both the absolute and relative incomes of the target population is sufficient to provide an incentive for farmers to participate.

Both the absolute and relative income gains to the producer are, however, constrained by the structure of the marketing system. The income and income share received is somewhat dependent on the state of the crop at the time of sale and on the type of buyer. Coffee sold as unprocessed berries (uva) gets a significantly lower price than dried coffee (pergamino). The price difference is large enough so that the investment credit package is not cost-beneficial to the farmer who sells "uva". Survey data indicate that approximately 7% of target group farmers do not have the technology to process coffee to the "pergamino" stage. It will be necessary for these farmers to acquire such technology as part of their investment credit package. The project credit fund provides enough financing for this.

The project technical assistance and training activities will be delivered in such a way as to encourage independent small farmers to join or

organize cooperatives, as the price to the farmer who sells to cooperatives is significantly higher than the price paid by commercial middlemen. The difference in price is not as large as in the case of processing. Even at the lower price paid by commercial middlemen, the investment credit package is affordable. Thus, the advantage of cooperative membership is that it will increase the farmer's net profits. Surveys indicate that a sizeable group of farmers are not interested in joining cooperatives. Thus the Project cannot adopt a strategy which would require beneficiary farmers to join a cooperative. The strategy to be adopted is for IHCAFE to continue its work in organization of cooperatives where none exist, while promoting the advantages of cooperatives through the technical assistance and training components of the Project. IHCAFE is in the process of obtaining financing for a network of cooperative beneficios to process and market coffee. Thus, small coffee farmers will be educated as to the advantages to be gained through coop membership and they will be provided the opportunity to do so if they so choose.

3. Project Spread Effects

The Project design estimates that during the life of the Project approximately 3,100 to 3,200 small and medium-small coffee producers will be aided. This represents approximately 12% of the total target population of 26,420 farms. If it is assumed that these farms are proportionally distributed by size class as presented in Table 3 of Annex D, then approximately 9,833 hectares in coffee will be reached by the project. This represents 12.1% and 9.7% of the area in coffee for the target population and the national total, respectively. It is expected that women will participate insofar as they contribute to family labor on the farm, and benefit from any general economic improvement of the farm resulting from the Project. No adverse effects on women are anticipated. The Government of Honduras will covenant to continue providing credit to these same farmers and gradually to expand the effort to include additional small and medium-small producers. This augurs favorably for substantial and long-term spread effects within the target population.

There are three main sources of spread effects anticipated in the Project's design. The first is within the target group itself. As the benefits of the Project become evident to the original participants, it is expected that they will gradually technify more of their existing coffee land. Second, the demonstration effects can be expected to influence neighboring farmers to attempt a technification program on their own lands. Third, as IHCAFE develops, tests, and refines its technical assistance delivery capability, it will be able to include increasing numbers of the target population within a permanent on-going technification program.

4. Impact on Women

Women play a more important role in the production of coffee than in any other small farm cash crop in Honduras. A significant proportion of the harvesting, processing, and sorting of coffee beans is carried out by women. Although comparable data are not available for Honduras, anthropological analysis of coffee production in southern Mexico has

demonstrated that women tend to participate to a greater degree in the production decision-making process in coffee than in traditional crops such as maize, because of the critical role of women's labor. This Project, by keeping small farms in production despite rust, will protect a source of employment for women and prevent a deterioration in the income position of small coffee farms and thereby protect family welfare in general.

D. Administrative Feasibility Analysis

This Project involves three organizations; IHCAFE, BANADESA, and BANHCAFE. IHCAFE will assume major administrative responsibilities for the program while the two banking institutions will provide credit administration, including processing applications, making disbursements, receiving collections, and maintaining accounting records. The following analysis shows that IHCAFE is capable of managing this Project in addition to continuing its current on going functions. Further it is shown that BANADESA has the capacity to adequately administer the planned credit activities and that BANHCAFE, in due course, is expected to provide active support to the program including credit administration responsibilities.

IHCAFE

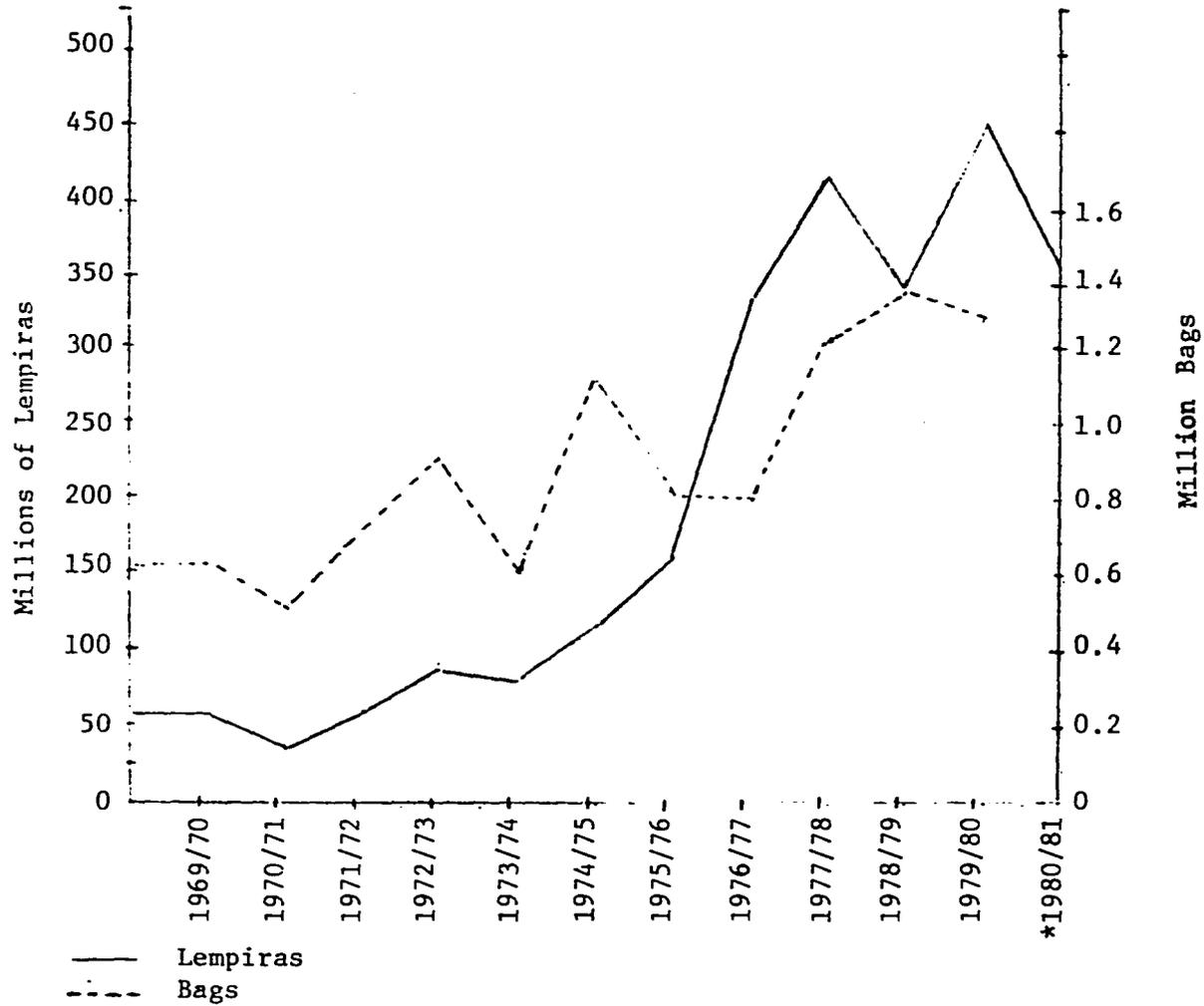
1. Background. During the 1960's the Government recognized the importance of diversifying agricultural production. Historically bananas were the primary export product; coffee and lumber were the other more important export products, each representing approximately 50% of the export value of bananas. In 1970 the Government initiated a program to improve the quality and quantity of coffee production. One of the more important parts of the program was the creation of IHCAFE, a semi-autonomous organization responsible for the development of improved coffee production. Over the past ten years IHCAFE has become recognized as one of the more successful and well organized agricultural institutions. Coffee production over this period doubled and, in terms of export value, now ranks equal to bananas. Exhibit 1 presents an overview of the growth of the value and volume of coffee exports over the past twelve crop seasons.

IHCAFE has a wide range of activities including control of coffee exports through the issuances of export permits, protection of the local domestic market through export restrictions, price stabilization for locally marketed coffee, provision of fertilizers and plants/seeds, and a wide range of technical assistance to producers throughout the country. In addition IHCAFE manages several special funds related to coffee production and processing. The 1980 year end balance of these funds approximated \$23 million, most of which were used to stabilize coffee prices for local consumption, and to provide credit for new or expanded coffee processing facilities.

VALUE AND VOLUME OF COFFEE EXPORTATIONS

EXHIBIT 1

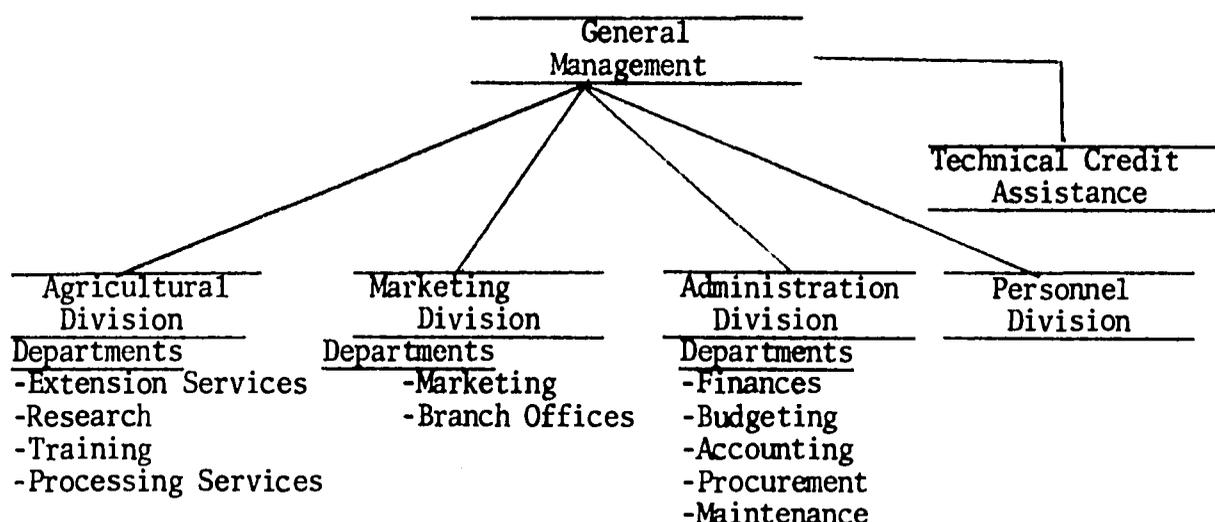
Bags - 46Kgs.



*Estimated

2. Organization and Function Analyses. IHCAFE is controlled by a Board of Directors consisting of key ministers and representatives of the coffee producer associations. The organization has continued to expand its functions and operations and now employs approximately 525 persons most of whom are considered to have excellent qualifications for their responsibilities.

An overview of IHCAFE's primary operating departments and organization plan is presented below:



The organizational sections critical to the program are the Agricultural Division and the Technical Credit Assistance Department. Currently the Technical Credit Assistance Department operates as a support activity; as a result of this program and the addition of 20 credit agents, IHCAFE management is considering a reorganization to give the technical credit assistance group the status of an operating division. This change would be advantageous because the role of credit to the small producers would become a permanent continuing activity with the natural bureaucratic tendency to increase its level of operation and responsibilities within the limits of available funds and human resources. Moreover, since IHCAFE is to guarantee most credit under this program it is important that there be adequate internal control within IHCAFE's operating procedures to ensure that credit activities follow established parameters and guidelines and to prevent possible abuses. There are two fundamental steps in the approval of credit - the development of a farm operating plan, and assistance to farmers on obtaining credit. It is envisioned that the agricultural division will be responsible for developing the farm plans and that the technical credit department will be responsible for assisting farmers to obtain credit and use it wisely.

The operating capacities of the IHCAFE agriculture division and the technical credit assistance department are considered critical to the success of this program and are reviewed in detail below. The marketing, administration, and personnel divisions are of less importance and only a summary overview of their activities related to this program is presented.

a. Agricultural Division

The agricultural division is the largest and most important in terms of evaluating IHCAFE's capacities to manage this Project. The division employees approximately 340 persons and consists of the following departments:

i. Extension Services: This department is responsible for IHCAFE's field activities with coffee producers and is possibly the most important to accomplishing IHCAFE's objectives of improving production. The department currently employs 85 extension agents in nine regions with 53 agencies throughout the country. Most of extension agents are high school graduates with training in agronomy and eight are graduate agronomists. These are high qualifications for personnel assigned full time to the rural areas.

The functions of the extension services department involve a wide range of technical on site assistance including:

- development of farm plans and investment studies;
- applying for credit in conjunction with the Technical Credit Department;
- reviewing farm/plant construction projects, equipment installation and/or the operation of coffee processing plants;
- providing consulting services regarding fertilization, disease control, plantings, shade planning, replanting, soil testing and green house operations;
- training and mass education programs

During 1980 the extension services department's operating statistics show that visits and technical assistance were directly provided to 5,243 individual producers, and technical assistance was indirectly provided through cooperatives and associations to another 2,240 producers. In addition to these technical consultations the extension agents:

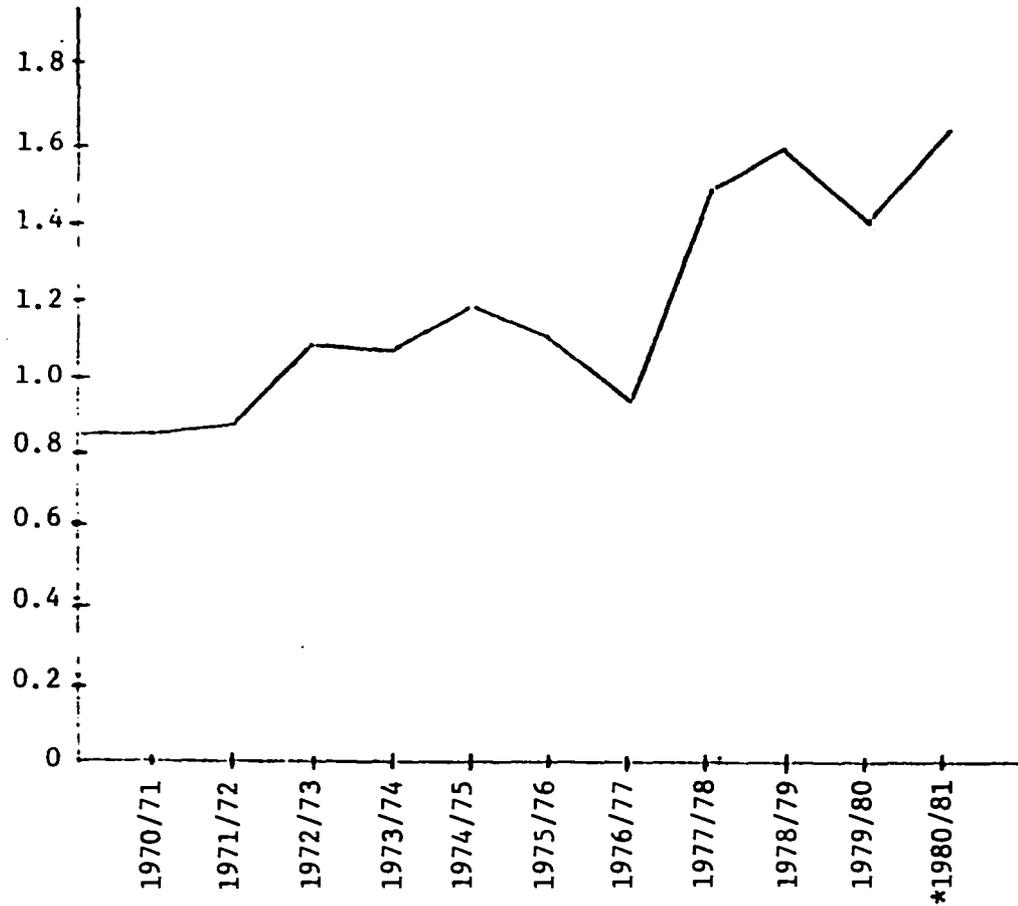
- distributed over 22,000 lbs. of seed;
- distributed over 4 million living plants;
- programmed fertilization for over 24,000 hectares;
- supervised cleaning for over 43,000 hectares;
- assisted in replanting over 8,000 hectares;
- assisted in disease control for over 6,000 hectares;
- supervised pruning and shade control for over 21,000 hectares;
- conducted 748 soil analyses;
- taught 96 formal courses;
- participated in 70 relevant conferences;
- assisted 30 coffee cooperatives;
- conducted over 5,600 demonstrations.

A historical survey of the above statistics show steady annual increases consistent with the number of extension agents. These statistics compare favorably with the annual production of coffee where production approximately doubles over the 10 year period ending in 1980; refer to Exhibit 2.

NATIONAL COFFEE PRODUCTION

EXHIBIT 2

Bags - 46Kgs.
(Millions Bags)



*Estimated

Notes: (1) The decline in reported production during the four year period ending with 1977/78 crop was a producer reported understatement in order to market coffee through El Salvador and Nicaragua markets.

Under this Project IHCAFE will be assuming major new and additional responsibilities in developing small farmer investment plans, credit evaluations, and general credit application assistance. It is established that a field agent can effectively assist 100 producers, consequently, 30 additional agents will be needed under the project. Ten additional extension agents will be hired - an increase from 85 to 95. Twenty credit agents will be hired and will also be involved in on-site field activities. In sum, the project will require the assistance of the equivalent of 40 agents - about a third of IHCAFE's total field force - by the Fourth Project year. To serve present farmers in addition to new participants, the ratio of farmers to extension agent will increase from 60 to 85. This increase will be made possible by the addition of 20 credit agents and the more effective division of labor. Credit activities have been consuming an inordinate amount of the extension agents' time, partially because all the extension agents are agronomy specialists and not loan specialists. Under this Project credit agents will specialize in credit related activities which will permit the extension agents to more effectively utilize their efforts. This Project also provides for 30 vehicles required for the new extension/credit agents.

ii. Research: This department conducts various studies and investigations in order to provide technical recommendations and standards for coffee production. The department consists of seven sections including:

Soils
Cultivation Research
Coffee Processing Systems Analysis
Socio-Economic Studies
Biological Studies
Disease Control

This department represents Honduras' most qualified coffee research resources. The staff includes graduate agronomists and scientists working in the areas of field production and processing, plant pathology, plant propagation, disease control and fertilization plans. During 1980 this department: (1) completed or continued 27 technical studies; (2) continued to monitor production on the experimental demonstration farms; (3) conducted 360 demonstration sessions on the experimental farms including 87 extension agents; and (4) made 206 special purpose field visitations and consultations.

iii. Training and Education: This department's training responsibilities include: (1) the development of courses and materials, and providing the external training for coffee producers on farming techniques and management; (2) the development of internal training courses for IHCAFE extension agents; and (3) the development of mass education programs, using printed bulletins and radio programming.

During 1980 the training accomplishments included the delivery of 73 courses with 2,523 attendees, as follows:

- 67 producer courses in 8 locations throughout Honduras emphasizing cultivation techniques to 2,358 producers;
- 4 extension agent courses covering the transfer of production techniques and providing credit application assistance to producers; 68 extension agents participated in these courses; and
- 2 other special coffee cultivation courses were provided to 107 attendees

The training objectives for 1981 include 60 external courses on technical procedures for coffee producers and 6 internal courses for extension agents. By 1982, Project training activities will increase the scope of in-service training, as shown below, and assist in the increase of farmer training activities by the extension service.

The mass education programs consist of two major efforts including the preparation and distribution of technical bulletins covering essentially all phases of coffee production, and providing material for nine weekly radio programs that cover all major coffee producing regions. Additionally, as part of its social commitment, IHCAFE sponsored ten remedial courses to teach reading skills to coffee producers. During 1980 this department prepared nine major general interest technical bulletins covering coffee production and distributed over 17,000 copies. Additionally, a variety of other materials covering special topics were prepared and over 4,000 copies distributed. The 1981 program includes:

- (1) continuation of the technical bulletins based on the needs and/or conditions of the producers.;
- (2) increasing the number of weekly radio coffee reports to 12 radio stations to reach a greater number of rural producers having limited access to other sources of technical information; and
- (3) development of a technical coffee library and a mechanism for coordinating technical development information between Honduras and the other Central American countries. Several information exchange visitations are scheduled.

Based on a Mission review, IHCAFE's training and education program needs to be strengthened. Under this Project the Training and Education Department's programs for the period 1982 through 1984 will be expanded to include:

Training

- 18 regional two-day courses, each of which is to be designed for 30 participants;
- 6 central workshop sessions, each of which is to be a four-day program for 30 participants;
- 12 three-day field trips with 12 participants each;

- increased in-service supervisory training, on a spot basis;
- 2 international training courses for 6 participants;

Education

- 6 special bulletins covering this Project and 6,000 copies will be made available;
- expanding the educational scope of radio broadcasts, thus increasing coverage by 50%;
- equipping and putting into service two mobile training units.

To assist this department in accomplishing the above, this Project provides technical assistance and training costs for improving the content of the training programs and meeting the objectives outlined above.

iv. Processing Services: This department provides technical assistance in the design, installation, and operations of coffee drying and processing to improve the overall quality of produced coffee. During 1981 seven new processing centers are scheduled to increase coffee production by 43,000 quintales at an investment of approximately \$1 million.

b. Technical Credit Assistance Department

IHCAFE created this department in 1974 in conjunction with a program to provide credit to coffee producers with from 1 to 5 manzanas. The funds were provided and the loans managed by BANADESA, IHCAFE acted as loan guarantor. These activities continued with only minor changes until 1979 when IHCAFE initiated a new credit program with BANADESA. The new program provides replanting and/or rehabilitation credits to all producers using IHCAFE funds. The loans were 5 year term with a 3 year grace period; the Bank managed the loan and when the borrower had a poor credit rating, IHCAFE would guarantee the loan. At the end of 1980 the loans in this fund approximated \$1.4 million, and IHCAFE has programmed an additional \$1 million during 1981. (Note: The primary differences between the current credit program and that proposed in this Project is the emphasis on the small coffee producers). The departmental staff consists of credit specialists working in Tegucigalpa who are responsible for: (i) the analysis of credit applications received from the extension department; (ii) maintaining liaison with BANADESA on the status of the loan portfolio; and (iii) participating in negotiations with other financial institutions to acquire additional lines of credit.

At the present time, practically all of the IHCAFE loan guarantee activities are performed by the extension agents. The activities include development of farm plans, credit applications, and approval of disbursements. The regional supervisors have authority to approve loan guaranties up to \$1,500; loans over that amount are approved by the main office, personnel. The extension agents also follow-up on the loans and assist in collecting when loans become delinquent. BANADESA provides a loan status report to IHCAFE every three months. (Note: Based on BANADESA's experience, coffee sector production loans have one of the lowest delinquency

rates of any of their crop based loans and investment credits in the coffee sector are generally considered to be the highest quality of loans in the Bank's portfolio).

The technical credit assistance department provides assistance in obtaining credits for the entire coffee sector. IHCAFE is responsible for coordinating efforts through the Government and the Central Bank to assure adequate credit is provided from both public and private sources. Representatives of the Central Bank estimate that total 1980 credit requirements for the coffee sector approximated \$50 million from all sources. The technical credit assistance department's 1981 objectives are to provide assistance in generating and/or participating in negotiations for \$20 million of credit to the coffee sector as follows:

<u>\$ Million</u>	
IHCAFE/BANADESA general credits -- BANADESA funds	1
IHCAFE/BANADESA producer investment credits -- IHCAFE funds	1
General credits - private banking system funds	8
IHCAFE fertilizer/equipment credits -- IHCAFE funds	2
Coffee cooperatives credits -- IHCAFE and cooperative funds	2
	<u>20</u>

As noted above the organizational position and responsibilities of this department are expected to be revised as a result of this Project. Currently it is a support department, however, in view of its expanded responsibilities in coordinating the small farmer loans under this program, IHCAFE's management will change the department to a line operating activity. The addition of 20 credit agents will change the operational capacity of this department and it is the Mission's expectation that an increase in IHCAFE's ability to provide responsive assistance for obtaining producer investment credit will result in more funds being made available from the Asociacion Hondurena de Productores de Cafe and other sources. As more credit becomes available an increasing number of credit agents will be required etc., and this process will repeat itself until the producers' demand for investment credit is substantially reduced. New operating procedures and practices will be developed during the initial start-up period with the scheduled technical assistance.

c. Marketing Division

This division is responsible for controlling the export of coffee, managing coffee allocations for local consumption, monitoring inventory levels, certifying and/or verifying coffee quality gradings, and maintaining controls over foreign exchange earnings. The activities of this division generally will not impact on the implementation of the Project.

d. Administration Division

This division is responsible for obtaining the funds necessary for the programs, budget preparation, accounting, procurement, and maintenance activities. The accounting system utilizes three NCR 32 posting

machines, and a special study is now in progress to determine alternatives for automating certain accounting functions using mini-computers. The Chief Accountant indicated that IHCAFE would begin transferring certain systems to an automated basis by early 1982. A Mission review of the IHCAFE accounting and information control systems did not reveal any major weaknesses, and it was concluded that IHCAFE's accounting capacities were sufficiently adequate to administer this program.

The accounting department is also responsible for the administration of all fertilizer and other agricultural input sales. Purchases of the agricultural inputs are based on estimated usage as determined by the Agricultural Division. The accounting department has responsibility for receiving the goods and distributing them to the nine regional warehouses. Credit sales are made based on the written authorization of the extension agents; cash sales are made directly to producers. IHCAFE's 1980 agricultural input sales approximated \$3.8 million. The average agricultural input inventories approximate \$4 million. It is estimated that the additional demand for agricultural inputs resulting from this Project will be 11% of the new credit available. Thus during 1983, the peak credit year when \$2.5 million is scheduled for disbursement, the additional demand for agricultural inputs will approximate \$275 thousand, or less than 8% of the current level of agricultural input sales. Mission studies show that the administration division has the capacity to satisfactorily implement this Project and, with the possible exception of only short term technical assistance, does not need additional support.

e. Personnel Division

This division is responsible for all personnel matters including employee relations, salary levels, etc. In comparison with other Honduran organizations, IHCAFE's pay schedules and benefits for field based personnel are excellent. This facilitates IHCAFE's attracting and maintaining qualified personnel in the rural areas. (Note: IHCAFE is an autonomous institution and it is not subject to the civil service pay scales. Starting extension agents, for example, earn \$425 per month excluding benefits. This is more than double that paid by the Ministry of Natural Resources for qualified extension personnel).

3. Financial Review

At the end of 1980 IHCAFE's assets totalled approximately \$23 million. Approximately \$5 million represented operating facilities, vehicles and equipment; approximately \$10 million represented fertilizer inventories and receivables resulting from related credit sales; and another \$8 million represented a variety of invested funds, receivables, and other deferred assets. Financing for IHCAFE's programs are largely provided by loans from the Government and other institutions; IHCAFE's capital at the end of 1980 approximated \$2 million. IHCAFE management is currently investigating sources of additional capital.

IHCAFE's annual operations basically are supported by revenues from the issuance of export permit fees and price adjustments paid by producers based on the quality of coffee retained for local consumption. IHCAFE's other revenue producing activities are: the purchase and distribution of fertilizers (approximately \$4 million in 1980) and the purchase and distribution of coffee for local consumption (approximately \$4 million in 1980). Both are essentially non-profit activities. The 1980 operating revenues approximated \$15 million - \$6 million of this was from export fees and price adjustments, and the other \$9 million was from fertilizer sales, coffee sales and other miscellaneous activities. The operating expenses for the programs described above, including the extension services, were approximately \$8 million during 1980. IHCAFE incurred an operating loss of approximately \$1 million for 1980; operating losses for the five years ending 1980 averaged \$363 thousand per year. These losses are largely due the accounting treatment of expensing costs rather than capitalizing the costs as assets and subsequently amortizing over the life of assets. Also, management has attempted to control expenses but IHCAFE's consistent year to year growth has and probably will continue to produce operating losses.

In addition to IHCAFE's normal operations, it also manages special funds approximating \$23 million at the end of 1980. These funds are provided by other public institutions and private banks and are used to finance: (i) coffee processor equipment requirements, (ii) loan funds to BANADESA and related coffee cooperatives, and (iii) the coffee price stabilization program. This Project represents an additional \$9 million of funds available for credit to IHCAFE which is an approximate 40% increase in assets. The necessary controls and management skills required to properly carry out this Project are to be provided to IHCAFE under the technical assistance program, and in the strengthening of the organization's credit administration activities.

Although IHCAFE does not issue certified financial statements, the interrelationships between the various activities and the individual provider(s) of the funds assures a reasonable degree of control over the reported results of operations. Financial audits of will be required under this Project.

4. Conclusion

IHCAFE operations, as described above, demonstrate its capacity to manage this Project. The planned 1981 scope of its operations, especially in the rural areas through the Extension Services Department, is compatible with the additional activities of the Project. In fact, as noted, IHCAFE and BANADESA now have a small scale farm improvement loan program and this Project will build on that experience. The actions IHCAFE must take to adequately prepare for the implementation of this Project are within its ability and resources.

BANADESA

1. Background and Financial Overview

BANADESA was created in March 1980 as the national agricultural bank; it assumed the activities which previously were administered by the Banco Nacional de Fomento de Honduras. It is the primary governmental institution responsible for financing agricultural development and related production processes. BANADESA currently has 28 banking agencies now serving agricultural clients throughout Honduras. Currently BANADESA is the only banking institution with experience in working with small farmers. The bank's loan portfolio comprised approximately 40,000 loans totalling \$84 million at the end of 1980, of which approximately 13,000 loans were classified as small farmer loans.

BANADESA also has been one of the primary credit intermediaries for coffee production. At the end of 1980 BANADESA's credit to the coffee sector approximated 12,000 loans totalling \$17 million - approximately \$11 million to finance trading activities and \$6 million for farm improvement and processing equipment. Additionally BANADESA is beginning to implement revised credit administration procedures developed under a technical assistance program provided by A.I.D. These revised procedures are expected to simplify BANADESA's credit granting processes and should substantially improve the Bank's responsiveness to the total agricultural sector. The bank is currently developing a decentralization plan which it expects to implement during late 1981. This plan should further improve the bank's rural operations and responsiveness because the decentralization plan will transfer many of the credit decision making responsibilities from the main office in Tegucigalpa to the agency level.

2. Conclusion

BANADESA's capacity to manage the credit activities of this Project is clearly demonstrated by its current position as the primary source of credit in rural areas and its ongoing program with IHCAFE to provide farm improvement credits, as described under IHCAFE above. Although BANADESA is represented throughout the country there are potential advantages to the success of this Project by having alternative intermediary facilities for managing the loans. BANADESA is committed to the total agricultural sector rather than to only coffee producers and the Bank's responsiveness to the credit administration needs of the small farmer will depend on existing priorities. Implementation for this Project has been designed to provide for an alternative mechanism for loan processing to include a competition element to better assure responsive intermediary action to IHCAFE's request for small producer loans. The following section describes BANHCAFE which may be an important financing intermediary for this Project.

BANHCAFE

1. Background

BANHCAFE was created by Decree No. 931 on May 7, 1980. The Bank's objectives are to provide financial services to the coffee sector, specifically providing credit for production, industrialization, commercialization and the promotion of agricultural diversifications by coffee producers. Additionally the Bank will provide all normal commercial banking services and plans to participate in special development and/or social programs relating to the coffee sector. Bank management has indicated a high level of interest in this Project as one of BANHCAFE's initial special development programs.

BANHCAFE's legal authorized capital is \$25 million; four classes of \$5 par value stock have been approved with the following basic subscription restrictions:

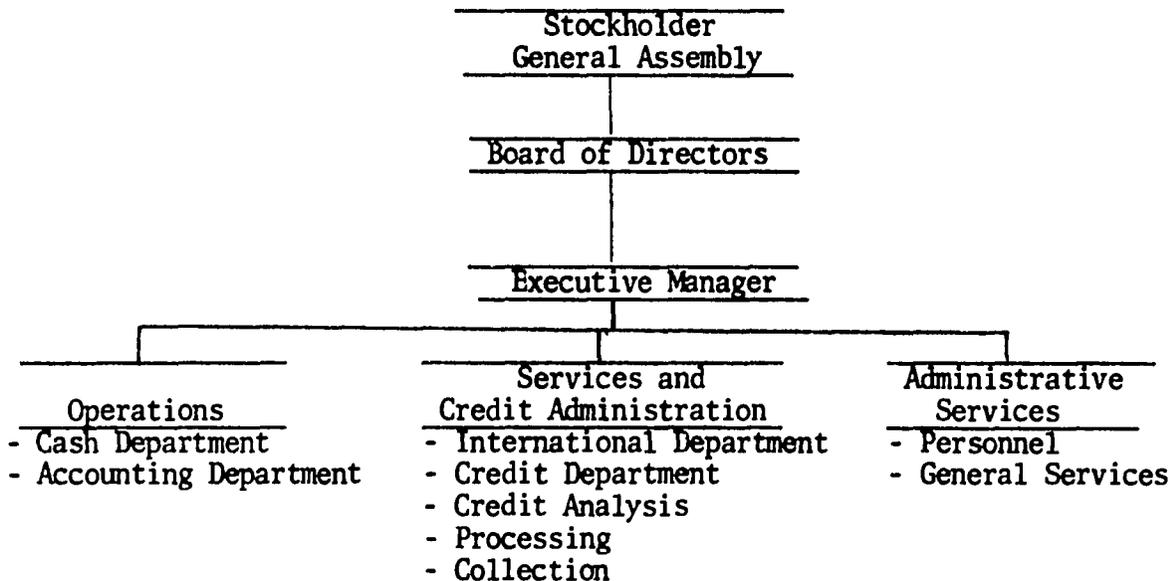
- Class A Stock: represents 60% of total authorized capital and may be issued only to coffee producers or coffee producer associations;
- Class B Stock: represents 15% of total authorized capital and may be issued only to coffee exporters or coffee export associations;
- Class C Stock: represents 5% of total authorized capital and may be issued only to coffee processors or coffee processing associations; and
- Class D Stock: represents 20% of total authorized capital and may be issued only to IHCAFE.
- No more than 5% of the classes A, B, and C stock may be subscribed by any one entity in the respective categories.

The Board of Directors consists of seven coffee sector representatives elected for two year terms. Class A stockholders elect four of the directors; Class B, C and D stockholders elect one member each. Directors are limited to two year terms. The Board is scheduled to meet at least monthly to review the Bank's operations and provide policy guidance.

Although the Bank is a private institution, its ownership structure is unique in that it is owned and governed by individuals and associations whose primary business interest is the coffee sector.

2. Organization

BANHCAFE's organization plan is presented below:



The Bank's principal office is in Tegucigalpa, which is scheduled to be open to the public on May 4, 1981. The physical facilities of the Bank are modern and adequate. A NCR - Banker 80 system has been acquired and a review of the Bank's credit administration procedures indicated that management plans to follow generally accepted lending procedures for its portfolio administration. With the NCR system and the credit administration procedures, BANHCAFE's record keeping and information system should be reasonably well managed and controlled. There are currently 25 employees supporting the Tegucigalpa operations and the bank management is currently negotiating for office space in San Pedro Sula. Bank management is also planning smaller agencies in three other coffee centers in Honduras; Santa Barbara, Copan and El Paraiso. The present plan is to develop a mobile banking unit to serve other rural areas.

A Mission review of BANHCAFE personnel shows that the key operating personnel are well qualified. For example, the President served as the Acting President of BANADESA for two years and the Credit Manager is U.S. educated with a background in the coffee sector and experience with a large U.S. international company.

Bank management has indicated an interest in providing credit to small coffee producers and for coffee nursery operations under this Project. In order to meet its responsibilities under this Project, BANHCAFE will initiate corresponding relationships with other banking institutions that presently serve the rural areas.

3. Financial Overview

Although BANHCAFE is a private banking institution, it is unique because of special mechanisms for generating capital. There are currently two potential mechanisms that may result in significant cash inflows to BANHCAFE as follows:

(1) The Association of Coffee Producers has imposed a special assessment fee of \$2 per quintal of coffee exported; these funds are to represent paid-in capital by BANHCAFE and Class A shares will be issued to the respective producers. The Association of Coffee Producers plans to review the assessment activity and BANHCAFE's use of the funds on an annual basis.

(2) IHCAFE and the Association of Coffee Producers is considering using the differences between: (a) the established price for domestic controlled production (20% of total production) which is currently \$45 per quintal, and (b) the selling price of the excess coffee to new markets as additional credit funding for small coffee producers. This difference has been averaging approximately \$10 per quintal and, based on 1981 estimates this mechanism could conservatively generate an additional \$1.8 million of available credit funding during the 1981-82 season.

These arrangements demonstrate the coffee producers concern with the availability of credit to the coffee sector, and this arrangement provides a mechanism for developing a credit institution where the producers become owners of that institution and will be able to share in future profits.

BANHCAFE's paid-in capital as of March 1981 is approximately \$4 million; Bank management estimate that paid-in capital will be nearly \$7 million at the end of 1981. Additionally, management is planning on attracting approximately \$8 million in deposits from other private and public sources during the current year.

4. Conclusion

Although BANHCAFE is in a pre-operative stage, there are good indications that the Bank will have sufficient capacity to participate effectively in this Project. Another factor of equal importance is BANHCAFE's commitment to the coffee sector and, more specifically, its management's expressed interest in providing credit facilities to the smaller coffee producers. This Project gives BANHCAFE a unique opportunity to rapidly expand its services in providing financial services to the coffee sector. Additionally, BANHCAFE's successful implementation may be sufficient grounds for the coffee producers and IHCAFE to independently increase the amount available for credit.

E. Environmental Concerns

The proposed technification program will permit several thousand small coffee farmers to continue producing this cash crop rather than revert to the cultivation of subsistence crops. This will be beneficial to the conservation of soil in Project areas. Increased pesticide use can have a negative effect on watershed areas, but this will be minimized by farmer training in wise pesticide use, and by the use of highly degradable, low toxicity pesticides in compliance with A.I.D. and EPA regulations. All pesticides used by Project participants will be purchased in compliance with the regulations of Handbook 3, Appendix 4 B, Section 216.3(b). IHCAFE is being assigned a resident pest control specialist under a loan from the Government of Great Britain, and will be provided with short-term training in pesticide residue analysis through the ROCAP Project. This Project will complement these efforts by providing in-service and farmer training in proper pest control techniques (integrated pest management), using short-term advisors from OIRSA, ICAITI, ROCAP, USDA, and other sources. In addition, IHCAFE will train farmers in the use of low-volume sprayers which reduce considerably the volume of chemicals applied. Again, the Government of Great Britain is donating 5,000 such sprayers to Honduran Coffee Farmers (through IHCAFE).

A negative determination in the I.E.E. was concurred with in the approved Environmental Threshold Decision; see Annex L.

V. FINANCIAL PLAN

This Project represents a \$9.55 million assistance program to improve the small coffee farmers' production capacities. The total program costs over the planned five year implementation period are \$14.230 million which includes a Government of Honduras contribution of \$4.68 million.

Exhibit I summarizes the overall financial plan for the Project. A.I.D. will provide 67% of the Project funding, as follows:

<u>USAID</u>	<u>(000's)</u>	<u>%</u>
Loan	\$9,000	63
Grant	550	4
Total USAID	<u>9,550</u>	<u>67</u>
Total GOH	<u>4,680</u>	<u>33</u>
Total Project	14,230	100

Of the total A.I.D. contribution, \$8 million, or 84%, will be used to establish a revolving credit fund. The GOH will provide an additional \$1 million bringing the total investment credit fund to \$9 million. The remainder of A.I.D.'s contribution equals \$1.55 million and is programmed to strengthen IHCAFE's extension service activities including assistance in processing small farmer credit applications for the technification program. The grant funds of \$.55 million are scheduled to provide technical assistance and training advisors to IHCAFE. There is \$1 million of A.I.D. loan funds programmed to provide vehicles and equipment, and to offset IHCAFE's costs for mass media programs, publications, demonstration farming and other operating costs.

Exhibit II presents the planned disbursement schedule of the Project for the five year period ending in 1986. As is demonstrated in the projected disbursements, the initial year of the Project is essentially a start up period. The credit funds are to be disbursed as follows:

	<u>\$000</u>	<u>%</u>
1981	(500)	(5.5)
1982	1,000	11
1983	2,850	31
1984	2,300	26
1985	2,300	26
1986	550	6
	<u>9,000</u>	<u>100</u>

It is planned that the above funds will be used to technify approximately 7,000 manzanas, excluding the roll-over of funds. The initial indications are that an estimated 80% of the land to be renovated will be only partially renovated and the other 20% will be totally renovated. Based on cost estimates, the average estimated cost for partial renovation is \$968 per manzana and the average cost for total renovation is \$2,337 per manzana.

It is planned that IHCAFE will establish loan administration agreements with the Central Bank, and directly with BANADESA and BANHCAFE. The planned loans to the farmers will be for a maximum of seven years at a market rate of interest (which may be adjusted from time to time) with a two year grace period; two sample formats showing repayment schedules including total interest charges are presented in Exhibit III.

The GOH inputs to the Project total \$4.680 million and are to be disbursed as follows:

	<u>\$000</u>	<u>%</u>
1981	60	1
1982	452	10
1983	1228	26
1984	1245	27
1985	1245	27
1986	450	9
	<u>4,680</u>	<u>100</u>

The Project is designed to require only minimum counterpart input during the initial Project years. Approximately \$1.272 million (27%) of the counterpart contribution represents expenditures already in the IHCAFE budget and \$3.407 million (73%) represent additional budgetary expenditures. The GOH is to contribute \$1 million to the credit fund and the other additional budgetary expenditures are to be incurred by IHCAFE.

The foreign exchange requirements for this Project include \$480,000 of the grant funds and \$300,000 of the \$1 million of loan funds for assistance to the extension services activity.

Exhibit I

	<u>SMALL FARMER COFFEE IMPROVEMENT</u>				
	<u>Financial Plan</u>			<u>COUNTERPART</u>	<u>TOTAL PROJECT</u>
	<u>AID LOAN</u>	<u>(U.S. Dols)</u>			
	<u>AID GRANT</u>	<u>TOTAL AID</u>			
<u>Technical Support</u>					
Personnel	-	-	-	1,386,000	1,386,000
Technical Assistance	-	480,000	480,000	-	480,000
Training	188,600	70,000	258,600	12,000	270,600
Demonstration Lots	140,220	-	140,220	-	140,220
Publication	108,000	-	108,000	-	108,000
Vehicles and Equipment	256,000	-	256,000	6,975	262,975
Operating Cost	44,500	-	44,500	854,000	898,500
Evaluation and Audit	125,000	-	125,000	-	125,000
Sub-Total	<u>862,320</u>	<u>550,000</u>	<u>1,412,320</u>	<u>2,258,975</u>	<u>3,671,295</u>
<u>Credit Activity</u>					
Credit Funds	8,000,000	-	8,000,000	1,000,000	9,000,000
Administration	-	-	-	1,200,000	1,200,000
Sub-Total	<u>8,000,000</u>	<u>-</u>	<u>8,000,000</u>	<u>2,200,000</u>	<u>10,200,000</u>
<u>Contingency and Inflation</u>					
10%	137,680	-	137,680	220,875	358,555
TOTAL	<u>9,000,000</u>	<u>550,000</u>	<u>9,550,000</u>	<u>4,679,850</u>	<u>14,229,850</u>

Exhibit II

SMALL FARMER COFFE IMPROVEMENT
Planned Disbursement Schedule
(\$000)

<u>Description</u>	1981	1982	1983	1984	1985	1986	TOTAL
<u>AID Loan Funds</u>							
Training	-	38	87	64	-	-	189
Demonstration Lots	-	28	56	56	-	-	140
Publication	-	21	21	22	22	22	108
Vehicles and Equipment	-	256	-	-	-	-	256
Evaluation and Audit	-	40	15	15	15	40	125
Operating Cost	4	9	9	9	9	4	44
Credit Fund	-	1,000	2,500	2,000	2,000	500	8,000
Contingency and Inflation	-	66	36	24	5	7	138
Sub-Total	<u>4</u>	<u>1,458</u>	<u>2,724</u>	<u>2,190</u>	<u>2,051</u>	<u>573</u>	<u>9,000</u>
<u>AID Grant Funds</u>							
Technical Assistance	32	192	176	80	-	-	480
Training	-	70	-	-	-	-	70
Sub-Total	<u>32</u>	<u>262</u>	<u>176</u>	<u>80</u>	<u>-</u>	<u>-</u>	<u>550</u>
<u>GOH Counterpart Funds</u>							
Personnel	39	170	292	354	354	177	1,386
Training	-	6	6	-	-	-	12
Vehicles and Equipment	7	-	-	-	-	-	7
Operating Cost	14	99	159	232	232	118	854
Credit Fund Adminis.	-	150	375	300	300	75	1,200
Credit Fund	-	-	350	300	300	50	1,000
Contingency & Inflation	-	27	46	59	59	30	221
Sub-Total	<u>60</u>	<u>452</u>	<u>1,228</u>	<u>1,245</u>	<u>1,245</u>	<u>450</u>	<u>4,680</u>
TOTAL PROJECT	96	2,172	4,128	3,515	3,296	1,023	14,230

VI. PROJECT IMPLEMENTATION

A. Host Country Arrangements

The Project Agreement will be signed by the Minister of Finance and Public Credit and by the Executive Directors of IHCAFE, the Central Bank and CONSUPLANE. Resources will be granted to IHCAFE which also will directly allocate its counterpart to the Project. The GOH and IHCAFE will make arrangements with the Central Bank for the capitalization of the special credit line to be opened between the Central Bank and the administering institutions, BANADESA and BANHCAFE. A.I.D. will approve this agreement. The Executive Director of IHCAFE will have primary Project management responsibility while day-to-day implementation responsibility will rest with the IHCAFE named and financed Project Coordinator.

B. A.I.D. Arrangements

Project management responsibility will rest with the Office of Agricultural Development which will be assisted by the Program and Capital Resources and Controller's Offices. No increase in Mission staffing is anticipated for this Project.

1. Disbursement Procedures. For extension activities, A.I.D. will reimburse IHCAFE for authorized expenses as detailed in the Financial Plan. For the credit fund, the Central Bank will establish a discount line and advance funds to BANADESA and BANHCAFE. For credit fund drawdowns, A.I.D. will directly reimburse the Central Bank which will, in turn, make the funds available to the administering banks. A.I.D. will reimburse against a certified list of sub-borrowers and amount of sub-loans. The Central Bank, or independent auditors, as required, will periodically audit the portfolio of each bank.

2. Procurement and ICI Procedures. \$8,000,000 of A.I.D. development loan funds will be disbursed as credit funds through two banks serving as intermediate credit institutions (ICIs). Procurement of agricultural inputs by sub-borrowers will, therefore, follow the procedures outlined in A.I.D. Handbook 1, Supplement B, Chapter 19 (Intermediate Credit Institutions). The loan will be used exclusively for local cost procurement, and it is expected that no loan will total over \$5,000. Since A.I.D. will not require prior approval of subloans and since the banks will not be involved in procurement, the procedures outlined in HB 1, Supp. B, Chapter 19 A 3a. will apply.

A.I.D. development grant funds, totalling \$550,000 will be used exclusively for technical assistance. The long-term technical assistance in extension and credit operations will be procured from the United States and subject to A.I.D. approval. Some short term technical advisors, however, will be procured within the region in order to capitalize on Central American technical experience and expertise.

\$1,000,000 of development loan funds will be made available to IHCAFE in order to expand and improve its extension system. Of this total, some \$ 500,000 will be used to procure commodities. Applicable A.I.D. procurement regulations and approval requirements for commodity procurement under loan funding will be followed. Host country procurement guidelines will be provided to IHCAFE which, as a semi-autonomous agency does its own procurement.

The largest single procurement will be that of 30 utility vehicles, destined for heavy daily use in the extension component of the Project. These will need to be four-wheel drive utility vehicles with export warranties. IHCAFE has studied alternative vehicles and has concluded that, given terrain and road conditions in coffee areas and the mileage the vehicles must cover during a year, that only utility vehicles with 4 cylinder diesel engines are cost effective. Given the lower cost of diesel fuel and the superior fuel mileage possible with 4 cylinder diesel engines, it is not unreasonable to anticipate the possibility of cutting fuel costs in half. In these days of tight budgets, this savings can mean a great deal in terms of meeting implementation targets. IHCAFE has therefore determined to buy such vehicles for the Project. At present, only one US manufacturer, AMC, is making diesel engine, 4 x 4, utility vehicles with export warranties, and these are destined for export only. It is, therefore, requested that authority to procure these vehicles on a proprietary basis with a sole source justification be granted. The appropriate waiver appears in the text of the draft Project authorization, Annex D.

3. Project Monitoring. In addition to maintaining close contact with the IHCAFE Project Coordinator, A.I.D. representatives will hold quarterly review meetings with IHCAFE officials. The purpose of these meetings will be to monitor Project implementation and progress and to make necessary adjustments in implementation. In addition, independent audits of IHCAFE and the banks will be conducted annually.

C. Implementation Schedule

1.	Project Authorization Received	May 1981
2.	Project Agreement Signed	June 1981
3.	Project Coordinator and Secretary begin	June 1981
4.	GOH, IHCAFE, Central Bank Credit Administration Signed	July 1981
5.	Initial Conditions Precedent Met	Aug. 1981
6.	First Group (12) Extension Workers Begin	Oct. 1981
7.	Long Term Technical Assistance On board	Nov. 1981
8.	Vehicles Purchased	Nov. 1981
9.	Short term Advisors Begin	Dec. 1981
10.	Demonstration Lots Planted	Jan. 1982
11.	Extension Equipment Purchased	Jan. 1982
12.	Training Activities Began	Jan. 1982
13.	Area Projects Begin	July 1982
14.	Second Group (24) Extension Workers Begin	July 1982
15.	First Project Evaluation	Dec. 1982
16.	24 Demonstration Lots Planted	June 1983
17.	Third Group (24) Extension Agents Begin	July 1983
18.	24 Demonstration Lots Planted	Jan. 1984
19.	Final Project Evaluation	Mar. 1986
20.	PACD	June 1986

D. Evaluation Plan

This Project is in at least two respects a pilot effort. It is IHCAFE's first major effort targetted on smaller producers and it is a test of the impact of technification as a response to threats to coffee production and as a long run means to improve small producer incomes. Thus careful evaluation of the success of the restructured extension service will be required as well as the impact of the Project on longer range macroeconomic national goals of increasing production and exports. With these criteria in mind, the following evaluation plan has been developed.

The first Project evaluation will take place at the end of the second crop year, and will test the success of the extension program in meeting the needs of the small producers. The division of labor between technical and credit extension agents will be examined to determine the utility of this approach in providing assistance to small farmers. The quality of the extension agents will be examined vis-a-vis the training they received under the Project. An effort will be made to determine what the extension agents may lack in order to further their role as technological change agents with small farmers. In addition, the role of the banks as they support the technical aspects of the Project will be examined. The purpose of conducting this evaluation relatively early in the Project implementation period is to allow for necessary revisions in the Project management.

The second evaluation will be undertaken during the final year of the Project's implementation. By this time, those coffee farmers who entered the Project in its first and second years will be into the fourth and fifth years of their technification program which is a sufficient amount of time to begin to record preliminary results. By this time, farmers who undertook partial renovation on a portion of their holdings should have begun to turn a profit. For all first and second year participants, productivity increases on technified land should be substantial by this time. Data will be gathered on the effects of coffee rust, in addition to other pests and diseases, on the farmers' coffee plantations, both on technified and untechnified parcels. Preliminary estimates also will be made of the effects of the Project on farmer income. Calculations of the Project's impact on national production, especially in the form of export earnings also will be made.

Sufficient baseline data for this evaluation will be available from two sources. Farm level information will be collected as part of the credit application and eligibility determination process. The area profiles will provide baseline data on a regional level.

VII. CONDITIONS, COVENANTS, AND NEGOTIATING STATUS

A. Conditions and Covenants

In addition to the standard conditions and covenants and in order to ensure timely implementation of the Project, the Mission recommends that the Project Authorization include the following:

1. Conditions Precedent

a. Prior to any disbursement, or the issuance of specific commitment documents under the Project Agreement to finance the credit fund, the Cooperating Country shall provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that an administrative agreement delineating powers and responsibilities for credit fund administration has been signed by the Ministry of Finance, the Central Bank, and the Honduran Coffee Institute.

b. The Government of Honduras shall cause IHCAFE to provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that IHCAFE has cumulatively established and funded twenty (20) positions for credit extension agents prior to disbursement for subloans from the special credit fund for new entrants in the second crop year; that is, prior to March 1, 1983.

2. Covenants

The Cooperating Country shall covenant that, unless A.I.D. otherwise agrees in writing, it will:

a. make available, or cause to be made available, adequate crop production credit to Project participants through the banking system.

b. make a capital contribution of at least \$1 million equivalent in lempiras to the Central Bank for use in the special line of credit established under this Project.

c. for a period no less than ten years maintain the investment credit fund at a level no less than equal to the amount contributed thereto by A.I.D. and out of its own treasury resources, returning all reflows of principal plus interest charges not otherwise allocated thereto, and actively promoting and allowing the banks participating in the program access thereto for relending in accordance with the Project.

B. Negotiating Status

This Project has been developed jointly with IHCAFE. Employees of the Research Unit have worked side by side for several months with A.I.D. technicians to produce the technical analyses and conclusions. The Executive Director has been at the service of A.I.D. representatives in designing those aspects of the Project which interface with other Ministries or entities of the GOH. The Project has been discussed in depth with both BANHCAFE and BANADESA whose enthusiasm for the Project is high. In addition, the Ministry of Finance and CONSUPLANE are up-to-date on the design of the Project. The terms and conditions as presented in this paper have been fully discussed with, and are acceptable to the Ministry. See letter of application in Annex E.

BEST AVAILABLE DOCUMENT

LIFE OF PROJECT:
From FY 81 _____ to FY 86 _____
Total U.S. Funding: \$9,500,000
Date Prepared: April 1, 1981

PROJECT TITLE & NUMBER: Coffee Production 522-0176

PAGE 1

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>PROGRAM OR SECTOR GOAL: The broader objective to which this project contributes:</p> <p>To increase the incomes and quality of life of rural farm families while increasing national production</p>	<p>Measures of Goal Achievement:</p> <p>Average income of farm families working less than 10 has. of land increases from \$ _____ to \$ _____ (real dollars) by 19 ____.</p> <p>Increase of 6.5% in real value of GDP by 1985.</p>	<p>National Agricultural statistics. IHCAFE Records.</p>	<p>Assumptions for achieving goal targets:</p> <p>The world market price of coffee remains sufficiently high to enable most small coffee farmers to increase their production levels in view of coffee agreements.</p> <p>The farm gate price paid for non-coffee crops does not fall below a real 1979 level.</p> <p>Other income-generating activities of COM positively affect rural family income.</p>
<p>PROJECT PURPOSE:</p> <p>To mitigate the impact of coffee rust on small coffee producers by assisting as many of them as possible to increase their yields so as to be able to afford rust control measures thereby allowing them to increase their real income</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>1.1. Productivity per ha. increased from 8 to a minimum of 25 quintals leading to a production increase of 34,000 quintals on 1,400 manzanas which enter the technification program by the end of 1983, with commensurate income increases for producers.</p> <p>1.2 By 1986, a total of 6,000 manzanas will experience some increase in total production based upon year of entry into the Project.</p> <p>1.3 Credit availabilities for small farmer investment cease to be a constraint for technification of additional land by 1986.</p> <p>1.4 Success of program will attract 4000 manzanas into an expanded technification program by 1985</p>	<p>Project evaluation and records. IHCAFE records and reports.</p>	<p>Assumptions for achieving purpose:</p> <p>No major natural or man-made disasters other than rust and broca adversely affect coffee production.</p> <p>The farm gate price for non-coffee products does not sustain itself at a price which gives a better return to the small farmer than coffee.</p>
<p>OUTPUTS:</p> <p>1. IHCAFE's ability to respond to small farmer needs strengthened.</p>	<p>Magnitude of Outputs:</p> <p>1.1. Small coffee farms being serviced by IHCAFE and credit institutions increased to 3,000 and continues to increase by 10% per year.</p> <p>1.2. # of small farmers receiving training from IHCAFE extension workers increased by 3,000 over life of Project.</p>	<p>Project reports and evaluations. IHCAFE records.</p>	<p>Assumptions for achieving outputs:</p> <p>COM/IHCAFE commitment to small coffee producers remains high.</p> <p>Relative market prices for technical production inputs do not change substantially.</p> <p>Project inputs are provided on a timely basis.</p>

2. Technology improved at farm level.

2.1. Number of manzanas using more productive varieties increased to 6,000 over life of Project.

2.2. Number of manzanas of farmer coffee land treated with fertilizers increased by 6000 mzs. by end of Project.

2.3. Number of manzanas pest control practices increased by 6000 mzs. by end of project.

3. Management capabilities of small farmers strengthened.

3.1. Amount of farm area employing improved cultivation practices increased by 6000 mzs. by end of project.

3.2. Amt. of area employing advance pruning techniques increased by 6000 mzs. by end of project.

3.3. Amt. of area increasing/decreasing shade tree canopy to optimum level increased by 6000 mzs. by end of project.

3.4. Amt. of area increasing/decreasing per hectare plant population to optimum level by 6000 mzs. by end of project.

4. Viable, self-sustaining credit system for small coffee farmers established.

4.1 By 1985, reflows begin to finance credit for small coffee growers beyond original participants

INPUTS:

Implementation Targets (Type and Quantity)

- 1. Credit Fund established
- 2. Training provided to coffee extension workers and credit managers.
- 3. Commodities.
- 4. Technical assistance for training, research and credit activities.
- 5. Extension workers
- 6. Evaluation and Audits

- 1.1. AID \$8,000,000.
- 1.2. COH \$2,200,000.
- 2.1. AID \$ 296,600.
- 2.2. COH \$ 12,000.
- 3.1. AID \$ 440,720.
- 3.2. COH \$ 6,975.
- 4.1. AID \$ 550,000.
- 5.1 COH \$1,386,000
- 6.1 AID \$ 125,000

AID Disbursement records and audit reports.

Assumptions for Providing Inputs:

- Project authorized and funds allotted.
- Project agreement executed.

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BEST AVAILABLE DOCUMENT

SUBJECT: DAEC REVIEW OF SMALL FARMER COFFEE PRODUCTION PID

1. SUBJECT PID WAS REVIEWED BY DAEC AND APPROVED ON DECEMBER 12, 1980. THE FOLLOWING COMMENTS AND GUIDANCE ARE PROVIDED TO ASSIST MISSION IN PROJECT DEVELOPMENT.

2. LONG-TERM STRATEGY. PROJECT PAPER (PP) NEEDS TO DETAIL HOW THIS PROJECT RELATES (A) TO BROADER MISSION AND GOH STRATEGIES FOR AGRICULTURE SECTOR AND FOR IMPROVEMENT OF SMALL FARMER DELIVERY SYSTEMS, AND (B) TO AG SECTOR II, AGRICULTURE RESEARCH, AND SMALL FARMER TECHNOLOGY PROJECTS. FOR EXAMPLE, TO WHAT DEGREE WILL PROJECT INCORPORATE RESEARCH/EXTENSION ACCOMPLISHMENTS UNDER THESE OTHER PROJECTS, ESPECIALLY CONCERNING FOOD PRODUCTION ACTIVITIES? OF PARTICULAR CONCERN IS OUR DESIRE THAT PROJECT BE SEEN AS PART OF LONGER TERM EFFORT TO IMPROVE SMALL FARMER INCOMES, AND NOT MERELY SHORT-TERM RESPONSE TO IMPENDING COFFEE ROOT EMERGENCY. ASSUMING THAT PROJECT IS PART OF LONGER TERM/ 311945, IT SHOULD ATTEMPT TO DEVELOP A SYSTEM WHICH WILL TAKE PROCESS BEYOND 5,000 DIRECT PROJECT BENEFICIARIES. IN ORDER TO DEMONSTRATE THIS LONGER TERM CAPACITY, PP SHOULD SHOW THAT ADDITIONAL CREDIT WILL BE AVAILABLE AFTER PROJECT TERMINATION. PP FINANCIAL PLAN SHOULD THEREFORE BE CARRIED

BEYOND YEAR FIVE OF PROJECT. WE WOULD EXPECT TO SEE GOH CONTRIBUTIONS TO MEET THESE CREDIT REQUIREMENTS.

3. FARM RENOVATION.

A. FEASIBILITY. PP WILL NEED TO INCLUDE DETAILED SOCIAL AND ECONOMIC ANALYSES WHICH DEMONSTRATE FEASIBILITY OF SUGGESTED RENOVATION PROGRAM. CAN AND WILL AVERAGE SMALL FARMER LIVING ON MARGIN OF FINANCIAL VIABILITY ACCEPT RISK AND HIGH COST OF RENOVATION TO PARTICIPATE IN PROGRAM? IN ECONOMIC ANALYSIS, MISSION SHOULD CONSIDER ALTERNATIVES TO PROFIT MAXIMIZATION MODEL USED IN PID TO EXAMINE SMALL FARMER INCENTIVES, NAMELY, MODELS BASED ON CASH OUTLAY AND RISK MINIMIZATION. ALSO, PID INDICATES THAT MANY SMALL COFFEE FARMERS LIVE IN MOUNTAINOUS, ISOLATED REGIONS. PP SHOULD DISCUSS HOW OUTREACH PROGRAMS WILL BE DESIGNED TO COPE WITH THIS PROBLEM. ALSO, PP SHOULD DISCUSS DEGREE TO WHICH COFFEE FARMERS ARE ORGANIZED.

B. PROVISIONS TO ENSURE WIDESPREAD DISTRIBUTION. MISSION SHOULD LOOK CAREFULLY AT BENEFITS AND COSTS OF FOUR APPROACHES SUGGESTED IN PID. ASSESSMENT OF BENEFITS AND COSTS SHOULD INCLUDE ANALYSIS OF TECHNICAL ADVANTAGES OF CONCENTRATED COFFEE RUST TREATMENTS AND INSTITUTIONAL CAPACITY OF INCAFE -- TWO FACTORS WHICH WE BELIEVE WILL SHOW ADVANTAGES OF GEOGRAPHIC CONCENTRATION VERSUS ONE HECTARE LIMITATION. HOWEVER, IN ORDER MAXIMIZE DEMONSTRATION EFFECTS, YOU MAY WISH CONCENTRATE IN SEVERAL RATHER THAN ONLY ONE HIGH RISK AREA.

4. CREDIT COMPONENT.

A. IN LIGHT RECENT FINANCIAL DIFFICULTIES ENCOUNTERED BY SEVERAL HONDURAS LEADING INSTITUTIONS, PP SHOULD INCLUDE

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DETAILED FINANCIAL ANALYSIS -- WHETHER EVENTUAL LENDER IS COFFEE BANK OR BANADESA. ALSO, PP SHOULD SPELL OUT TOTAL CREDIT REQUIREMENTS OF COFFEE RENOVATION PROGRAM AND PROBABLE SOURCES. SPECIAL ATTENTION SHOULD BE GIVEN TO WORKING CAPITAL REQUIREMENTS.

8. PID INDICATES THAT 20 PERCENT OF SMALL COFFEE FARMERS DO NOT HAVE LAND TITLES AND THAT THIS MAY IMPEDE THEIR ACCESS TO CREDIT. PP SHOULD SHOW HOW THIS PROBLEM WILL BE OVERCOME. WE WILL EXPECT FIRM AGREEMENT WITH THE GOH ENSURING THAT THESE FARMERS WILL NOT BE AUTOMATICALLY EXCLUDED FROM PROGRAM -- I.E., WE WOULD LIKE PP TO SHOW HOW PROBLEM HAS BEEN RESOLVED, NOT SIMPLY A STRATEGY

FOR RESOLUTION. ANY GOH PROVISIONS FOR SPECIAL TITLE FOR SUCH FARMERS OR OTHER SPECIAL ARRANGEMENTS TO ENSURE THEIR PARTICIPATION SHOULD BE DISCUSSED IN PP.

5. COFFEE PRODUCTION FOR SMALL FARMERS. PP SHOULD DISCUSS ADEQUACY OF SUPPORT SYSTEMS FOR SMALL COFFEE FARMERS -- E.G., CREDIT, NURSERIES FOR NEW PLANTS, STORAGE AND DRYING FACILITIES, SOIL ANALYSIS, AND MARKETING. ALSO, PP SHOULD DISCUSS TIME PHASING OF COFFEE REPLANTING ON INDIVIDUAL FARMS. IN LOOKING AT TECHNICAL AND FEASIBILITY ISSUES, RECOMMEND MISSION DRAW UPON EXPERIENCE AND CONSULT EVALUATIONS OF SIMILAR USAID/HAITI PROJECT FOR SMALL FARM COFFEE PRODUCERS. (SMALL FARMER DEVELOPMENT, 521-2073). AS APPROPRIATE, IT WOULD BE USEFUL FOR PP TO CITE HOW LESSONS LEARNED FROM HAITI EXPERIENCE HAVE BEEN INCORPORATED INTO PROJECT DESIGN.

6. RELATIONSHIP TO RUCAP COFFEE RUST PROJECT. PP SHOULD INCLUDE DETAILED DISCUSSION OF SUBSTANCE AND TIMING OF LINKAGES BETWEEN IHCAF AND REGIONAL COFFEE RESEARCH PROGRAMS.

7. ENVIRONMENTAL PROTECTION. PROJECT SHOULD INCLUDE ADEQUATE PROVISIONS (TA AND TRAINING) TO ENSURE JUDICIOUS PESTICIDE USE. SPECIAL ATTENTION SHOULD BE GIVEN TO STRENGTHENING IHCAF'S FARM-LEVEL TRAINING. PRIOR TO PROJECT AUTHORIZATION, MISSION SHOULD SUBMIT AN ENVIRONMENTAL ASSESSMENT (EA) COVERING ALL PROBABLE PESTICIDE ACTIVITIES. SEPTEL WILL FOLLOW WITH MORE SPECIFIC SUGGESTIONS RE CONTENT OF EA AND CONSULTANTS. MUSKIE

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TAGS:

SUBJECT: DAEC REVIEW OF REGIONAL COFFEE PEST CONTROL PID

1. SUMMARY: THE DAEC REVIEWED AND APPROVED THE SUBJECT PID ON DECEMBER 19, 1980. SINCE ROCAP DOES NOT HAVE AUTHORITY TO APPROVE AND AUTHORIZE A PROJECT OF THIS SIZE AT THE MISSION LEVEL AND GIVEN THE FACT THAT THE SUBJECT PROJECT REPRESENTS AN INITIATIVE THAT COULD HAVE MAJOR BILATERAL FUNDING IMPLICATIONS IN THE REGION, IT WAS CONCLUDED THAT PROJECT SHOULD BE REVIEWED AND AUTHORIZED IN WASHINGTON.

THE PRINCIPAL ISSUES DISCUSSED RELATED TO THE ECONOMIC FEASIBILITY AND BENEFIT INCIDENCE OF THE BROADER PROGRAM OF WHICH THIS PROJECT IS A PART AND TO THE RELATIONSHIP OF THE APPLIED RESEARCH TO NATIONAL PROGRAMS, PARTICULARLY THE PROPOSED HONDURAS PROJECT.

2. ECONOMIC ANALYSIS. FURTHER WORK WILL BE EXPECTED ON THE MACROECONOMIC ANALYSIS THAT WAS PRESENTED IN THE PID. ON THE COST SIDE THE MISSION SHOULD DETAIL THE BASIS FOR THE ESTIMATED INVESTMENT COST PER MANZANA TECHNIFIED. RECURRENT COSTS OF RUST CONTROL MEASURES WITH AND WITHOUT TECHNIFICATIONS SHOULD BE EXPLICITLY INCLUDED. ON THE BENEFIT SIDE, CONCERN WAS EXPRESSED THAT COMPLETE PREVENTION OF PRODUCTION

LOSSES IN THE REGION, WAS INCLUDED AS A BENEFIT, WHEREAS ONLY 17 PERCENT OF COFFEE LANDS WOULD BE TECHNIFIED UNDER PRESENT PLANS. THIS DOES NOT ACCORD WITH OUR APPRECIATION OF THE DIFFICULTY OF LIMITING RUST LOSSES. GIVEN THE LONG PAY BACK PERIOD AND THE HIGH INITIAL INVESTMENT COSTS, THE SENSITIVITY OF THE REVISED B/C RATIO TO DISCOUNT RATES HIGHER THAN 10 PERCENT AND LEVELS OF EFFORT LOWER THAN THOSE PROJECTED, SHOULD BE EXAMINED. A FARM-LEVEL MICRO-ECONOMIC ANALYSIS WILL ALSO BE EXPECTED. THIS ANALYSIS SHOULD INDICATE THE CONDITIONS UNDER WHICH TECHNIFICATION AND THE HIGHER COSTS OF RUST CONTROL WOULD LIKELY BE ECONOMICALLY AND FINANCIALLY FEASIBLE FOR THE PROJECT'S TARGET GROUP.

3. BENEFIT INCIDENCE. QUESTIONS WERE RAISED AS TO THE LIKELY IMPACT THAT THIS PROJECT WOULD HAVE ON SMALL COFFEE CROWERS IN THE REGION. THE PROJECT ASSUMES NATIONAL EXTENSION PROGRAMS WILL SERVICE THE SMALL GROWERS, AND THAT THEY CAN BE MOTIVATED TO TECHNIFY. THESE ASSUMPTIONS WILL NEED TO BE CAREFULLY EXAMINED IN THE SOCIAL AND TECHNICAL ANALYSES.

4. ADAPTIVE RESEARCH FOR TECHNIFICATION. THE HONDURAS AND ROCAP PIDS APPEAR TO OVERLAP WITH REGARD TO ADAPTING DELIVERY METHODOLOGIES AND TECHNOLOGY PACKAGES FOR THE SMALL FARMER. IT WAS AGREED THAT THIS PARTICULAR ACTIVITY IS OF CRITICAL IMPORTANCE, BUT IT WAS UNCLEAR AS TO WHETHER IT IS MORE APPROPRIATELY CARRIED OUT REGIONALLY OR NATIONALLY, OR WHAT THE APPROPRIATE DIVISION SHOULD BE. IT IS EXPECTED THAT ROCAP WILL EXPLORE THIS POINT IN MORE DETAIL WITH THE MISSIONS, PARTICULARLY HONDURAS. THE PP SHOULD INCLUDE A DISCUSSION OF HOW THE REGIONAL AND NATIONAL PROGRAMS RELATE TO ONE ANOTHER WITH REGARD TO ACTIVITIES TO BE DONE UNDER EACH AND DEGREE OF OVERLAP, IF ANY.

AID ACTION	AG
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5. AVAILABILITY OF INPUTS. ASSUMING THAT THE NATIONAL GOVERNMENTS DO DEVOTE THE REQUIRED FINANCIAL RESOURCES TO AMBITIOUS TECHNIFICATION PROGRAMS, THE PP SHOULD EXAMINE WHETHER OR NOT THERE ARE CONSTRAINTS ON THE OTHER INPUTS REQUIRED, SUCH AS FERTILIZERS, PESTICIDES AND SEEDS. ALSO, THE SUPPLY OF AND DEMAND FOR LABOR DURING THE VARIOUS PHASES OF TECHNIFIED COFFEE PRODUCTION SHOULD BE ANALYZED.

6. RELATIONSHIP OF VERTICAL PEST CONTROL PROGRAMS. A VARIETY OF PEST CONTROL PROGRAMS ARE ALREADY UNDERWAY IN THE REGION. THE PP SHOULD DISCUSS THE RATIONALE FOR CREATING ANOTHER VERTICAL PROGRAM VS. A MORE, INTEGRATED PEST CONTROL PROGRAM FOR OTHER THAN JUST COFFEE AND HOW

THE VARIOUS VERTICAL PROGRAMS WILL RELATE OVER THE SHORT AND LONG TERM.

7. PROCUREMENT WAIVER. PP SHOULD INCLUDE JUSTIFICATION FOR 941 WAIVER TO PERMIT PROCUREMENT OF ESSENTIAL GOODS AND SERVICES FROM PORTUGAL AND BRAZIL.

8. FY 81 FUNDING. THE PID REQUESTS DOLS 400,000 IN FY 81 FUNDING, WHEREAS THE OYB AMOUNT IS DOLS 350,000. WE UNDERSTAND THE ADDITIONAL AMOUNT, IF REQUESTED IN THE PP, WOULD BE TAKEN FROM ELSEWHERE IN THE OYB.

9. PROJECT DEVELOPMENT. FOR SOCIAL, ECONOMIC AND TECHNICAL ANALYSES, IT IS RECOMMENDED THAT ROCAP AND HONDURAS MISSIONS COMBINE EFFORTS. IF NEEDED, IDY ASSISTANCE FROM AID/W SHOULD BE REQUESTED AFTER BOTH MISSIONS HAVE DETERMINED WHICH PORTIONS OF ANALYSES ARE TO BE DONE IN COMMON. MUSKIE

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8 ABR. 1981

SECRETARIA DE HACIENDA Y CREDITO PUBLICO

REPUBLICA DE HONDURAS

C & R.

Tegucigalpa, D. C.,

mayo 8, 1981

Nº. CP-0480....

AGR	✓
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COMPTON	✓
RENTAS	
AGRICULTURA	
INDUSTRIA	
COMERCIO	✓
MINISTERIO	
RENTAS	
JAC	✓
RLA	✓
CHIRI	✓
REAFER	✓

Señor
JOHN R. OLESON
Director Agencia para el
Desarrollo Internacional
Presente

Señor Director:

En nombre del Gobierno de la República de Honduras, por este medio solicito financiamiento para un Proyecto de Mejoramiento de los Pequeños Cafetaleros por la cantidad de US\$ 9.550,000.00

Como es del conocimiento de la AID, la Roya del Café amenaza con reducir severamente la producción de café en nuestro país durante los próximos años. El café constituye el 27% de las exportaciones del país y proporciona una forma de sustento para 45,000 pequeños agricultores; por ende, su importancia a la economía nacional es significativa y una pérdida entre un cuarto y un medio de nuestra producción anual sería devastadora. En consecuencia, es de la más alta prioridad para el Gobierno de Honduras que se diseñe y ejecute una forma acertada de controlar la Roya del café. Es de particular importancia, por razones sociales en este momento de agitación en Centroamérica, que el pequeño agricultor, con una extensión de una a diez manzanas de café, sea incluido en un nuevo sistema de producción, mediante el cual pueda mitigar los efectos de la Roya.

El Instituto Hondureño del Café, IHCAFE, ha desarrollado un programa para la tecnificación de la producción cafetalera basado en el uso de variedades mejoradas de cafetos sembrados con mayor densidad por manzana, aumento en la aplicación de fertilizantes y otros insumos acoplados al control de la sombra y de ser necesario, rociado con cloróxido de cobre para controlar la Roya. Puesto que la Roya ya apareció en Honduras e inevitablemente se propagará, no se puede depender de las medidas de erradicación y cuarentena para proteger al sector de producción cafetalera; ningún esquema más que el sistema de tecnificación del IHCAFE parece lo suficientemente prometedor para asegurar su inversión en este momento. Por lo tanto, el Gobierno

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no de Honduras se ha comprometido con el programa de tecnificación del IHCAFE.

En vista de que los grandes productores de café en Honduras tienen acceso al crédito y la asistencia técnica necesaria para tecnificar su producción, el programa para el cual el Gobierno de la República de Honduras por nuestro medio está solicitando financiamiento por parte de la AID se concentrará exclusivamente en los cafetaleros pequeños y medianos o sea aquellos que tengan entre una y diez manzanas de café y devengan por lo menos la mitad de sus ingresos de esta cosecha y que actualmente están produciendo menos de 15 quintales por manzana.

A fin de lograr que el programa de tecnificación llegue a este grupo, se tendrá que aumentar y fortalecer al IHCAFE como agencia de extensión para que sus extensionistas puedan realizar los contactos necesarios con los beneficiarios proyectados; además, la tecnificación requiere de una inversión grande en la finca cafetalera, y tienen que pasar varios años antes de que el rendimiento correspondiente del café sea cosechado. En consecuencia, se requiere de una inversión en crédito para el pequeño cafetalero durante un período hasta de siete años con un período de gracia hasta de tres años para permitir que este grupo se tecnifique. De no existir dicho crédito, el pequeño productor tendrá que abandonar el café cuando la Roya ataque sus cafetos, aún cuando la recompensa al esfuerzo de tecnificación después de los primeros años no productivos es bastante alta.

Se ha calculado que la primera vuelta de recursos en préstamos con cargo al fondo de inversiones en tecnificación del Proyecto beneficiaría a 3,000 pequeños cafetaleros en áreas afectadas por la Roya, y que los nuevos préstamos con cargo a las recuperaciones del fondo de inversión, más las contribuciones adicionales al mismo, además del fortalecimiento y expansión de la capacidad de extensión del IHCAFE permitirán una movilización de recursos mucho más amplia del Proyecto hacia otros beneficiarios.

Es imperativo que este programa de tecnificación del IHCAFE comience pronto para que las exportaciones y los ingresos del Estado no



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sean disminuidos durante los próximos años como resultado de la Rota del café. Por lo consiguiente, el Gobierno de Honduras solicita que el financiamiento de la AID por US\$ 9.550,000.00 sea disponible lo más pronto posible para este Proyecto. La asistencia solicitada de la AID financiará las siguientes actividades:

Asistencia técnica extranjera al IHCAFE	US\$ 550,000.00
Apoyo al programa de extensión del IHCAFE	1.000,000.00
Crédito de inversión en tecnificación para pequeños cafetaleros	8.000,000.00
	<u>US\$ 9,550,000.00</u>

Como contraparte del Proyecto, El Gobierno de la República de Honduras proporcionará lo siguiente:

Costos adicionales del IHCAFE para el Proyecto	L. 4.600,000.00
Costos adicionales de proporcionar crédito de inversión para café (BANADESA y BANCAFE)	2.600,000.00
Contribución del Gobierno de Honduras al fondo de inversión de café (1983-1986)	2.000,000.00
	<u>L. 9.200,000.00</u>

Además, el Gobierno de Honduras hará disponibles los recursos del préstamo de AID a las entidades participantes sin requerir el reintegro del capital; sin embargo, en aquella porción de los fondos de AID utilizados para el programa de crédito, el interés cobrado por la AID se pagará del interés cobrado por los préstamos de inversión. Por otra parte, el Gobierno de Honduras proporcionará, o velará porque se proporcione a través de las instituciones participantes, cualquier crédito de producción a corto plazo que pueda ser justamente solicitado por los recipientes de los subpréstamos de inversión del Proyecto para permitirles hacer uso de los mismos subpréstamos de inversión. El crédito de producción puede derivar



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se de los créditos del Banco Central de Honduras, los recursos normales de los bancos participantes, o préstamos de otros donantes u otros bancos.

Finalmente, el Gobierno de Honduras hará aquellas contribuciones adicionales de capital al fondo de crédito para inversión en tecnificación que sean necesarias para mantener el fondo a un nivel no inferior al total de las contribuciones de la AID y del Gobierno de Honduras, anteriormente mencionadas.

Tenemos la seguridad de que la legislación actualmente pendiente de aprobación en la Asamblea Nacional Constituyente y que permitirá a los pequeños agricultores que ahora producen café en tierras ejidales o nacionales comprar dichas tierras y poseerlas en dominio absoluto, entrará en efecto y ejecución a finales de este año, ya que el proyecto de ley tiene el apoyo de los partidos políticos tradicionales y las Fuerzas Armadas de Honduras, tal legislación proporcionará una solución permanente al problema de títulos de propiedad para los cafetaleros; mientras tanto, la ausencia de dicha legislación no vendrá en detrimento de la ejecución del Proyecto. Los subpréstamos a ser realizados bajo este Proyecto serán inversiones favorables a largo plazo, para los bancos participantes, en el pasado han demostrado que pueden encontrar y efectivamente encontrarán otros métodos de adquirir seguridad colateral para sus inversiones; es más se puede asegurar que el IHCAFE está dispuesto a garantizar los préstamos hechos por los bancos participantes a los pequeños agricultores sin títulos, de ser necesario como se ha hecho con frecuencia en el pasado.

Con respecto al monto del financiamiento solicitado, el Gobierno de Honduras, consciente del creciente costo del servicio de la deuda pública que enfrentará en los años venideros, solicita que la AID haga disponible cuánto sea posible de su participación financiera en el Proyecto con carácter de donaciones no reembolsables. Tenemos entendido que las estipulaciones de préstamo por parte de la AID para Honduras, como ordena la ley, señalan que la amortización se hará durante 40 años a partir de la fecha del primer desembolso con un interés anual de 3%, siempre que haya un período de gracia de 10 años para el pago del capital durante el cual se co-



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bra un interés del 2%.

Aprovecho la oportunidad para reiterarle las muestras de mi conside
ración y aprecio más distinguida.



[Handwritten signature]
VALENTIN J. MENDOZA A.

Ministro de Hacienda y Crédito Público

/ream.



BANCO HONDUREÑO DEL CAFE

TEGUCIGALPA, D.C., HONDURAS, C.A.

BANHCAFE

CEP-5/81

8 de abril, 1981.

Señores
AGENCIA INTERNACIONAL PARA EL DESARROLLO
Embajada Americana
Tegucigalpa, D.C.

At.: Sr. Charles Oberbeck

Estimado señor:

Como ya debe ser de su conocimiento, el Banco Hondureño del Café ha expresado interés en participar en el "Programa de Crédito para Contrarrestar el Problema de la Roya del Café".

Al respecto tengo el agrado de informarle que nuestra Junta Directiva, en su sesión del día 7 de los corrientes, bajo el tema "Otros Asuntos", ratificó el interés de la institución en participar en dicho Programa.

En vista de lo anterior, por este medio estamos comunicándolo oficialmente a ustedes, poniéndonos a sus apreciables órdenes para cualquier información o aclaración relacionada con las actividades de este Banco.

Sin otro particular, expreso a usted las muestras de mi mayor consideración.

Muy atentamente,

BANCO HONDUREÑO DEL CAFE

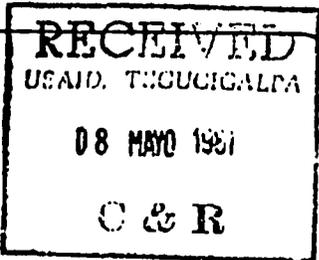
Roberto Valladares B.
Presidente Ejecutivo



BANCO NACIONAL DE DESARROLLO AGRICOLA

TEGUCIGALPA, HONDURAS, C.A.
PRESIDENCIA EJECUTIVA

Tegucigalpa, D. C.
8 de mayo de 1981



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READER	✓

Señor
JOHN R. OLESON
Director
Agencia Internacional para el Desarrollo (AID)
Embajada Americana
Ciudad

Estimado señor Oleson:

Como es de su conocimiento el 29 del mes de abril pasado tuvo lugar una reunión en las oficinas de este banco, en la que participaron personeros de esa Agencia, del Instituto Hondureño del Café (IHCAFE) y de BANADESA, para discutir aspectos relacionados con el proyecto de préstamo para el Programa de mejoramiento de pequeñas fincas de café, para el cual se han iniciado negociaciones. Según nuestro entender, la participación de Banadesa abarcaría los siguiente aspectos:

- = El banco recibiría las solicitudes de crédito y le daría el trámite correspondiente.
- = Mantendría los registros pertinentes.
- = Se encargaría del cobro de los préstamos.
- = Rendiría los informes que permitieran conocer el desarrollo del programa.

Entendemos que Banadesa no tendría responsabilidad en el pago del préstamo, ni en la elaboración de los planes de inversión, valuación de las garantías, control de las entregas u otras labores en el campo.

Por su participación el Banco percibiría una comisión que tentativamente se ha propuesto sería el 4% sobre el monto de los préstamos manejados.



BANCO NACIONAL DE DESARROLLO AGRICOLA

**TEGUCIGALPA, HONDURAS, C.A.
PRESIDENCIA EJECUTIVA**

ANNEX C
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Por este medio, estamos manifestando nuestra intención en el sentido de que en principio el Banco aceptaría participar en el programa en la forma propuesta.

Sin otro particular, me suscribo del señor Director con toda consideración,

Muy atentamente,



Rodolfo Alvarez Baca
RODOLFO ALVAREZ BACA
Presidente Ejecutivo

ANNEX D

DRAFT PROJECT AUTHORIZATION

Name of Country:	Honduras
Name of Project:	Small Farmer Coffee Improvement
Number of Project:	522-0176
Number of Loan:	522-T-___

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Small Farmer Coffee Improvement Project for Honduras (the "Cooperating Country") involving planned obligations of not to exceed Nine Million United States Dollars (\$9,000,000) in loan funds ("Loan") and Five Hundred Fifty Thousand United States Dollars (\$550,000) in grant funds ("Grant") over a five year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign currency and local currency costs for the project.

2. The project ("Project") will strengthen the capability of, and expand the coverage of the extension service of the Instituto Hondureno del Cafe (IHCAFE) and will increase the availability of investment credit for project beneficiaries who will participate in IHCAFE's coffee technification program designed to mitigate the impact of spreading coffee rust in Honduras.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment (Loan)

The Cooperating Country shall repay the Loan to A.I.D. in U.S. Dollars within forty (40) years from the date of first disbursement of the loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in U.S. Dollars interest from the date of first disbursement of the Loan at the rate of (i) two percent (2%) per annum during the first ten (10) years, and (ii) three percent (3%) per annum thereafter, on the outstanding balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services (Loan)

Goods and services, except for ocean shipping, financed by A.I.D. under the Loan shall have their source and origin in countries that are members of the Central American Common Market or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Loan shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States or of countries that are members of the Central American Common Market.

c. Source and Origin of Goods and Services (Grant)

Goods and services, except for ocean shipping, financed by A.I.D. under the Grant shall have their source and origin in the United States and countries that are members of the Central American Common Market, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

d. Reimbursement of Expenses

Upon compliance with the relevant Conditions Precedent to Disbursement by the Cooperating Country, A.I.D. may disburse loan funds as reimbursement for otherwise eligible costs of nursery credit provided that evidence that such costs were incurred subsequent to May 1, 1981 is furnished to A.I.D. in form and substance satisfactory to A.I.D. Loan funds as reimbursement for investment credit and other eligible costs and grant funds as reimbursement for technical assistance and other eligible costs may be disbursed subject to compliance with the relevant Conditions Precedent to Disbursement by the Cooperating Country, provided that such costs were incurred subsequent to the first date of obligation of funds.

e. Conditions Precedent

(1) Prior to any disbursement, or the issuance of specific commitment documents under the Project Agreement to finance the credit fund, the Cooperating Country shall provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that an administrative agreement delineating powers and responsibilities for credit fund administration has been signed by the Ministry of Finance, the Central Bank, and the Honduran Coffee Institute.

(2) The Government of Honduras shall cause IHCAFE to provide to A.I.D., in form and substance satisfactory to A.I.D., evidence that IHCAFE has cumulatively established and funded twenty (20) positions for credit extension agents prior to disbursement for subloans from the special credit fund for new entrants in the second project year; that is, prior to March 1, 1983.

f. Special Covenants

The Cooperating Country shall covenant that, unless A.I.D. otherwise agrees in writing, it will:

(1) make available, or cause to be made available, adequate crop production credit to project participants through the banking system.

(2) make a capital contribution of at least \$1 million equivalent in lempiras to the Central Bank for use in the special line of credit established under this Project.

(3) maintain the investment credit fund for a period no less than ten years at a level no less than equal to the amount contributed thereto by A.I.D. and out of its own Treasury resources, returning all reflows of principal plus interest charges not otherwise collected thereto, and allowing the banks participating in the program access thereto for relending in accordance with the Project.

g. Waiver (Loan)

Thirty (30) 4x4, deisel engine, utility vehicles with export warranty (Jeep CJ-5's or CJ-7's) having an approximate value of \$240,000, may be purchased from a sole source on a negotiated price basis.

5C (1) - COUNTRY CHECKLIST

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A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?
 1. Yes. This Project is directly targeted to the rural poor in the agricultural sector.
2. FAA Sec. 481 Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?
 2. No such determination has been made.
3. FAA Sec. 620 (b) If assistance is to a government, has the Secretary of State determined that it is not dominated or controlled by the international Communist movement?
 3. The Secretary of State has determined that Honduras is not controlled by the International Communist Movement.
4. FAA Sec. 620 (c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government?
 4. A.I.D. knows of no such cases.

5. FAA Sec. 620 (e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

5. There is no evidence of such action.

6. FAA Sec. 620 (a), 620 (f), 620 (g), 80 App. Act. Sec. (511, 512 and 513). Is recipient country a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos or Vietnam. Will assistance be provided to Afghanistan or Cambodia without a waiver?

6. Honduras is not a communist country nor will any assistance be provided to any of the indicated countries.

7. FAA Sec. 620 (i). Is recipient country in any way involved in a subversion of, or military action against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?

7. A.I.D. has no evidence of any subversion or aggression, nor plans for such action.

8. FAA Sec. 620 (j). Has the United States permitted, or failed to take such measures to prevent, the seizure or destruction, by mob action, of property?

8. There has been no such incident for over eleven years in Honduras.

9. FAA Sec. 620 (k). If the United States has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility of convertible assets, the AID Administrator within one year considered denying assistance to such government for this reason.

9. The Investment Guaranty Program is in operation in Honduras.

10. FAA Sec. 620 (l). If the United States has failed to institute the Fishermen's Protective Act or any other law, has the United States imposed any penalty or sanction against any U.S. fishing vessel in international waters.

10. Honduras has not seized or imposed any penalties or sanctions against U.S. vessels because of their activities in international waters in recent years.

11. Has any vessel of the United States been seized by the Fishermen's Protective Act?

b. has complete denial of assistance been considered by AID Administrator?

11. FAA Sec. 620; FY 80 App. Act Sec. (518.) (a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country?

11. (a) No.

(b) Is country in default exceeding one year on interest of principal on U.S. loan under program for which App. Act appropriates funds?

(b) No.

12. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

12. Yes, taken into account by the Administrator at the time of approval of Agency OYB.

13. FAA Sec. 620(c). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?

13. No.

14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator when determining the current AID Operational Year Budget?

14. Honduras is not in arrears to the extent described in Article 19 of the U.N. Charter.

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15. FAA Sec. 620A, FY 80 App. Act, Sec. (521.) Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? Has the country granted sanctuary from prosecution to any individual or group which has committed a war crime?

15. No.

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA?

16. No.

17. FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear equipment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it reconstituted a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty?

17. No.

B. FINDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

2. FAA Reg. 102.201 have or have been established and taken into account to assess commitment progress of country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy.

1. a. Criteria for assessing progress in involving the poor in development have been set through sector and subsector assessments in the agriculture, education, nutrition, and health sectors. Such criteria will be determined further through the Urban-Regional Sector Assessment currently underway.

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b. FAA Sec. 104(d) (1); IDC Act of 1979. If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, assistance to urban poor and through community-based development programs which give recognition to people motivated to limit the size of their families?

b. Over the long-term, improved economic conditions for the rural poor, promoted by agricultural production projects such as this one, are expected to impact positively on reductions in family size.

2. Economic Support Fund Country Criteria.

2. Not Applicable

a. FAA Sec. 501B. Has the country (a) engaged in a consistent pattern of gross violations of internationally recognized human rights or (b) since such significant improvements in its human rights record that furnishing such assistance is in the national interest?

b. FAA Sec. 501(p). Will assistance under the Southern Africa program be provided to Angola, the Congo, Tanzania, or Zambia? If so, has President waived prohibition against the assistance by determining that such assistance will further U.S. foreign policy interests?

c. FAA Sec. 505. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account counterpart arrangements been made?

d. FAA Sec. 501(c). Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?

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9. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

9. The Government of Honduras is contributing counterpart to the maximum extent possible for services and other project costs.

10. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

10. The U.S. does not own such currency.

11. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

11. Yes.

12. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

12. Honduras is a signator of the International Coffee Agreement, one of the purposes of which is to prevent such world market surplus. The U.S. is not a producer of coffee.

13. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

14. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

15. FAA Sec. 602(b)(1) sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies raised by the U.S. are utilized to meet the cost of contractual and other services.

a. The Project is specifically directed toward promoting the participation of the rural poor in the benefits of development at the local level by disseminating appropriate coffee technology to small producers. In addition, training activities and technical assistance sponsored by the executing agency will encourage the formation of cooperative groups. Since women play a proportionately high roll in coffee production, this Project will protect an important source of employment for them.

democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

103. This project is specifically designed to increase productivity on small coffee farms. With the resultant increase in production, the income level of small producers will increase.

(1) (103) This project is specifically designed to increase productivity on small coffee farms. With the resultant increase in production, the income level of small producers will increase.

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pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures such as, domestic production, building national food reserves, expanding rural storage facilities, reducing post harvest food losses, and improving food distribution.

c. [100]. Is appropriate use of use of appropriate technology? (relatively simple, cost-saving, labor saving techniques that are generally used appropriate for the small farms, small businesses and small incomes of the poor.

d. FAA Sec. 101(a) will the recipient country provide at least 25% of the costs of the project, project, or activity with respect to which the assistance is to be furnished or in the latter coordinating mechanism that would be a "relatively least developed" country.

e. FAA Sec. 101(a) will the recipient country provide at least 25% of the costs of the project, project, or activity with respect to which the assistance is to be furnished or in the latter coordinating mechanism that would be a "relatively least developed" country.

f. FAA Sec. 101(a) will the recipient country provide at least 25% of the costs of the project, project, or activity with respect to which the assistance is to be furnished or in the latter coordinating mechanism that would be a "relatively least developed" country.

c. Coffee production techniques being promoted are particularly labor intensive and suitable for small farms.

d. Yes. The recipient country is providing counterpart in excess of 25%.

e. None of the grant funds will be used for capital assistance.

f. The Project has been designed to meet the desires and capacities of the populace of rural Honduras.

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g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

g. **Yes.** The Project contributes to the productive capacity of a major crop.

2. Not Applicable (Only)

a. FAA Sec. 122(a). The Mission has concluded on behalf of the country to repay the loan at a reasonable rate of interest.

a. The Mission has determined that the loan is within the debt-carrying capacity of the GOH.

b. FAA Sec. 122(d). If assistance is for any joint enterprise which will compete with U.S. enterprises, is there an agreement on the part of the recipient country to pay to the U.S. at least 10% of the enterprise's annual product or output of the goods or services?

b. This does not fund any enterprise competitive with U.S. enterprises.

3. Not Applicable

3. Not Applicable

a. FAA Sec. 122(a). The Mission has concluded on behalf of the country to repay the loan at a reasonable rate of interest.

b. FAA Sec. 122(d). If assistance under this chapter is used for military, or paramilitary, purposes?

3. Not Applicable

3. Not Applicable

a. FAA Sec. 122(a). The Mission has concluded on behalf of the country to repay the loan at a reasonable rate of interest.

1. **Yes.** Commodities purchased will be competitively purchased.

b. FAA Sec. 122(d). If assistance under this chapter is used for military, or paramilitary, purposes?

2. **Yes.**

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3. FAA Sec. 504(d) If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do a marine insurance business in the U.S.

3. Yes.

4. FAA Sec. 504(e). If offshore procurement of agricultural commodity is to be financed, is there a risk that the domestic price of such commodity is less than parity?

4. No such procurement is contemplated.

5. FAA Sec. 505(a). Compliance with the percent in Section 505(b) of the Foreign Marine Act of 1946, as amended, that at least 50 per cent of the gross tonnage of commodities transported separately for dry bulk cargoes, dry cargo liners, and other vessels shall be chartered to U.S. flag vessels. Are the vessels that are available at fair and reasonable rates.

5. The Project Agreement will provide for compliance with this requirement.

6. FAA Sec. 506. If technical assistance to be financed under the program will be furnished to the fullest extent practical by private organizations or individuals.

6. Technical assistance to be financed under the program will be furnished to the fullest extent practical by private organizations or individuals.

7. FAA Sec. 507. If the project is to be financed by the Government of the cooperating country, will the project be financed on a non-reimbursable basis?

7. Yes.

8. FAA Sec. 508. If the project is to be financed by the Government of the cooperating country, will the project be financed on a non-reimbursable basis?

8. Yes.

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interests?

1. Not applicable.

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

2. Not applicable.

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million?

3. Not applicable.

C. Other Restrictions

1. FAA Sec. 602(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

1. Yes.

2. FAA Sec. 601(d). If fund is established wholly by U.S. contributions and administered by an international organization, does Controller General have audit rights?

2. No international organization will have administrative responsibility under this program.

3. FAA Sec. 620(a). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-line countries?

3. Yes.

4. FAA Sec. 630(a). Is financing not permitted to be used, without value, for purchase, sale, long-term lease, exchange or guaranty of motor vehicles manufactured outside the U.S.

4. Yes.

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3. Will arrangements preclude use of financing?

5. Yes; Project funds will be used only for specified purposes, precluding their use as described in paragraphs 5a through 5i.

a. FAA Sec. 104(f). To pay for performance of abortions as a method of family planning, or to, motivate or coerce persons to practice abortions; to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization?

b. FAA Sec. 607(a). To compensate owners for appropriated nationalized property?

c. FAA Sec. 600. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?

d. FAA Sec. 612. For CIA activities?

e. FY 80 App. App Sec. 1504. To pay pensions, etc., for military personnel?

f. FY 80 App. App Sec. 1506. To pay U.N. assessments?

g. FY 80 App. App Sec. 1507. To carry out provisions of Title section 109(c) (Transfer of Title funds to multilateral organizations for lending.)

h. FY 80 App. App Sec. 1508. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields?

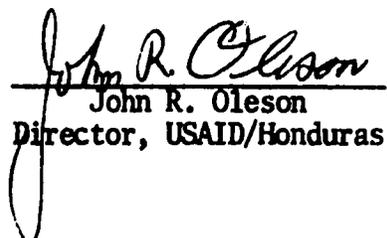
i. FY 80 App. App Sec. 1513. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?

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ANNEX F

CERTIFICATION PURSUANT TO 611(e) OF THE
FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, John R. Oleson, the principal officer of the Agency for International Development in Honduras, having taken into account among other factors the maintenance and utilization of projects in Honduras previously financed or assisted by the United States, do hereby certify that in my judgement Honduras has both the financial capability and human resources capability to effectively maintain and utilize the Project: **SMALL FARMER COFFEE IMPROVEMENT.**



John R. Oleson
Director, USAID/Honduras

Date: May 5, 1981

SOCIAL FEASIBILITY ANALYSIS FOR
COFFEE TECHNIFICATION PROJECT

OUTLINE

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3. CHARACTERISTICS OF SMALL AND MEDIUM-SMALL COFFEE FARMS
 - a. Land Tenure
 - b. Farm Size and Area in Coffee Production
 - c. Use of Production Technologies
 - d. Access to Credit
 - e. Access to Technical Assistance
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 - h. Organization of Coffee Production
4. CHARACTERISTICS OF COFFEE FARMERS
 - a. Risk-Taking and Motivation
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BIBLIOGRAPHY

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1. INTRODUCTION

The success of any project depends on a variety of factors within the defined scope of project activities and within the social-cultural environment. The social soundness analysis of a project, then, is specifically concerned with how the interaction of this environment with project activities will effect the desired developmental outcomes. It is closely related to the economic and technical analyses as it must demonstrate that project activities which are technically and economically sound will be feasible in the particular socio-cultural context of their execution. However it is not, as traditionally assumed, concerned primarily with the attitudes and motivation of the target group. Rather, these are some of many factors to be analyzed in the socio-cultural environment.

This Project is based on the premise that coffee technification activities will result in an increase in farmer income sufficient to finance rust control measures and to increase or maintain the farmer's disposable income. The Project strategy is for small and medium-small coffee farmers to adopt production technologies made available through the credit and technical assistance activities of the Project, thereby increasing productivity and consequently increasing farmer income. These premises are analyzed by examining three areas: (1) the general "fit" between the existing characteristic of coffee farms and the proposed project activities; (2) by the analysis of farmer characteristics; and (3) by a rigorous test of various hypotheses about the feasibility of the project.

At the outset, it was clear that the methodology to be followed in this analysis was atypical for A.I.D. projects. An extensive data base already existed in computerized form, allowing a level of sophistication in the treatment of data which is not usual for social analyses. While the reader familiar with "typical" social analyses may be disappointed, it is believed that a rigorous scientific approach to the problems is much more useful than mere description. Consequently, the discussion in this Annex will be maintained in fairly technical form and presented in a non-technical form in the summary of the analysis (Section _____ of the Project Paper).

2. TARGET POPULATION SELECTION CRITERIA

The following typology of coffee producers was used to define the target population for this Project. As in most typologies based on a cluster of common characteristics, it should be recognized that one is dealing in reality with a continuum of farms and that the types are somewhat artificial constructs. Nevertheless, these types have a heuristic value as well as a basis in fact.

The principal types are farm size strata, based on data from coffee farms in Guatemala and Honduras. Micro-farms, the first stratum, range up to 1 hectare (1.6 manzanas). Small farms, stratum 2, range from 1 to approximately 10

hectares, with 1-5 hectares of coffee. Medium-small farms, stratum 3, range from 10 to approximately 35 hectares, with 5-10 hectares of coffee. The medium and large farms, stratum 4, have more than 10 hectares of coffee.

A study of coffee farmers in one municipality of Guatemala defines technological levels based on a technological index. This index measures the percentage of farmers using 11 improved cultivation practices. Micro-farmers typically are subsistence farmers who are coffee gatherers with an extremely low level of technification. The farm has coffee bushes scattered in with other crops, little investment of resources (labor or otherwise), and less than 10% of them use shade control or some form of disease control. Small farms are distinguished from micro-farms by a broader range of technological practices, including some use of seedbeds and nurseries, a very limited use of pruning and fertilization, but somewhat greater shade and weed control. Approximately 20% of small farmers use some of these techniques. Medium-small farms use somewhat more seedbeds and nurseries, a significant amount of coffee varieties, some repopulation, chemical weed control, and soil analysis, significant amounts of pruning, fertilization and disease control. Almost half engage in shade control, approximately 40% of all farmers in this category use some technification.

Because of the coincidence of farm size and levels of technification, many observers of the coffee production structure in Central America have assumed that farm size is the cause of levels of technification. Consequently, the target group selected for most existing public coffee assistance program has been medium and large farms, on the assumption that it is difficult and not cost effective to technify small coffee farms.

However, the starting point for selection of a target group for A.I.D. projects is existing levels of income, not existing levels of technification. In terms of income, both the micro-farmer and the small farmer currently fall within the AID target population, typically earning less than the per capita income which defines the poverty group. The medium-small farmer is on the margin or somewhat above the poverty line; however, with a loss of trees to coffee rust he will quickly fall back into the target group. Thus, it is legitimate to consider these farmers in the target population since, without external assistance, they would swell the ranks of the target group after coffee rust hits them.

The following selection criteria have been adopted in the Project design to identify the specific target group for this project:

1. Total area in coffee production is greater than 1 hectare and less than 10 hectares;
2. Average yield per hectare of coffee is less than 15 quintales oro.
3. Dependency on income from coffee for subsistence--i.e. approximately 50 percent or more of the farm income derives from coffee;

4. The zone has sufficiently developed physical infrastructure, particularly roads, to permit access by Project personnel, inputs, and to facilitate marketing.
5. Agronomic conditions are adequate for coffee production;
6. At least 50% of the farms within the zone of concentration fall within the above definition of the target population;

One of the basic aspects of Project design from the outset has been that the target group will be selected with both desirable and feasible criteria in mind. It is desirable, in terms of A.I.D.'s mandate to work with the first three strata of coffee farms because they are the actual and potential rural poverty group. The thrust of this analysis is to show that it is feasible to technify coffee production on small and medium small farm strata. It will be noted that application of the selection criteria eliminates the micro-farmer as well as the medium and large farmers. The rationale for this is that the micro-farmer is basically, as noted before, a gatherer. He has adopted no elements of technification and for him coffee is not a principal source of income. His motivation to risk what little capital and land he has to go heavily in debt in order to technify will probably be minimal. On the other hand, it is almost impossible for national delivery systems to reach this type of farmer. When he loses his coffee trees to rust, he will most likely diversify rather than invest in coffee.

Thus, the technification strategy is not likely to be a viable short-term solution for most micro-farmers, either in technical or social terms. Diversification, whether aided by public sector institutions or occurring on the farmer's own initiative, should be viewed as the most appropriate short-term strategy to deal with coffee rust. However, when the new resistant varieties are available to these farmers they may return to coffee, since these varieties require a much lower level of investment per hectare. Thus, in the medium and long term, resistant varieties will be a viable option for this category of the target group. Consequently, the outcome of ROCAP's Regional Coffee Rust Control Project will be of critical importance to these farmers.

Following the above criteria one can estimate the approximate size of the potential target population of the Project. According to a coffee census conducted by IHCAFE in 1978, Honduras has approximately 48,700 coffee producers. About 54% of these (26,420 farms) meet the first two criteria established for the target population--i.e. they have between 1 and 10 hectares in coffee and have average yields below 15 quintales oro per hectare. Approximately three-quarters(20,343) of these farms can be characterized as primarily coffee producers, deriving relatively lesser income from other farm or non-farm activities.

When the infrastructure selection criterion is applied, the size of the target population is reduced even further. A large proportion of all coffee farmers

are located more than 3 Kms from a road(28.7%). On the other hand, over half(51.6%) are located within 500 meters of a viable road.

TABLE 1
PERCENT OF FARMS BY DISTANCE FROM USABLE ROAD

On Road	30.1
Less than .5 Km	21.5
.5 Km to 1 Km.	11.5
1 Km. to 3 Kms.	8.1
More than 3 Kms.	28.7

This distance criterion, it should be noted, does not discriminate against small farms. No significant differences are found in distance to road for farms of different sizes(Kendall's Tau C=0.03; a=0.34). Small farmers are just as likely to be found close to the road as large farmers. If one considers farmers within 1 Km. of a road as a conservative estimate of the proportion of the target population within reach of adequate infrastructure, approximately 12,836 coffee farms currently meet the first four selection criteria.

These four criteria alone will not be sufficient to narrow down the potential target group to the number of farmers which can be covered with the resources provided by this Project. Furthermore, this infrastructure selection criterion is relatively temporal, as IHCAFE has placed a high priority on the construction of penetration roads in order to increase access to small farmers. AID's Rural Trails and Access Roads Project represents another means for increasing spatial access of small coffee producers to the activities of the Project. The above figure represents more accurately the proportion of the target population that could be reached in the first year of the Project. This number can be expected to increase each year with construction of adequate physical infrastructure.

The Project strategy assumes that application of the agronomic and zone of concentration criteria will provide a relatively objective means to reduce the potential target group of 12,836 farms to the actual Project target group of 3,100 farms. An attractive alternative is the selection of specific regions of the country, since this would also facilitate Project implementation by concentrating technical assistance, credit, and supervision activities in one discrete geographical area. IHCAFE is reluctant to apply a regional focus because of the probable outcry from farmers in other regions who will feel discriminated against.

3. CHARACTERISTICS OF SMALL AND MEDIUM-SMALL COFFEE FARMS

The level of technification on target group farms has been described. This section will further describe these farms in terms of relevant land, labor,

capital and technology characteristics. These demo-techno-economic factors are viewed as the basis for the ideological characteristics of small farmers described in Section 4.

a. Land Tenure:

Land tenure characteristics should be described because it is commonly believed in Honduras that these are a constraint to investment on small coffee farms. Consequently, it is often argued that provision of title is an essential pre-condition to credit schemes such as the one proposed in this Project. These views are not, however, supported by the data concerning land tenure.

The average percentages of coffee farms falling into various land tenure categories is given below.

TABLE 2

PERCENT OF FARM LAND BY LAND TENURE STATUS

<u>TENURE STATUS</u>	<u>PERCENT OF FARM LAND</u>
OWNED	90.5
RENTED	3.4
SHARECROPPED	1.4
OTHER	4.7

Almost all of the land in coffee is owned by the farmer, with rather insignificant percentages falling into other land tenure categories. The definition of ownership in this context refers, however, not only to full title (dominio pleno) but also to legally recognized usufruct rights (dominio util) to farm ejido lands. Ejido lands are owned by the municipality, which provides long-term use rights to individuals. Dominio Util land is a constraint to investment because it predisposes some farmers against making long-term investments and because this type of land is not alienable and thus cannot be mortgaged for credit. This constraint is being addressed in two different ways. First, the Honduran government through an amendment to the land reform laws proposes to transfer full title to coffee farmers currently operating on ejido lands. Second, that lack of full title has not prevented all small coffee farms from acquiring credit. IHCAFE guarantees loans where the farmer lacks sufficient collateral, such as is the case with lands held in dominio util. IHCAFE does not have the resources to guarantee all investment loans planned under the Project. However, BANADESA and BANHCAFE have both agreed to provide loans with the crop rather than the land as collateral.

b. Farm Size and Area in Coffee Production:

The target group for A.I.D. assistance programs in the agricultural sector was defined in the 1978 Agricultural Sector Assessment for Honduras. This group

includes, independent small farms with 1 to 35 hectares in land. This criterion has been refined considerably to select a meaningful target group for this Project.

Of all coffee farms meeting the basic selection criteria, approximately 90% have a total farm area of between 1 and 35 hectares, while only 10.1% have more than 35 hectares. Coffee farms with less than 10 hectares in coffee are distributed among the following size classes:

TABLE 3
DISTRIBUTION OF TARGET FARMS AND AREA IN COFFEE BY SIZE CLASS

AREA IN COFFEE PRODUCTION	No. OF TARGET FARMS	% OF TARGET FARMS	TARGET AREA IN COFFEE(HA)	% TARGET AREA IN COFFEE	% NATIONAL AREA IN COFFEE
1 to 2 hectares	12,206	46.2	18,309	22.5	18.1
2 to 5 hectares	10,938	41.4	38,283	47.2	37.8
5 to 10 hectares	3,276	12.4	24,570	30.3	24.2
TOTAL	26,420	100.0	81,162	100.0	80.1

The potential target group in terms of the size criterion accounts for 80% of all coffee land in the country. This project will improve approximately 5,030 hectares of land, which represents 6% of the potential coffee target area. As described in Section 2, application of the additional selection criteria will be the basis for identifying the actual project improvements versus the potentially technifiable coffee lands.

c. Use of Production Technologies:

A purely descriptive approach, as described in Section 2, shows an apparent relationship between levels of technification and farm size strata. The referenced survey of small farms in Guatemala supports the commonly held view that smaller farms tend to be less technified. However, a rigorous statistical analysis demonstrates that no statistically significant relationship is found between the use of various production technologies and the size of the coffee farm. All coffee farms falling within the target population, have low levels of technification. Table 4 below provides information on the use of various production technologies by farm size category.

TABLE 4
USE OF SELECTED TECHNOLOGIES BY FARM SIZE

TECHNOLOGY	PERCENTAGE OF FARMS USING WITHIN FARM SIZE CATEGORY		
	1 to 5 ha.	5 to 35 ha.	35+ ha.
1. Mixed or improved varieties of coffee	75.9	68.1	70.6
2. Fertilizer	32.8	31.9	47.1
3. Weed control(chemical)	1.7	4.3	11.8
4. Repopulation	79.3	88.3	88.2
5. Disease/plague control	1.9	5.3	0.0

As can be seen from the distribution in this table, the proportion of technologies used is independent of farm size. Improved varieties are equally important in all three size categories. Fertilizer use, chemical weed control, and repopulation all show slight increases as farm size increases, but the variation within each farm size category is as great as or greater than that between groups. Consequently, these slight increases are not statistically significant.

As part of this social analysis, an attempt was made to scale the various technologies by their level of sophistication. Using a Guttman scale analysis, it was found that the use of production technologies is not scalable(coefficient of scalability=0.45). That is, it is not possible to assert from knowledge of the use of one technology on the farm that the use of other "lower order" technologies will also be found on the same farm.

d. Access to Credit:

Half of coffee target farms have never received formal credit. There is no significant difference in access to credit by farm size(Kendall's Tau C=0.05; a=0.25). There is a significant difference between the area of the farm in coffee production and access to credit (Kendall r=0.174; a=0.031) for target coffee farms. The most probable causes of this limitation are that the private sources of formal credit have not looked on small farms as viable credit risks and because IHCAFE has been concentrating its resources on medium-sized farms. IHCAFE's rationale is that its overriding concern in the last five years was to create a significant position for Honduras in the world coffee market, which could best be achieved on medium-sized farms with the greatest potential for a rapid and significant increase in production.

e. Access to Technical Assistance:

Approximately three-quarters of target farms have never received any assistance from either IHCAFE or other institutions.

As noted above, IHCAFE has deliberately stressed assistance to medium-sized farms. This is seen not in the presence or absence of IHCAFE technical assistance, but in its intensity. There is a significant positive relationship between the area of the farm in coffee production and the number of technical assistance visits ($r=0.25$; $a=0.003$ for IHCAFE; and $r=0.17$; $a=0.05$ for total technical assistance from all sources).

f. Income:

The average coffee farm in the target population has a net income of \$1,930. With an average family size of 6.7 persons, this translates into a per capita net income of \$288. The average net per capita income for non-coffee producers is \$141, representing a significant difference in income due to coffee production ($t=-2.50$; two tailed probability= 0.01). Were these coffee farms to be forced out of coffee production by rust they would lose approximately 51% of their current per capita income. Moreover, within the coffee-producing group, there is a significant difference ($t=-2.00$; two-tailed prob.= 0.05), in per capita incomes, with average net per capita incomes of \$171.50 and \$366 for farms with total area of under 5 hectares and those with 5 to 35 hectares, respectively.

Differences exist in the degree of dependence on coffee as a source of income, though these are not related to the size of farm ($\tau C=-0.01$; $a=0.44$). Table 5 below summarizes information on the percentage of total farm income resulting from the sale of coffee.

TABLE 5
PROPORTION OF FARMS BY PERCENTAGE OF INCOME RECEIVED FROM COFFEE SALES

<u>PERCENTAGE OF INCOME RECEIVED FROM COFFEE</u>	<u>PERCENTAGE OF FARMS</u>
Up to 25 %	20.1
25 to 50 %	3.0
50 to 75 %	4.7
75 to 100%	72.2
TOTAL	<u>100.0</u>

Over three-quarters of the target farms receive fifty percent or more of their income from coffee. By the same token, the amount of off-farm income is negligible (median=\$0; mean=\$36.50). Thus, the targetted coffee farms are relatively specialized producers, who depend primarily on coffee for their income. This description appears to be valid regardless of the size of the farm.

g. Coffee Income Distribution:

Income derived from coffee, as in any other commodity crop, is distributed among producers and various intermediaries. Target group farmers get varying proportions of the total export value of the coffee they produce. For the

1978/79 harvest, the average value of the exported coffee was \$173 per quintal oro. The distribution of farm gate prices for the same harvest is given below:

TABLE 6
FARM GATE PRICE PER QUINTAL ORO FOR 1978/79

VALUE (\$US) PER QQ ORO (percentage of export price)	PERCENTAGE OF FARMS RECEIVING
0 to 50(0.0-28.9)	7.7
50 to 75(28.9-43.3)	30.2
75 to 100(43.3-57.8)	46.2
100 +(57.8-100.0)	16.0
TOTAL	<u>100.0</u>

A number of factors account for this variability in the distribution of coffee income. When these data were compared with farm size, no significant relationship was found ($\tan C=0.03$, $a=0.30$). The most significant factors, as discussed in Section 5 below, are the level of processing of the coffee bean prior to sale by the farmer, and the type of relationship between the farmer and the coffee market. Farmers who have the technology to process coffee after harvest get a larger share of the export value in part because they can hold out their harvest until the price is favorable. Many small farmers are caught in a vicious cycle of dependency on intermediaries who supply informal credit to meet farmer subsistence needs on the condition that farmers sell their crop at predetermined contract prices. This factor, probably more than any other, accounts for the variations noted in the distribution of export income generated by coffee.

h. Labor:

Coffee farming, as distinct from subsistence farming, is not solely a family endeavor. While the household is the principal source of labor on coffee farms, even small and medium-small ones depend on hired labor. This is particularly the case during the harvest, when coffee tends to employ large numbers of migrant workers. The percentage of wage labor used on the average coffee farm is given below in Table 7.

TABLE 7
PROPORTION OF FARMS BY PERCENTAGE OF WAGE LABOR TO TOTAL LABOR

<u>PERCENTAGE OF WAGE LABOR</u>	<u>PERCENTAGE OF FARMS</u>
Up to 25%	48.3
25 to 50%	31.1
over 50%	20.6
TOTAL	<u>100.0</u>

At present, there is little data available on the composition of the migrant worker class, or on the possible constraints that may exist in the availability of such labor for the present Project. Two factors are known: first, the level of rural underemployment is high enough to provide an adequate supply at labor for the harvest; second, the demand for labor at peak harvest time is high enough in most coffee producing areas so as to inflate the cost of labor. The financial analysis for this project take into account this labor cost; thus, the project design adequately takes into consideration this aspect of the wage labor problem.

i. Organization of Coffee Production:

The factors of land, labor, capital and technology are organized on family farms in Honduran coffee production. Thus, in comparative terms, the social organization of coffee production is different from other Central American countries. In Costa Rica, coffee cooperatives are significant organizers of capital and technological factors. In Guatemala, El Salvador and Nicaragua, the bulk of coffee production is organized on large and medium-sized enterprises. Thus, Honduran family coffee farm is more akin to the Colombian structure of production than to neighboring countries.

Coffee cooperatives are not significant sources of credit, technical assistance or marketing assistance for most target group farms. The overwhelming majority (82.0%) of coffee producers do not belong to any type of cooperative. This is independent of farm size (Chi Square=2.29; 1 DF; a=0.13). Coffee farmers as a group show little enthusiasm for joining cooperatives; two-fifths (39.9%) indicate interest in joining a cooperative, while a comparable number (41.8%) are against cooperatives and the remainder (18.3%) do not indicate an opinion. This appears to be characteristic of a system of small holding farms (see: Page, 1975, p. 45), where the cultivating class is dependent on land as its principal source of income, while the agrarian upper class is dependent on commercial capital and not land. Farmers in this context are usually "too divided by competition, internal wealth stratification, and structural isolation..."(ibid. p. 46) to be able to develop organizations of solidarity except where introduced or induced by an institutional structure outside the agrarian community. Rural sociological analysis conducted in southern Honduras, as well as a recent anthropological analysis conducted for A.I.D., support this explanation of the low level of organization among peasant farmers within an agrarian system of small holdings(see White, 1976 and Boyer, 1981).

4. CHARACTERISTICS OF COFFEE FARMERS

The description to this point has focussed on coffee farms, in order to set the stage for the description of the target group farmers. In the agricultural project design process, a creative tension exists between the agronomic technology and the human dimension. In some projects, this is never

resolved and one ends up with irrelevant social analyses which describe target group mentality in some detail but do not demonstrate its relevance to project design. In this project, however, social factors have played an integral part in the design process, and continuous feedback has existed between technical design and social analysis. This is because the social analysis has focussed on the farm as well as the farmer, while the technical design has taken into account the farmer along with the farm.

a. Risk-Taking and Motivation:

The problem faced by many A.I.D. agricultural development projects is how to incorporate peasants with a primary orientation to subsistence production into a more technified production systems. This is often conceived of as a problem of inducing risk-taking behavior among risk-averse peasants, which is primarily a question of motivation. Thus, it is concluded that the primary social soundness consideration is provision of incentives that will motivate peasants to take the risks involved in technification. The fallacies in this line of reasoning have been sufficiently demonstrated but bear repetition. Peasant farmers are not risk-aversers. They continually take risks, but the parameters of these risks are changed when technological changes are introduced. Peasant subsistence-orientation does not preclude motivation for technifying farms; rather, a subsistence orientation is a powerful incentive to increase production in order to improve the quality of peasant family life.

The most common fallacy in this area is that motivation to take risks is distinct from technical and economic factors. Thus, it is somehow the task of the social analysis to analyze this problem in socio-cultural terms, which are distinct from the technical and economic.

This social analysis is based on the premise that the socio-cultural characteristics of coffee farmers are an outcome of the interaction between techno-economic factors and farmer personal characteristics. Coffee farmers, then, are both a product of the techno-economic environment and agents in the transformation of that environment. In the specific Honduran context, small coffee farmers are a self-selected category of peasants with a strong entrepreneurial orientation, who are already oriented to taking risks in a production environment with a higher level of technification than basic grain production. This is because of the particular historical context of Honduran coffee production. Up until 1974, coffee was only marginally important in the Honduran economy. The dramatic rise in coffee prices after the Brazil freeze created the motivation for most of the existing coffee farmers to go into coffee production in a significant amount. The artificially high world prices between 1976 and 1979 created a climate which induced thousands of peasant farmers to take the risk of devoting substantial amounts of land to coffee trees. This risk is substantial not only because coffee is a perennial but also because of the relatively heavy initial labor investment.

This Project comes on at a time when these coffee farmers are caught in a squeeze: prices have dropped while the costs of production in a rust situation

will rise dramatically. The particular question for this social analysis at this point in time are: (1) why have farmers not been motivated to technify in the past; and (2) will farmers be motivated to continue taking risks, and much heavier credit risks during the life of this project.

The price structure in the past five years has been a disincentive for coffee technification. Small coffee farmers were able to reap bumper profits with average harvests, and therefore were not motivated to increase productivity. When one's target is a certain level of income, and this income is produced with minimal technification, there is no reason to technify. However, the current and projected price structure provides a strong motive for technification, since the only way to maintain the levels of disposable income to which farmers have become accustomed is to increase production.

While the above is by itself a sufficient motive to induce technification, the coffee rust threat is another incentive for technification. However, the link between technification and rust prevention is probably not perceived by many small farmers. Thus, one of the principal tasks of the project T.A. effort is to explain this strategy to coffee farmers, thus providing further incentives to technify.

It should be noted that the question of motivation is not essentially different from that of large coffee farms. A principal cause of technification in terms of fertilizer adoption on large farms in Guatemala and southern Mexico in the last two decades has been the increased cost of labor. Coffee rust threats in both countries are only now beginning to impact on large farm technification.

b. Coffee Farmers Knowledge

Another widespread misconception is that small farmers do not technify because they do not know about higher levels of coffee technology. This lack of knowledge, it is thought, would be a constraint to the technification process proposed in this Project.

In fact, the principal technological practices contemplated in the technification process are common knowledge. Improved varieties, tree pruning, shading, chemical controls, and fertilizers are all familiar elements with a commonly understood impact on productivity.

The farmer knowledge problem lies in the gap between a nodding acquaintance and the detailed knowledge required for correct application of a technology. For example, fertilizer is commonly misused, instead of two or three dosified applications, farmers tend to apply it once in heavy dose. Thus, the constraint to be addressed is one of detailed and practical knowledge of the technologies to be introduced. This observation is supported by the demonstrable relationship (analyzed in Section 5 below) between technical assistance and the adoption of technology.

The project design addresses this constraint by providing for technical assistance to small coffee farmers. Because of the low ratio of extension agents to farmers, and the need for detailed and continual transfer of knowledge to large numbers of small coffee farmers, the technical assistance component will develop and introduce training methods which go beyond the traditional face-to-face approach used by IHCAFE currently.

In this regard, literacy is not a major constraint to transfer of knowledge, as discussed below. Two-thirds of small producers are literate, with no significant differences between small and medium farms.

c. Quality of Life Indicators

While income data define the target group, some indicators of social conditions can be discussed in order to better understand the situation of the target group. The two indicators for which data are available are access to health services and housing condition.

The technical assistance delivery system will need to take into account the literacy and reading levels of the target farmers. Written materials of any kind will be useless for at least a third of the target population. In the remaining cases, written materials will need to be designed to the reading skill level of the participating farmers. Consideration might be given to experimenting with alternative information delivery systems such as radio(see: White, 1976). This latter would be particularly workable where technical assistance is provided to organized groups.

Although among all coffee producers, one finds that the larger farmer reports more often(94%) than the smaller farmer that he is able to pay for medical care, still fully 83% of the smaller producers reported that they can afford medical treatment most or at least some of the time. This contrasts with the same data for non-coffee producers, where only 72.8% of the small and 88.4% of the large farmers reported that they can afford medical treatment at least some of the time.

Slightly over half(51.3%) of the coffee farms surveyed do not have a letrine. In terms of access to potable water, there is no significant difference between farms of different sizes(Tau C=0.00; a=0.48). Farms have access to potable water as indicated below:

TABLE 8

PERCENTAGE OF COFFEE FARMS BY DISTANCE FROM POTABLE WATER

Less than 100 mts.	66.8
100 to 500 mts.	18.8
500 to 1000 mts.	6.8
More than 1000 mts.	7.6
TOTAL	<u>100.0</u>

The above data indicate that the majority of coffee farms experience few problems in access to potable water.

Approximately 80% of coffee producers have tile roofs, and another 13% have tin roofs. Thus, 93% of coffee producers have that can be considered improved roofing. No significant difference was found between roofing materials and farm size (Tau C=0.01; a=0.42).

Regarding the use of flooring materials, however, a significant difference (Tau C=0.18; a=0.0005) was found by farm size. The percentage breakdown by farm size according to the use of various flooring materials is given in Table 9 below.

TABLE 9
PERCENTAGE OF COFFEE FARMS USING VARIOUS FLOORING MATERIALS

FARM SIZE	FLOORING MATERIAL			
	DIRT	WOOD	CEMENT	OTHER
1 to 5 Ha.	87.0	0.0	7.0	6.0
5 to 35 Ha.	67.3	2.7	21.3	8.7

The major difference is that a relatively higher proportion of houses on farms with 5 to 35 hectares have improved flooring materials.

5. RESULTS AND DISCUSSION OF SOCIAL FEASIBILITY ANALYSIS

a. Hypotheses

The purpose of this section is to examine the feasibility of achieving the Project's objectives with the proposed Project components. This social feasibility analysis will examine several related hypotheses in order to assess the validity of the Project design strategy. These hypotheses were formulated in order to look beyond the straightforward linkages assumed above and demonstrate some more complex socioeconomic relationships to be found in the current coffee production system. The principal hypotheses examined in this analysis are:

1. Regardless of the size of area in coffee, technical assistance and credit will result in an increased use of improved coffee production technologies.
2. Regardless of the size of area in coffee, the value received per quintal of coffee will rise as a result of the adoption of coffee production technologies.

3. Regardless of the size of area in coffee, the marketing system for coffee is structured so as to result in a cost/beneficial return to the farmer.

In all these hypotheses, the effect of size of coffee farm was controlled for in order to demonstrate the relationships without the confounding effect of farm size as an independent variable. Thus, if the hypotheses are confirmed one will be able to state that all target group farms, whether small or medium-small, will be favorably affected by Project interventions.

To recapitulate, what is of interest here is whether the provision of technical assistance and credit will result in the adoption of production technologies and whether such a strategy will result in an increase in the income received. Such an analysis required an examination of the effects of technical assistance and credit on the adoption of technology and price received per quintal production (Farm Gate Price). The effects of technology, technical assistance and credit on productivity were assessed, as well as the effect of marketing factors (state of the crop at time of sale and type of purchaser) on the farm gate price. This latter set of analyses provides information on the effects of the social and economic organization of the production and marketing system of coffee on the farm gate price.

b. Data Sources

The data for the analysis were taken from a survey of coffee farms in the Northwest Region of Honduras (IHCAFE, 1980a; IHCAFE, 1980b). This area of the country is a very important coffee production region, and is considered by IHCAFE to contain a representative sample of coffee farms under different conditions of size of area in coffee, productivity levels, and use of production technologies. The survey was carried out for the 1979/80 harvest with a sample of 263 coffee farms selected randomly throughout the region under study.

General descriptive information on the quality of life of small and medium-small coffee farm families, as well as general economic and social characteristics of small and medium-small coffee farm production was taken from both the IHCAFE data and an AID financed survey of small farms nation-wide (see: AID Agricultural Sector Assessment and Annexes, 1978) This survey comprised a randomly selected sample of 2,073 small farms of up to 35 hectares. Data were collected in March 1976 for the 1975 harvest in five regions of the country, and in March 1978 for the 1977 harvest in the remaining three regions. Of the total sample, those farms with more than one hectare and which produced coffee in the sample years were selected for the general analysis of the target population. This produced a sub-sample of 251 farms distributed throughout all regions of Honduras.

c. Methods of Data Analysis:

The hypotheses in stated above were tested by analysis of covariance (No. 1 and 3) and by analysis of partial variance(No. 2) in order to control for the effect of the covariate "Area in Coffee". The extent of farm land in coffee was considered potentially to account for extraneous variance in two dependent variables, "Adoption of Technology" and "Farm Gate Price". A decision was made early on to control statistically for this effect in order to pinpoint the effect of other independent variables. In all of the analysis presented below, the "Area in Coffee" is treated as a covariate and its variance removed from the dependent variables so as to increase measurement precision of the independent variables. This provides an indication of the expected effects of Project activities for coffee farms of any size. Since the existing technical assistance and credit delivery system is oriented toward the larger coffee producer, a failure to partial out (or control statistically) the variance in the dependent variable "Adoption of Technology" or "Farm Gate Price" would produce misleading results for a predictive analysis. Confounding the effect of the "Area in Coffee" with the Project components would not permit an assessment of the potential for the Project to effect similiar changes on small farms, which are not currently the focus of IHCAFE's technical assistance and of credit programs in general.

This method of analysis allowed an examination of the effect of technical assistance and credit on the adoption of technology, the effect of the stage of coffee processing at point of sale on farm gate price received per quintal oro, and the effect of the type of purchaser of the coffee on the farm gate price. Analyses were conducted for all sizes of coffee farms in order to assess these effects on the target population of coffee farms, and to demonstrate that small farms are not at a disadvantage simply because of their size. In these cases the analysis of covariance is most appropriate since the covariate is a continuous variable while the research factors are nominal variables(Cohen and Cohen, 1975). The research factors were coded as dummy variables. The analysis of covariance was carried out with a multiple regression approach in order to be able to test the normal analysis of covariance assumption of regression homogeneity, i.e. the assumption of equal slopes indicating the lack of statistically significant factor(s)-by-covariate(s) interaction. Where this assumption is confirmed, it indicates that all farms, small or large, would be equally affected by changes in categories of the Project intervention activities under study. Where the assumption does not hold, it means that the effects are differentially different for different size farms by activity category. The regression equations for each set of analyses were produced and graphed for greater clarity of presentation.

Since all of the variables in Hypothesis 2 are continuous, an analysis of partial variance was performed(Cohen and Cohen, 1975). This allowed an examination of the effect that adoption of technology has on the farm gate price per quintal after partialling out of the farm gate price the effect of

area in coffee. This analysis tested the effect of adoption of technology on farm gate price "adjusted" for the area in coffee, or with area in coffee "held constant statistically".

The first step in each of the analyses presented was to test for the regression homogeneity so as to take account of any significant interaction effects between the independent variables of interest and "Area in Coffee". Where the interaction effect was found non-significant at the $\alpha=0.05$ level, then the interaction terms were dropped from the analysis model and the sum of squares due to interaction effects pooled into the residual sum of squares. To simplify the presentation, only the final model of each analysis is presented, after having dropped non-significant aspects (at $\alpha=0.05$) and having pooled the non-significant sum of squares into the residual (error) sum of squares.

d. Effects of Technical Assistance and Credit on the Adoption of Technology:

The first hypothesis to be tested can be stated as follows:

Can the provision of technical assistance and credit result in the adoption of production technology independent of the size of the area of the farm in coffee?

This hypothesis was tested by an analysis of covariance with adoption of technology (ADOPTEC) as the dependent variable and technical assistance from IHCAFE (ATHIC) and credit (CRED) as the independent variables, controlling for the area in coffee (ARCAFE). The results of this analysis are given in Table 10 below.

These results indicate that each of the independent variables and the control variable separately account for a significant portion of the variance in Adoption of Technology. The total amount of variance in the dependent variable accounted for by the additive effects of the independent variables is 21.39% (as indicated by the R SQUARE figure in the table), and is statistically significant at a 0.01.

To more clearly see the effects of technical assistance and credit on adoption of technology after controlling for area in coffee, a series of regression equations were calculated from the data. This information is summarized in Graph 1. The positive slopes indicate that for any category of technical assistance or credit, the more area the farm has in coffee the more technified it is likely to be. The lack of interaction (that is, the equality of the slopes for each regression line) indicates that the magnitude of the effects of technical assistance and/or credit on adoption of technology are the same for all coffee farm sizes (i.e. area in coffee). Moreover, the graph of the regression lines makes clear that the greatest gains in adoption of technology are realized by the provision of both technical assistance and credit. The effects of technical assistance are greater than the effects of credit alone.

This latter finding is to be expected given the fact that while some technologies do require investment capital (such as fertilizers and new varieties) the successful adoption of any technology, be it labor or capital intensive, requires knowledge of its correct application. Thus the analysis appears to confirm the hypothesis that the provision of technical assistance by IHCAFE and of investment credit will result in an increase adoption of coffee production technologies regardless of the size of the area in coffee.

TABLE 10
ANALYSIS OF COVARIANCE:
ADOPTION OF TECHNOLOGY WITH TECHNICAL ASSISTANCE FROM IHCAFE,
CREDIT, AND THE NUMBER OF MANZANAS IN COFFEE

<u>SOURCES OF VARIATION</u>	<u>SUMS OF SQUARES</u>	<u>DEG. OF FREEDOM</u>	<u>F-TEST</u>	<u>SIGNIFICANCE</u>
1. SS due to ATHIC, CRED, and ARCAFE	14770.397	3	23.502	0.01
1.a. SS due to ATHIC adjusted for CRED and ARCAFE	5326.969	1	25.428	0.01
1.b. SS due to CRED adjusted for ATHIC and ARCAFE	1859.531	1	8.876	0.01
1.c. SS due to ARCAFE adjusted for ATHIC and CRED	2639.273	1	12.598	0.01
2. SS residual	54258.873	259		
MULTIPLE R	0.4626			
R SQUARE	0.2140			
STANDARD ERROR	14.4739			

d. Effects of Technology, Technical Assistance and Credit on Productivity:

The average level of productivity for coffee farms in Honduras is 2.51 quintals oro per hectare, with a standard deviation of 1.02 quintals. Approximately two-thirds of all coffee farms in the country average between 1.49 and 3.53 quintals oro per hectare in coffee production. Of the target farms, 26.8% produce less than 5 quintals per hectare, 45.8% produce between 5 to 10 quintals, and 27.5% between 10 to 15 quintals. The average target group

coffee farm has a higher productivity level than the national average. This is because the micro-producers have been eliminated from the target population(see section on Target Population: Selection Criteria). These micro-farms characteristically have productivity levels well below the average, thus skewing the national average to the lower end of the productivity scale. The target population is still characterized by low levels of productivity which would make the use of rust control technology prohibitively expensive. The observed differences in productivity per hectare for coffee farms of different sizes are non-significant($r=0.156$; $n=259$; $t=1.577$, not-sig. at $\alpha=0.05$). The relationship between the area of the farm in coffee production and productivity is also non-significant($r=0.066$). The factors which are positively related to productivity are: technical assistance from IHCAFE($r=0.174$; $\alpha=0.042$); the use of fertilizer($r=0.263$; $\alpha=0.002$); plant repopulation($r=0.214$; $\alpha=0.012$); and access to credit($r=0.206$; $\alpha=0.015$). Thus, an increase in access to IHCAFE technical assistance, to credit; and the increased use of these selected technologies can be expected to increase the productivity of the coffee farm, regardless of the size of the area in coffee.

f. Effect of Adoption of Technology on the Farm Gate Price of Coffee:

The hypothesis to be tested here is stated as follows:

Can the Farm Gate Price of coffee be expected to rise as a result of the adoption of coffee production technologies independent of the size of the area of the farm in coffee?

This hypothesis was tested by means of an analysis of partial variance. This type of analysis is very similar to an analysis of variance, and indeed the first part of the analysis is a conventional analysis of variance to assess the separate effects of the independent variables on the dependent variable. In this case, the dependent variable is the Farm Gate Price(FGP) measured as the value received per quintal oro of production. The independent variables are the Adoption of Technology and the Area of the Farm in Coffee. The analysis of variance results are given in Table 11.

TABLE 11
ANALYSIS OF VARIANCE
FARM GATE PRICE WITH AREA IN COFFEE AND ADOPTION OF TECHNOLOGY

<u>SOURCES OF VARIATION</u>	<u>SUMS OF SQUARES</u>	<u>DEG. OF FREEDOM</u>	<u>F-TEST</u>	<u>SIGNIFICANCE</u>
1. SS due to ARCAFE AND ADOPTEC	90651.379	2	11.238	0.01
1.a. SS due to ARCAFE adjusted for ADOPTEC	40256.173	1	9.981	0.01
1.b. SS due to ADOPTEC adjusted for ARCAFE	25131.371	1	6.231	0.01
2. SS residual	1032519.811	256		
MULTIPLE R	0.2841			
R SQUARE	0.0807			
STANDARD ERROR	63.5081			

This analysis of the data indicate that both the Area of Farm in Coffee and the Adoption of Technology each account for a significant independent portion of the variance in the Farm Gate Price after controlling for each other. Together, in the full additive model, they account for a significant proportion of the variance in the observed Farm Gate Price as indicated by the significance level of the overall F test. This is the case even though the total variance accounted for in Farm Gate Price is under 10%. The fact that so little variance is explained merely indicates that there are other potential explanatory factors affecting the Farm Gate Price which have not been considered here. It does not negate the demonstrated explanatory value of the factors under consideration in the present analysis.

In order to more precisely examine the effect of the Adoption of Technology on the Farm Gate Price independent of the effect of the Area in Coffee, an analysis of partial variance was performed(see: Cohen and Cohen, 1975, pp.363-367). This allows an examination of the relationship between Adoption of Technology on the Farm Gate Price adjusted for the Area in Coffee. That is, the dependent variable now becomes the Farm Gate Price after the variance in it associated with Area in Coffee has been partialled from it. This is accomplished by combining the unstandardized beta for Area in Coffee times its mean with the constant to form a new constant, while retaining the unstandardized beta for Adoption of Technology from the full additive model as the regression slope. Thus, the relationship examined is that between the Adoption of Technology with that portion of the variance in Farm Gate Price not accounted for by the Area in Coffee. Using the regression results which

were used to produce the analysis of variance information in Table 11 above, the relationship between Adoption of Technology and the adjusted Farm Gate Price is as presented in Graph 2.

The fact that the slopes of the regression lines given above are positive, indicates that one can expect the adoption of coffee production technologies to have a positive effect on the adjusted farm gate price given the present distribution of income. A visual inspection of Graph 2 demonstrates this strong positive relationship between the percent adoption of technology and the adjusted farm gate price. Thus, it can be expected that coffee farms of all sizes will experience an increase in absolute income through the adoption of production technologies.

Since the Farm Gate Price of coffee fluctuates between harvests, this results in the above regression analysis being specific to the harvest year. It was decided, therefore, to convert the regression equation to a more general form. According to IHCAFE sources, the proportion of the export price received by the farm is more or less stable, while the absolute price level will fluctuate from year to year. Thus by converting the present data on Farm Gate Price into the Proportion of the Export Price received by the producing farm, it is possible to calculate the regression line which defines the relationship of the Adoption of Technology to the Farm Gate Proportion of the Export Price adjusted for the Area in Coffee. This relationship is given in Graph 3.

This data indicate that after partialling out the effect of area in coffee on farm gate price, there is a significantly positive relationship between the latter variable and the adoption of technology. This suggests that the adoption of coffee production technologies can have a positive impact on the relative income of the target population.

In sum, the results of this analysis appear to confirm the second hypothesis that the adoption of production technology tends to lead to an increase in the farm gate price per quintal of coffee. Moreover, both the absolute and relative incomes of the targetted coffee farm can be expected to increase as a result of the adoption of technology.

g. Effects of State of Coffee at Time of Sale, Type of Purchaser on Farm Gate Price:

The price received for coffee, however, does not depend exclusively, or even primarily on the results of production technologies. This is evidenced by the low, albeit significant, amount of variance explained by the regression equations. Some of the marketing aspects of coffee which seem to effect the income received by the producer are explored in this section.

The first area to be explored is the State of the Crop at the Time of Sale(ESTADOVT). There are basically five different states of sale of the

coffee crop: Flor, representing the sale of the crop in the flowering stage; Uva, which is the sale of coffee immediately after the harvest and before any processing has taken place; Pergamino Humedo, which represents the sale of the crop after the completion of the initial stage of processing; Pergamino Seco, representing the coffee in after an intermediate stage of processing has been completed; And Oro, the coffee bean after all processing has been completed. Each of these five states of coffee were coded as dummy variables, with Oro as the control group. The effect of the variable ESTADOVT on the FGP was then analyzed after controlling for the effects of ARCAFE. These results are given in Table 12.

TABLE 12
ANALYSIS OF COVARIANCE:
FARM GATE PRICE WITH STATE OF COFFEE AT TIME OF SALE
AND THE NUMBER OF MANZANAS IN COFFEE

<u>SOURCES OF VARIATION</u>	<u>SUMS OF SQUARES</u>	<u>DEG. OF FREEDOM</u>	<u>F-TEST</u>	<u>SIGNIFICANCE</u>
1. SS due to ESTADOVT, ARCAFE	168602.07	5	8.937	0.01
1.a. SS due to ESTADOVT adjusted for ARCAFE	103082.78	4	6.830	0.01
1.b. SS due to ARCAFE adjusted for ESTADOVT	43451.77	1	11.517	0.01
2. SS residual	954569.12	253		
MULTIPLE R	0.3874			
R SQUARE	0.1501			
STANDARD ERROR	61.4248			

The data above indicate that both the State of the Coffee at the Time of Sale and the Area of the Farm in Coffee have significant independent effects on the Farm Gate Price. To more clearly see the relationship between the State of the Coffee and the Farm Gate Price, a series of regression equations were calculated to represent each of the various categories of ESTADOVT. These regression lines were then plotted across a range of values for ARCAFE. The results are presented in Graph 4. Since less than 1% of the farms surveyed sold their crop in oro, this category was dropped from further analysis. In addition, since the standard errors for the constants in the regression equations are rather large, these are presented in parentheses below the corresponding term.

The data in Graph 4 demonstrate that the more the crop is processed the higher the Farm Gate price received. Another important finding of this analysis is

the large degree of variability found in prices received for any given state of sale. However, the more the crop is processed, the less the variability in the price it brings to the producer, with this variability progressively decreasing as one moves from selling in flor(Lps. 90) to pergamino seco(Lps. 64). This suggests that to the extent that the producer is able to sell his crop in a more advanced state of processing, the probability increases that his income per unit of production will be both higher and more stable.

Turning attention now to a related aspect of the marketing of coffee, an examination is made of the relationship between the Purchaser of the Crop and the Farm Gate Price. The analysis of this factor follows the identical procedure as that used above for analysis of the State of the Coffee and Farm Gate Price. However, unlike the former analyses, a significant interaction was found between the category of Purchaser of the Crop(COMPR) and the Area of the Farm in Coffee. The results of the analysis of covariance are given in Table 13.

As this set of data indicate, both COMPR and ARCAFE each contribute significantly to the variance explained in the FGP. Moreover, the significant interaction term indicates that the effect of ARCAFE on FGP differs from category to category of COMPR. This latter effect is more readily perceived by an examination of the individual regression lines for each category of COMPR across ARCAFE. This information is presented in Graph 5. Again, as was the case with ESTADOVT, the standard errors of the unstandardized regression coefficients are relatively large, indicating that a great deal of variability exists in the Farm Gate Price within each category of COMPR. This information is given by the standard errors in parentheses for each equation represented on the graph.

TABLE 13
ANALYSIS OF COVARIANCE:
FARM GATE PRICE WITH TYPE OF PURCHASER AT TIME OF SALE
AND THE NUMBER OF MANZANAS IN COFFEE

<u>SOURCES OF VARIATION</u>	<u>SUMS OF SQUARES</u>	<u>DEG. OF FREEDOM</u>	<u>F-TEST</u>	<u>SIGNIFICANCE</u>
<u>Saturated Model</u>				
1. SS due to COMPR, ARCAFE and COMPR X ARCAFE	154462.53	7	5.717	0.01
<u>Additive Model</u>				
2. SS due to COMPR, ARCAFE	122578.21	4	7.940	0.01
2.a. SS due to ESTADOVT adjusted for ARCAFE	57058.91	3	14.784	0.01
2.b. SS due to ARCAFE adjusted for ESTADOVT	20213.15	1	5.237	0.01
<u>Interactions</u>				
3. SS due to interaction of COMPR X ARCAFE	31884.32	3	2.754	0.01
4. SS residual	968708.66	251		
MULTIPLE R	0.3708			
R SQUARE	0.1375			
STANDARD ERROR	62.1241			

A glance at the graphed regression lines suggests, however, that those farms selling their crop to cooperatives in general receive a higher price per quintal, although the price received declines slightly (as indicated by the negative slope) as the area in coffee increases. On the average, those selling to intermediaries tend to receive a lower price, with farms with less than 16 manzanas in coffee doing better with intermediaries on the farm (IFINCA) and farms with more than 16 manzanas in coffee doing better by selling to intermediaries in the town (IPUEBLO). Since all the targetted

farms for this Project have less than 14.5 manzanas (approximately 10 hectares) in coffee, these farms tend to receive the highest price for their crop from the cooperatives, and the lowest price from the intermediary on the farm.

To assess the effect of ESTADOVT or COMPR on the distribution of income generated by coffee, one need only convert the regression equations already presented to reflect their effect on the Farm Gate Proportion of the Export Price. This information is presented in Graphs 6 and 7 for State of the Crop at Time of Sale and Category of Purchaser, respectively. As is indicated by the data, those farms selling their crop at later stages in the processing receive a larger proportion of the export value of the crop. Also, as in the previous analysis, there is a significant degree of variability around the regression line for each category, which reduces relatively for categories closer to the state of final processing.

What is particularly noteworthy in this set of data, is that the farm gate proportion of the export value of the crop can be nearly doubled simply by having the capacity to sell in pergamino rather than in either flor or uva. The added value of the crop in pergamino is not solely due to its value added by processing, but also to the fact that coffee in pergamino can be stored when prices are low to be sold when market prices are higher. This is not an option when the crop is sold in flor (before the harvest) or in uva, which must be processed within a couple of days of the harvest or it will rot. Thus the price received for sales in either flor or uva appear to be more immediately susceptible to fluctuations in the commodity market, as well as having a lower initial value since the crop is completely unprocessed at the time of sale.

An examination of Graph 7 indicates that those coffee farms selling their crop to cooperatives tend to receive the highest proportion of the export price per quintal oro. For those selling to intermediaries, coffee farms with under 16 manzanas tend to do better by selling to intermediaries on the farm, while those with more than 16 manzanas tend to do better with intermediaries in the town. However, the difference between the intermediaries as a group and the cooperatives also appears to be significant. This would seem to indicate confirmation of the conclusions of other studies on the marketing aspects of coffee produced on small and medium-small coffee farms in Honduras, indicating that the intermediaries retain a larger share of the profits generated by coffee than would be warranted by applying cost and risk-taking criteria(see: Kawas and Zuniga, 1979, p.47ff).

Although this would seem to argue favorably for the expansion of the cooperative movement among coffee producers, this is not likely to happen unless these producers are organized by some organization external to themselves(such as the government) and providing substantial individual economic incentives(see: Paige, 1975, pp.45-48; and TARGET POPULATION DESCRIPTION: Organization, above). One possibility for strengthening the coffee cooperative movement would be to encourage the farmers of a Department or other defined zone to form organizations or to join existing ones. This can be done if IHCAFE technical assistance and training stresses the advantages of cooperatives. Thus, the Project design incorporates this

approach, to be implemented throughout the project life. Such a strategy for Project implementation is in keeping with the overall goal of improving the economic conditions of the small and medium-small coffee producers.

6. SPREAD EFFECTS

There are three main sources of spread effects anticipated within the Project design. The first is within the target farm itself. As the benefits of the Project become evident to the original participants, it is expected that these farmers will gradually technify more of their existing coffee land. Second, the demonstration effects can be expected to influence neighboring farmers to attempt a technification program on their own lands. Third, as IHCAFE develops, tests, and refines its technical assistance delivery capability, it will be able to include increasing numbers of the target population within a permanent on-going technification program. Should a sustained effort by IHCAFE eventually reach all of the target population, this would represent approximately 54% of all coffee farms and 80.1% of the total area of coffee in Honduras.

7. CONCLUSIONS

The Project design estimates that during the life of the Project approximately 3100 to 3200 small and medium-small coffee producers will be aided. This represents approximately 12% of the total target population of 26,420 farms. If it is assumed that these farms are proportionally distributed by size class as presented in Table 3, then approximately 9833 hectares in coffee will be reached by the Project. This represents 12.1% and 9.7% of the area in coffee for the target population and the national total, respectively. The expressed willingness of the Government of Honduras to continue providing credit to these same farmers and to gradually expand the Project to include additional small and medium-small producers augurs favorably for substantial and long-term spread effects within the target population.

The feasibility analysis supports the first two hypotheses:

1. That the provision of technical assistance by IHCAFE and of credit will result in an increase in the adoption of coffee production technologies, regardless of the size of the farm area in coffee.
2. That the Farm Gate Price per quintal oro will increase as a result of the adoption of the production technologies, regardless of the size of the farm area in coffee.

The confirmation of hypotheses 1 and 2 indicate the soundness of the project design to effect the adoption of appropriate production technologies on small and medium-small coffee farms through the provision of technical assistance and investment credit; and through the adoption of technology to effect an increase in both the absolute and relative incomes of the target population.

Both the absolute and relative income gains to the producer are, however, constrained by the structure of the marketing system as indicated by the lack of support for the third hypothesis. The income and income share received appears to be somewhat dependent on the state of the crop at the time of sale and on to whom the crop is sold. Based on the separate analysis of these factors, it was found that absolute and proportional income to the producer can be increased by increasing the crop processing capacity of the farm. Likewise, both absolute and relative income are increased when the crop is sold to cooperatives rather than to middlemen. Although these factors were not analyzed in combination, it seems reasonable to conclude that a coffee producer able to sell the crop in pergamino seco and to a cooperative would tend to receive the best price, and realize a greater share of the profits from his production than other producers selling in other combinations. The project design incorporates these concerns. The technical assistance and credit will include appropriately designed technology for at least one stage of processing before the crop is sold. Appropriately low-cost hand operated depulpers are currently imported and marketed for under \$500-\$600. Also, the USAID/Honduras Rural Technologies Project could be utilized to promote the local manufacture and distribution of the depulper, thus possibly reducing the cost of the technology to the coffee producer.

Project training and technical assistance will promote the development of producer cooperatives, and through this, improve their market position vis-a-vis the intermediaries. IHCAFE has already begun some work in this area through the organization of the smaller coffee producers and in organizing a system of beneficios for processing and marketing the crop.

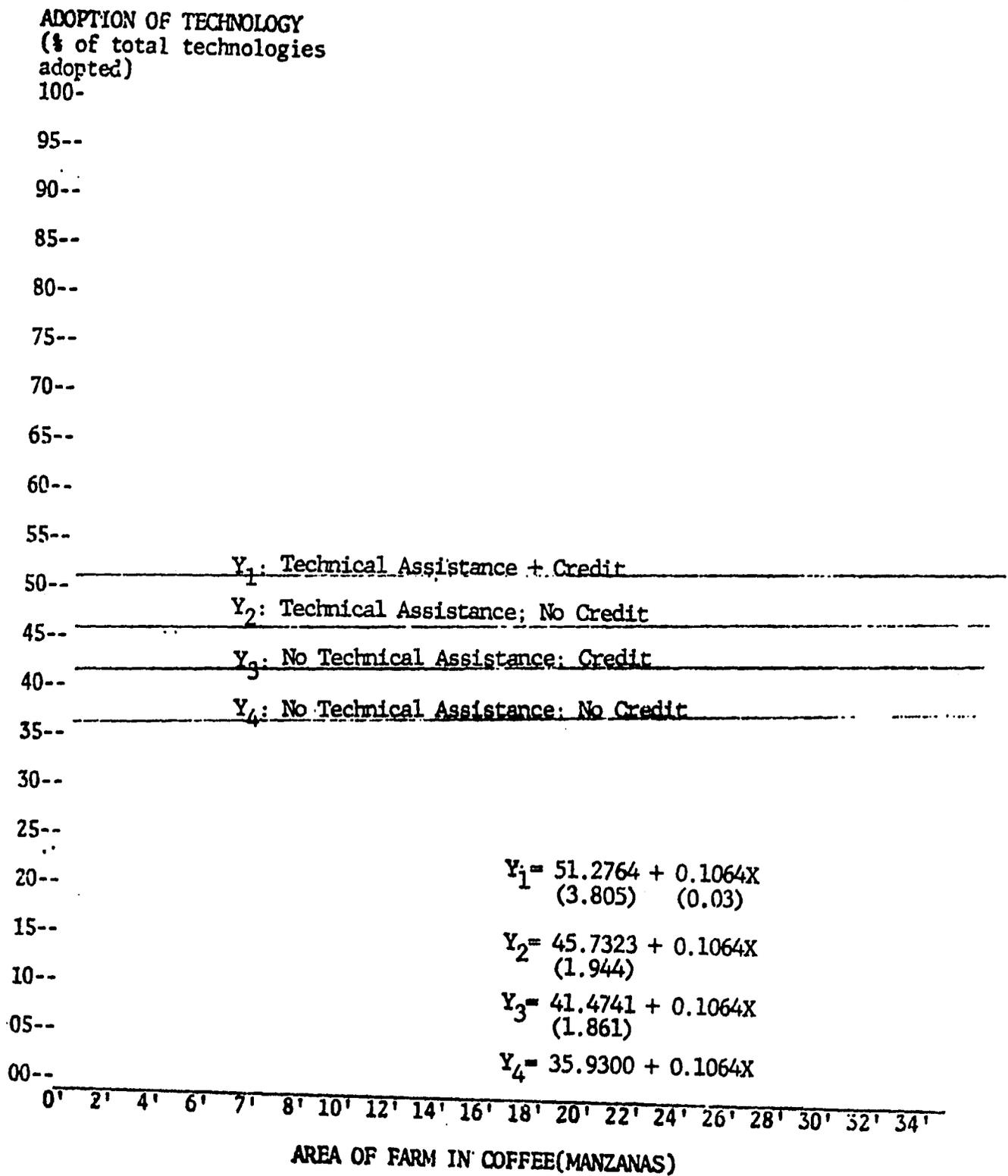
The description of small coffee farm characteristics leads to the conclusion that the project design has taken into account the relevant factors. The land tenure constraint is dealt with through the proposed credit arrangements. Target group farms have sufficient area in coffee to permit the introduction and use of proposed production technologies. Credit is provided through the project to small coffee farms which have heretofore had limited access, and technical assistance will be provided as well. The constraints posed by dependence on hired labor have been taken into account by the project design, which factors in labor as part of the cost of investment credit. The constraint posed by the low level of coffee farmer organization will be addressed by the technical assistance and training approach.

Small farmer characteristics are, similarly, not a constraint to the project strategy. Small coffee farmers are already risk-takers and, given the conditions under which project financed credit will be provided, they will be likely to take the further risk of long-term investment credit. A motivation to technify already exists and will be strengthened by the training component.

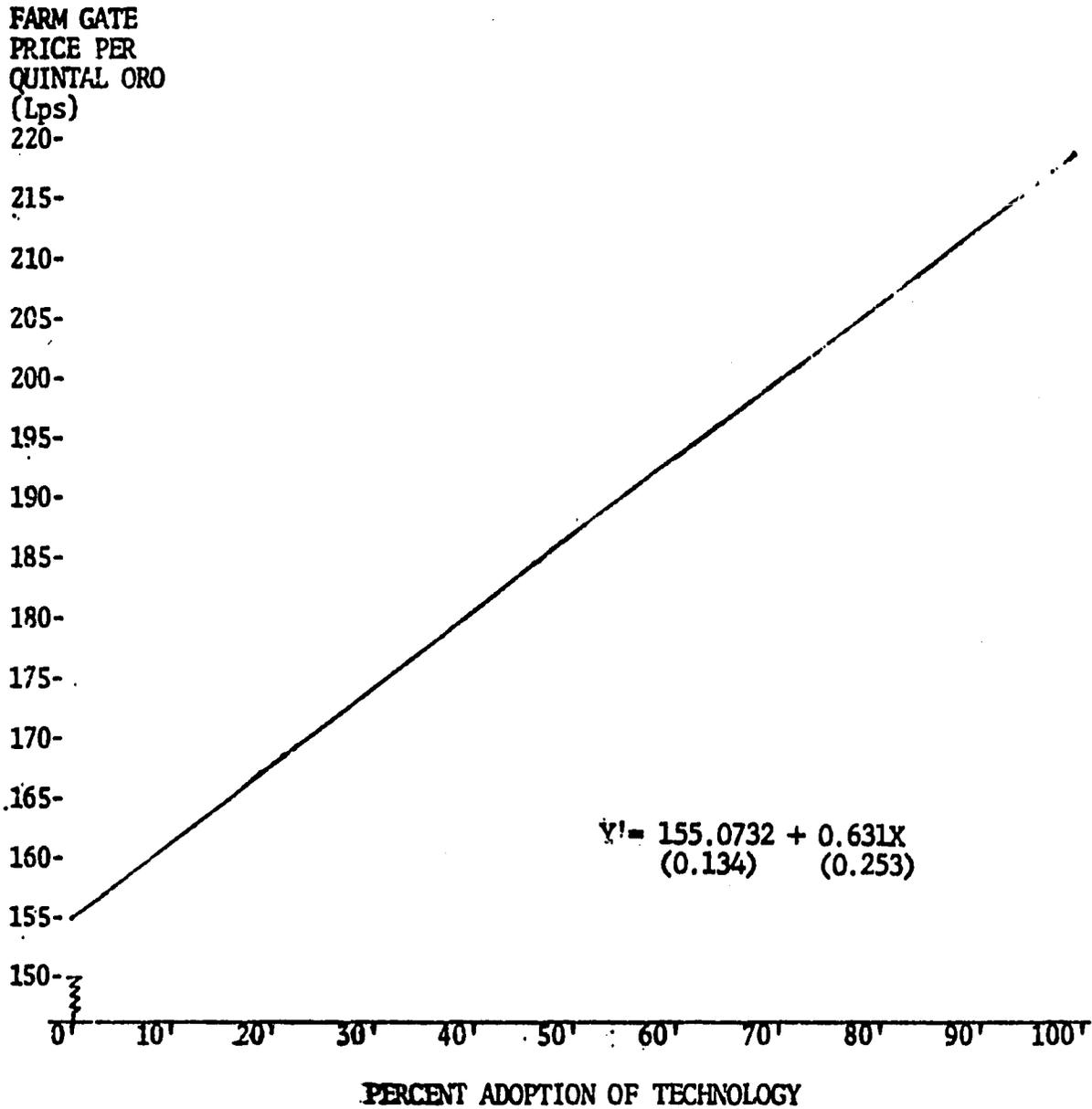
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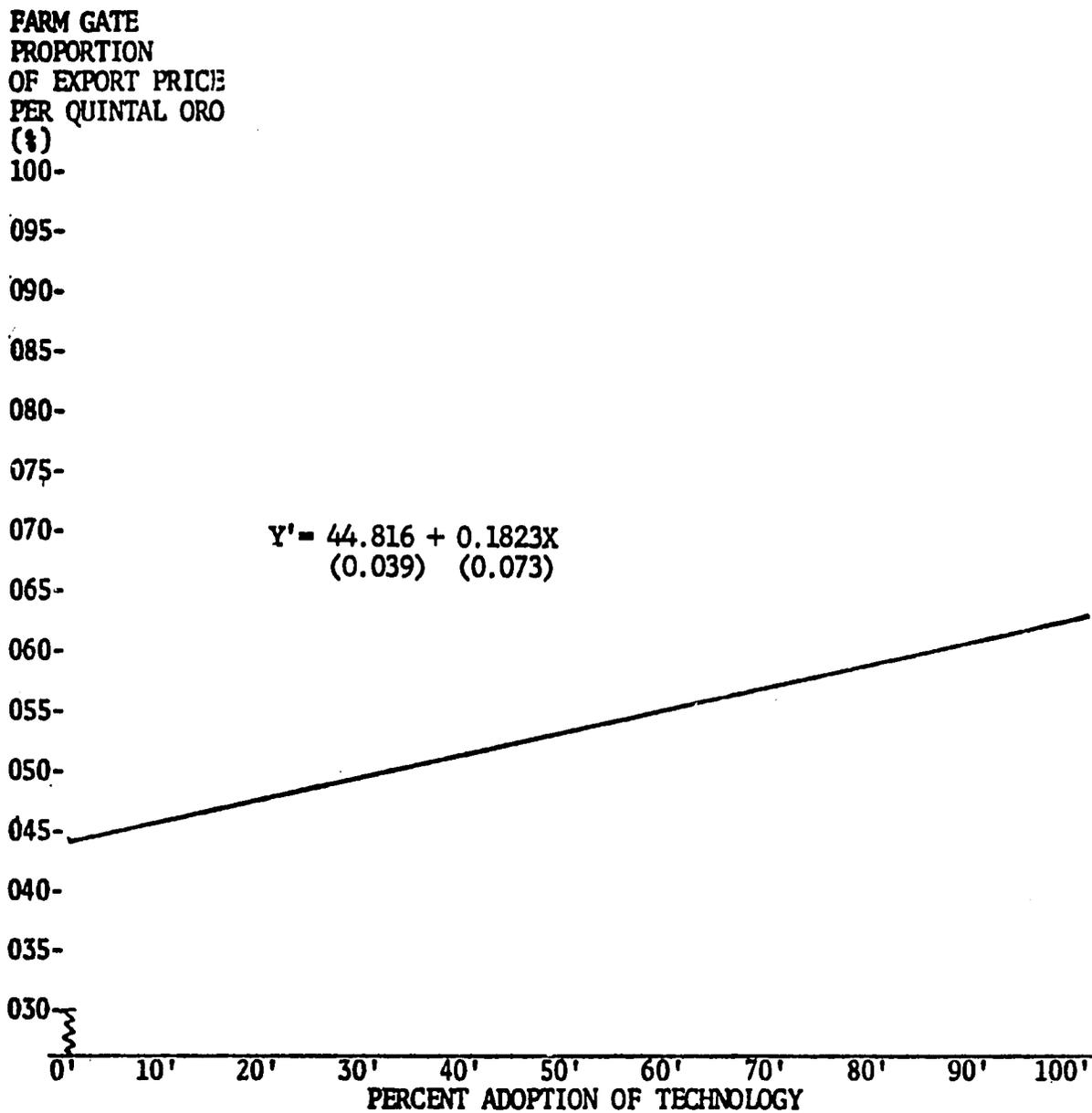
GRAPH 1
PLOT OF REGRESSION LINES FOR ADOPTION OF TECHNOLOGY
AND AREA IN COFFEE BY CATEGORIES OF TECHNICAL ASSISTANCE AND CREDIT



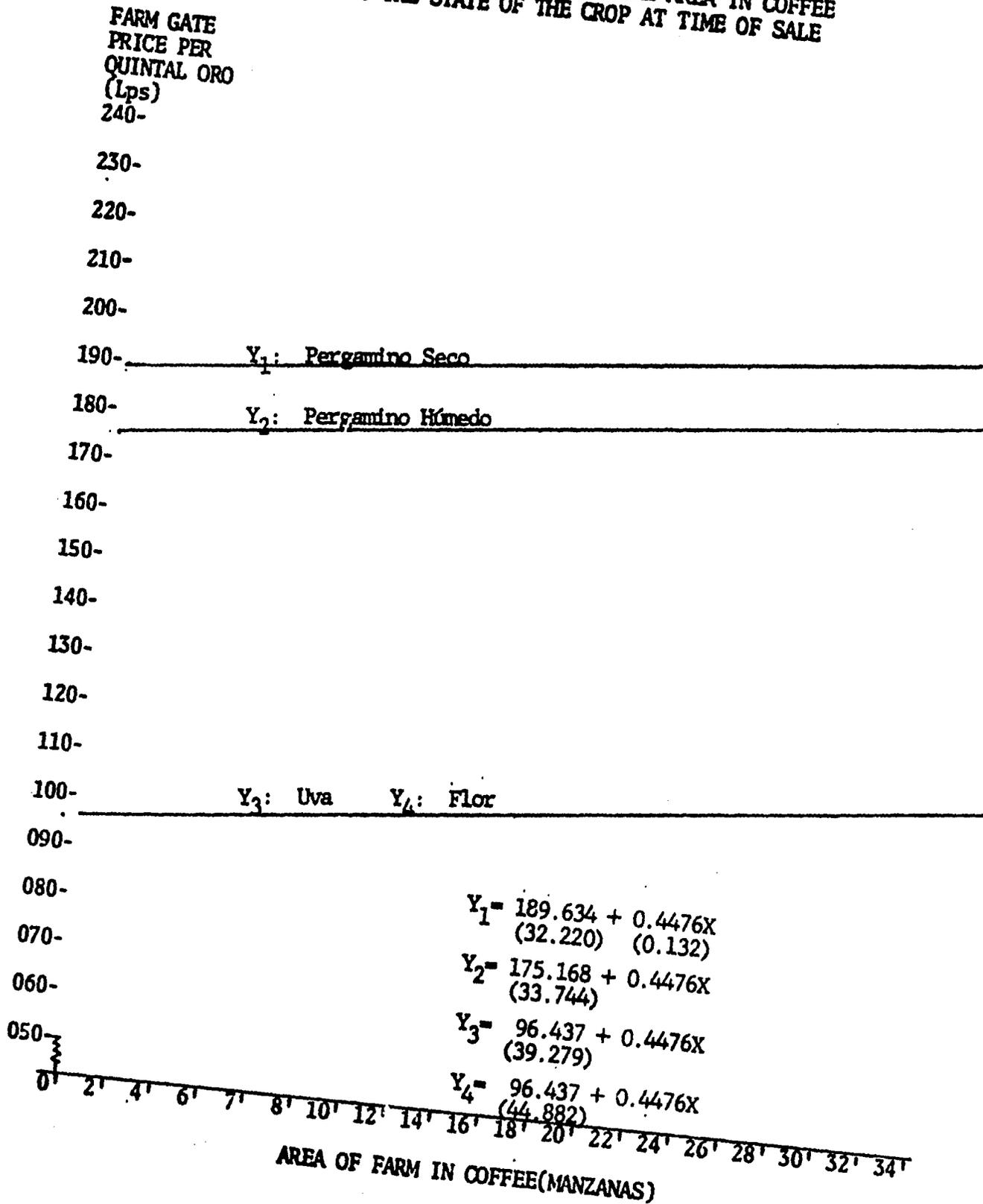
GRAPH 2
PLOT OF REGRESSION LINE OF THE RELATIONSHIP
BETWEEN THE ADOPTION OF TECHNOLOGY AND THE FARM GATE PRICE
ADJUSTED FOR THE AREA IN COFFEE



GRAPH 3
PLOT OF REGRESSION LINE OF THE RELATIONSHIP
BETWEEN THE ADOPTION OF TECHNOLOGY AND THE FARM GATE PROPORTION
OF THE EXPORT PRICE ADJUSTED FOR THE AREA IN COFFEE



GRAPH 4
PLOT OF REGRESSION LINES FOR
THE FARM GATE PRICE AND THE AREA IN COFFEE
BY THE STATE OF THE CROP AT TIME OF SALE



GRAPH 5
PLOT OF REGRESSION LINES FOR
THE FARM GATE PRICE AND THE AREA IN COFFEE BY
TYPE OF PURCHASER AT TIME OF SALE

FARM GATE
PRICE PER
QUINTAL ORO
(Lps)

250-

240-

230-

220-

210-

200-

190-

180-

170-

160-

150-

140-

130-

120-

110-

100-

090-

080-

070-

060-

050-

0' 2' 4' 6' 7' 8' 10' 12' 14' 16' 18' 20' 22' 24' 26' 28' 30' 32' 34'

Y_1 : Cooperative

Y_4 : Others

Y_2 : Intermediary(Town) (IFUEBLO)

Y_3 : Intermediary(Farm) (IFINCA)

$$Y_1 = 226.7615 - 0.1240X$$

(20.123) (0.550)

$$Y_2 = 164.2056 + 1.1043X$$

(17.977) (0.678)

$$Y_3 = 178.2355 + 0.2959X$$

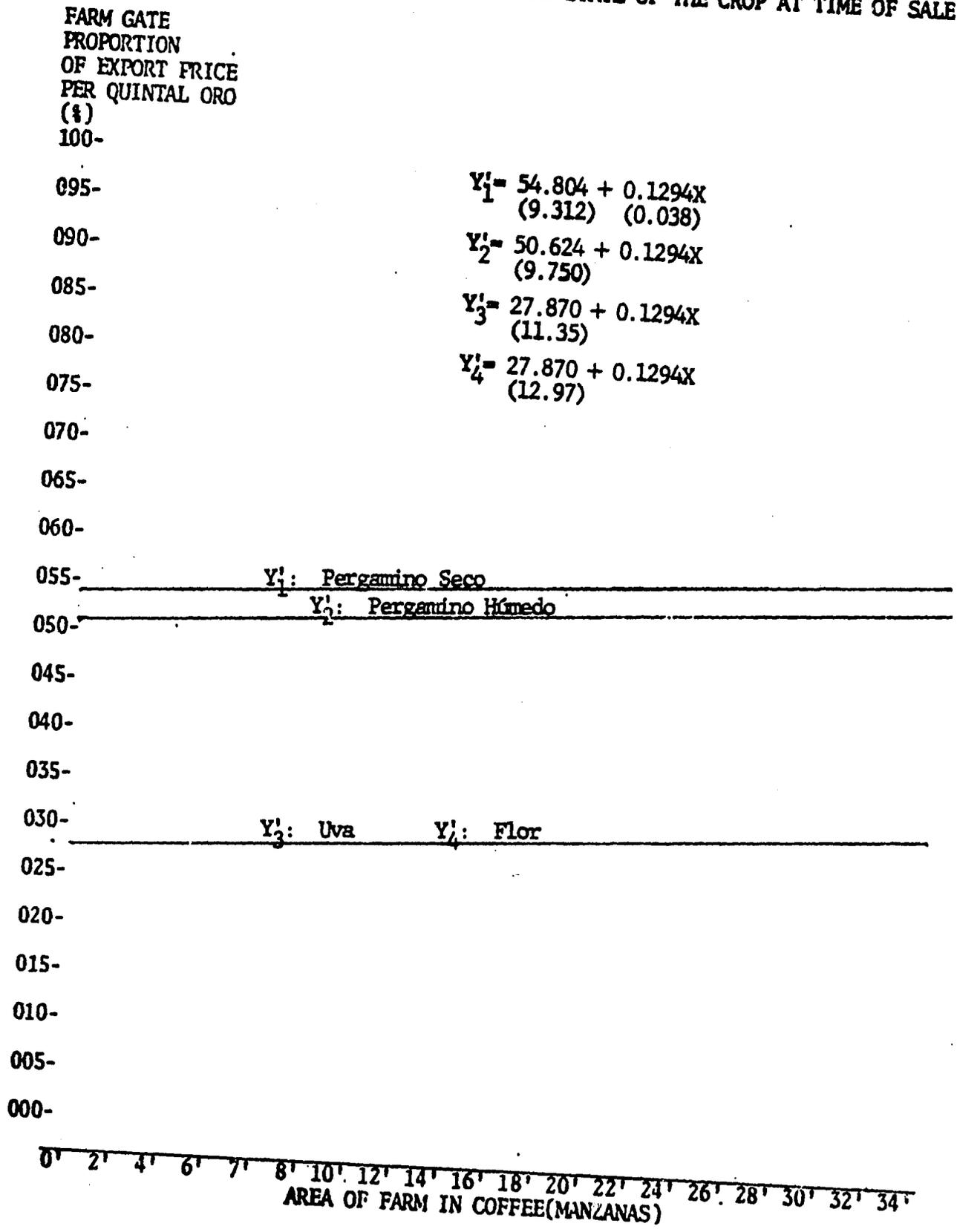
(19.723) (0.667)

$$Y_4 = 190.0168 + 0.4868X$$

(0.226)

AREA OF FARM IN COFFEE(MANZANAS)

GRAPH 6
PLOT OF REGRESSION LINES OF THE FARM GATE PROPORTION OF EXPORT PRICE
AND AREA OF THE FARM IN COFFEE BY THE STATE OF THE CROP AT TIME OF SALE



GRAPH 7
PLOT OF REGRESSION LINES OF THE FARM GATE PROPORTION OF EXPORT PRICE
AND AREA OF THE FARM IN COFFEE BY TYPE OF PURCHASER AT TIME OF SALE

FARM GATE
PROPORTION
OF EXPORT PRICE
PER QUINTAL ORO
(%)

100-
095-
090-
085-
080-
075-
070-
065-
060-
055-
050-
045-
040-
035-
030-
025-
020-
015-
010-
005-
000-

Y_1' : Cooperative

Y_4' : Other

Y_2' : IPUEBLO

Y_3' : IFINCA

$$Y_1' = 65.5341 - 0.0358X$$

(5.816) (0.159)

$$Y_2' = 47.4554 + 0.3191X$$

(5.195) (0.196)

$$Y_3' = 51.5101 + 0.0855X$$

(5.700) (0.193)

$$Y_4' = 54.9149 + 0.1407X$$

(0.065)

0' 2' 4' 6' 7' 8' 10' 12' 14' 16' 18' 20' 22' 24' 26' 28' 30' 32' 34'
AREA OF FARM IN COFFEE(MANZANAS)

INFORME

SOBRE UN POSIBLE PROGRAMA DE CREDITO PARA EL

MEJORAMIENTO DE CAFETALES DE PEQUEÑOS AGRICULTORES DE HONDURAS

PARA CONTRARESTAR EL PROBLEMA DE LA ROYA DEL CAFE

Preparado por

SERVICIOS TECNICOS DEL CARIBE

Tegucigalpa, D.C.

Marzo de 1981

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EL PROBLEMA DE LA ROYA DEL CAFE Y SUS CONSECUENCIAS
EN EL PEQUEÑO CAFICULTOR DE HONDURAS

En el caso de Honduras, donde no se ha generalizado un alto grado de tecnificación de cafetales, el problema de la Roya cobra importancia vital por su alto poder para reducir significativamente la producción nacional del grano y sus consecuencias en la economía general del país. La Roya podría reducir la producción en muchos casos a la mitad, y en otros acabar con la de muchos pequeños productores si no se toma las medidas adecuadas.

Los efectos de la Roya son más severos cuanto menos tecnificada esté la plantación de café. Por el momento, si se mantiene la plantación en un nivel alto de tecnificación, el problema de la Roya puede ser controlado aunque no erradicado, lo que presupone que el productor cafetalero hondureño tendrá que aprender a convivir con la Roya, mientras no surja una forma viable de erradicarla.

En Honduras el proceso de tecnificación o mejoramiento de los cafetales con miras a obtener más altos rendimientos y mejor productividad, ha sido responsabilidad mayormente del Instituto Hondureño del Café como organismo del Estado, habiendo obtenido diversos logros en el campo, especialmente con los medianos y grandes caficultores que generalmente son los más receptivos al cambio tecnológico y los que consiguen con menor dificultad los recursos financieros para atender las necesidades de la finca. Sin embargo, el grado de tecnificación alcanzado es considerado, por el propio Instituto, como un mejoramiento parcial (semitecnificado) de los cafetales hondureños. El siguiente cuadro ilustra brevemente la relación entre área mejorada (semitecnificada) y área no mejorada con los rendimientos promedios respectivos.

COMPARACION DE RESULTADOS EN FINCAS DE CAFE CON Y SIN TECNIFICACION

Sistema	Area Total de Café Mzs.	% del Total	Producción 1979-80 (miles qq.)	% del Total	Promedio Produc. por Mz. (1979-80) qq.	Tamaño Más Común de Fincas (Mzs.)	Numero de Agri- cultores
Semi- Tecni- ficado	60,000	34	713	46	12	15-20	1,350
No Tec- nificado	115,000	66	837	54	7	0-15	40,000-47,000
Totales	175,000	100	1,550	100	8.85	3.6	-

Fuente: (1) Estimación del Impacto Económico de la Roya del Cafeto en Honduras, Febrero de 1980.

(2) USAID/H - Project Identification Document.

-2-

La labor de tecnificación del IHCAFE en los cafetales del país no ha podido llegar aún a un número significativo de agricultores por falta de mayores recursos de la propia Institución, por la infraestructura de las áreas cafetaleras y por la estrechez económica de muchos caficultores, por lo que en el caso de aquellas áreas consideradas como mejoradas, el grado de tecnificación alcanzado esta todavía por debajo de los promedios normales de tecnología del café de otros países. El grado de mejoramiento alcanzado por el caficultor hondureño hasta el presente, y donde el Instituto ha tenido buena participación, se limita a la incorporación y adopción de algunas prácticas y no a la aplicación de todo un paquete tecnológico. De ahí que en el caso de las áreas semi-tecnificadas el rendimiento promedio de 12 qq. de café por manzana se considera muy bajo para la caficultura moderna. Los pequeños productores, por el contrario, que constituyen la mayoría de los caficultores, tiene ante sí un panorama distinto. Los rendimientos de 7 qq. por manzana son extremadamente bajos.

Las plantaciones de estos pequeños caficultores presentan las siguientes características o condiciones: variedad de café poco productiva, baja densidad de árboles, sombra excesiva, poco o ningún control de plagas y enfermedades, deficiente control de malezas, ninguna o insuficiente fertilización, ausencia de podas periódicas, poca o ninguna conservación del suelo. Ante esta situación, el pequeño caficultor esta indefenso ante un ataque severo de la Roya. Solamente un vigoroso programa de mejoramiento tecnológico es capaz de producir plantaciones sanas y vigorosas con rendimientos suficientes para resistir la inevitable reducción en rendimientos que produce la Roya y aún derivar un beneficio razonable.

RAZGOS IMPORTANTES DE UN PROGRAMA DE CREDITO PARA EL MEJORAMIENTO DE CAFETALES PARA PEQUEÑOS AGRICULTORES

El propósito del Programa de Mejoramiento de Cafetales es iniciar una estrategia de mejoramiento de cafetales de pequeños caficultores, para demostrar que aplicando un determinado paquete de tecnología, en armonía con otros elementos básicos como el crédito, puede contrarrestarse los ataques de la Roya del café e incluso transformar la unidad productora en una de rendimientos atractivos para el agricultor.

Para lograr este propósito, el Programa tendrá que contar con una organización ágil y efectiva capaz de impacta el pequeño agricultor hasta lograr el cambio tecnológico. El Programa debera incorporar los siguientes lineamientos principales:

- El crédito deberá ser suficiente en cantidad, llegar oportunamente al agricultor a través de una fuente confiable y los plazos para el pago de la deuda deberán estar en estrecha armonía con el flujo de ingresos que la plantación renovada genere

-3-

- deberá existir una estrecha sincronización entre el crédito y la asistencia técnica, siguiendo la modalidad del "crédito orientado"
- la asistencia técnica será el elemento determinante para el éxito del proyecto, por lo tanto, la efectividad con que esta se ofrezca deberá ser objeto de constante examen y evaluación
- la provisión de los insumos de producción deberá ser objeto de una programación cuidadosa asegurándose que éstos estén disponibles en lugares accesibles, en calidad, cantidad y precios adecuados, así como en las fechas oportunas. En ciertos casos el crédito podría ser en especie para asegurar el uso de ciertos insumos.
- la disponibilidad de arbolitos de café para las siembras en cantidad suficiente y a precios razonables cobra importancia capital en este proyecto y deberá ser objeto de cuidadosa programación por parte del IHCAFE.
- el personal que maneje el crédito y la asistencia técnica deberá estar debidamente adiestrado, capacitado y muy motivado
- en los casos donde el personal sea nuevo o carezca de la preparación adecuada, deberán ofrecerse cursos de capacitación, seminarios y otros adiestramientos para superar las deficiencias observadas
- las funciones del personal del Programa deberán ser bien conocidas y estar consignadas claramente en un Manual de Operaciones del Programa, evitándose la duplicación de funciones.
- será conveniente concentrar el esfuerzo del Programa en determinadas zonas seleccionadas y no dispersar en todo el territorio nacional donde se produce café. Para seleccionar las zonas se deben tomar en cuenta entre otros: la concentración del prototipo de agricultor que se beneficiará del Programa; la infraestructura y accesibilidad mínima que permita la adecuada movilización del personal del Programa y de los insumos que el agricultor necesitará transportar incluyendo sus cosechas; el grado de prioridad de las zonas en base a los parámetros de elegibilidad que se establezcan. Esto facilita un esfuerzo concentrado necesario para demostrar los méritos y la factibilidad técnica y económica de la renovación cafetalera.

VIABILIDAD ECONOMICA Y FINANCIERA DE POSIBLES ESQUEMAS DE RENOVACION
CAFETALERA PARA CONTRARESTAR LOS EFECTOS DE LA ROYA

Los Esquemas de Renovación Cafetalera

El IHCAFE ha diseñado varios esquemas de renovación cafetalera con el propósito de representar las situaciones que existen en el campo y el nivel de esfuerzo técnico y económico necesarios para lograr el mejoramiento adecuado de las plantaciones de café. Luego de examinar estos esquemas se recomienda, con el endoso del IHCAFE, adoptar dos esquemas, uno de renovación drástica y otro de renovación parcial.

La renovación drástica (esquema 1) contempla la eliminación total de la plantación de café existente y el establecimiento de una nueva plantación conteniendo aproximadamente 3,300 árboles de café por manzana.

La Renovación parcial (esquema 2) consiste en mejorar la plantación mediante la poda y la repoblación de árboles para alcanzar un número de árboles de café por manzana y rendimientos similares al esquema 1.

Como anexo a este informe se incluyen dos cuadros describiendo las prácticas agronómicas a realizarse, costos y rendimientos por manzana de café para cada uno de los dos esquemas propuestos.

**CUADRO 1: ESTIMADO DE INGRESOS Y GASTOS DE OPERACION POR MANZANA DE CAFE
A RENOVARSE**

<u>AÑOS</u>								
<u>ESQUEMA</u>	1	2	3	4	5	6	7	8
ESQUEMA 1								
PRODUCCION QQ.			15	35	45	45	40	40
Ingresos			2,145	5,005	6,727	6,727	6,240	6,240
Costos	3,294	1,380	2,000	2,807	3,251	3,420	3,320	3,665
Neto	(3,294)	(1,380)	145	2,198	3,476	3,307	2,920	2,575
ESQUEMA 2								
PRODUCCION QQ.		10	25	35	45	45	40	40
Ingresos		1,300	3,575	5,005	6,727	6,727	6,240	6,240
Costos	1,937	1,747	2,299	2,735	3,175	3,340	3,236	3,398
Netos	(1,937)	447	1,276	2,270	3,552	3,387	3,004	2,842

NOTA: Se consideró un aumento anual de 5% en los costos por efectos de inflación. El precio del café al productor se estimó en L. 130/qq. para el primer año y luego se incrementó en 10% (L. 143/qq.) en el tercer año, en 4,5% (L. 149/qq.) en el quinto año y en 4,3% (L. 156/qq.) en el séptimo año. En estos estimados de costos de operación no se incluye el costo de intereses de la inversión; esto se hace en el cuadro de capacidad de pago asumiendo que la inversión constituye un crédito al productor.

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Esquema 1 - Renovación Drástica

Rentabilidad

Este esquema requiere de una inversión de L 4,674 por manzana durante un período de dos años de establecimiento de la plantación durante los cuales no hay producción de café. En el tercer año IHCAFE estima una producción de 25 qq/manzana, aumentando a 35 qq en el cuarto año, a 45 qq en cada uno de los años quinto y sexto estabilizándose luego en 40 qq. Estos rendimientos proyectados son altos y sólo podrán lograrse por medio de un plan altamente tecnificado a nivel de finca.

Asumiendo un precio inicial de L 130.00 por quintal de café y aumentándolo en un 10% en el tercer año en 4.5% en el quinto y 4.3% en el séptimo, asociado con un aumento anual de un 5% en los costos por efectos de inflación, la inversión de los primeros dos años puede recobrase en un período de cinco años a partir del establecimiento inicial, sin tomar en consideración el gasto por el pago de intereses sobre la inversión. Aunque en el tercer año la cosecha a obtenerse permite cubrir los gastos, en realidad es en el cuarto año cuando comienza a haber un sobrante significativo para el agricultor. En ese año se estiman gastos de operación de L 2,807 por manzana e ingresos de L 5,005 lo que significa un sobrante de L 2,198 por manzana. Asumiendo que el pago de intereses sea de L 461 a razón de 14% anual por la totalidad de la inversión, la ganancia sería de L 2,346 que equivale al 83% sobre la inversión.

En base al precio estimado para ese año de L 143 por quintal de café, se requiere un rendimiento de 23 quintales por manzana para cubrir los gastos, incluyendo el pago de intereses. En años subsiguientes se requieren alrededor de 25 quintales para cubrir los gastos.

Aún después de deducir otros gastos tales como uso de algún equipo, uso de terreno, etc., que, de hecho no serían de mucha cuantía en el caso de pequeños productores, quedaría una ganancia significativa anual y una plantación de café con capacidad para producir ingresos por un número apreciable de años.

El cuadro 1 muestra la situación de gastos e ingresos anuales para los esquemas 1 y 2 sin considerar el gasto de intereses lo cual se hace en la próxima sección donde se analiza la capacidad de pago.

Capacidad de Pago

En la sección anterior quedo demostrado que la renovación de plantaciones de café es una operación rentable. Sin embargo, puede observarse que se requiere una inversión considerable por manzana que no está al alcance de los pequeños y medianos productores.

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Estos dos factores más el elemento de riesgo, siempre presente, constituyen una barrera formidable que impide la introducción y adopción del nuevo proceso productivo que tiene el potencial de incrementar los ingresos de los pequeños y medianos agricultores y contrarrestar los amenazantes elementos negativos de la Raza del Café.

Lo anterior significa que la inversión a hacerse para la renovación de las plantaciones deberá ser mediante la obtención de créditos por parte de los productores bajo términos y condiciones que guarden relación con los requerimientos del esquema de renovación bajo consideración y la condición económica de los usuarios del crédito.

El cuadro 2 resume la situación proyectada por manzana de café renovada, para efectos de capacidad de pago para cada uno de los dos esquemas. Se asume que: (a) el 100% de la inversión por manzana será financiada mediante crédito; (b) el 100% de los ingresos generados serán aplicados para el pago de principal e intereses tomando en cuenta tanto la deuda inicial (crédito de refacción) así como del crédito de producción (avío) hasta que se haya saldado el 100% del crédito de refacción; (c) como colorario de lo anterior no se estima aportación de parte del productor de otros ingresos que el produzca, para cubrir intereses o hacer amortizaciones al capital por concepto de este crédito. Quiere decir así mismo que el no recibirá ningún beneficio económico durante los años en que esta pagando el crédito de refacción. Naturalmente que en muchos casos en que el productor o miembros de su familia trabajan en las labores de campo recibirán el beneficio del pago por la mano de obra aportada, por cuanto este gasto se ha incluido en el monto del crédito a otorgarse.

Los resultados más sobresalientes mostrados en el cuadro 2 son los siguientes:

- 1.- Aunque en el tercer y cuarto año se estiman producciones de café de 15 y 35 quintales por manzana y se generan ingresos de Lps. 2,145 y Lps. 5,005, respectivamente, no es hasta el quinto año que comienza a hacerse amortizaciones a la deuda por el crédito de refacción utilizado durante los dos primeros años. El pago de los intereses acumulados se realiza en el cuarto y quinto año y la deuda acumulada se cancela en tres años a partir del quinto año y terminando en el séptimo. La dilatación en el comienzo del pago de la deuda refaccionaria se debe a que se da preferencia al pago de los créditos anuales de producción (avío) e intereses tanto de este crédito como de los intereses acumulados. Los intereses se calculan al 14% anual.

En el séptimo año se produce, por primera vez, un sobrante neto al productor de Lps. 1,678 por manzana. De ahí en adelante el productor sólo paga el crédito de producción y los intereses correspondientes por lo que los ingresos por manzana son apreciables, alrededor de Lps. 2,000, asumiendo naturalmente que se materialice la estructura de costos y precios del café estimada.

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CUADRO 2 ESTIMADO DE LA CAPACIDAD DE PAGO PARA LA RENOVACION DE UNA MANZANA
DE CAFE, FINANCIANDO EL 100% DE LA INVERSION

- ESQUEMA 1-

AÑO	INGRESO DE COSECHA		APLICACION DEL INGRESO A:						SALDO			
	OO	VALOR	CREDITO DE REFACCION			CREDITO DE AVIO			CREDITO DE REFACCION		CREDITO DE AVIO	
			CAPITAL	INTERESES	TOTAL	CAPITAL	INTERESES	TOTAL	CAPITAL	INTERESES	CAPITAL	INTERESES
<u>Renovación</u>												
1	-	-	-	-	-	-	-	-	3,294	461	-	-
2	-	-	-	-	-	-	-	-	4,674	1,115	-	-
<u>Producción</u>												
3	15	2,145	-	-	-	1,865	280	2,145	4,674	1,769	135	-
4	35	5,005	-	1,651	1,651	2,942	412	3,354	4,674	772	-	-
5	45	6,727	1,595	1,426	3,021	3,251	455	3,706	3,079	-	-	-
6	45	6,727	2,397	431	2,828	3,420	479	3,899	682	-	-	-
7	40	6,240	682	95	777	3,320	465	3,785	1,678 C.R.	-	-	-

- 2.- Es necesario un período de gracia para el pago del préstamo de refacción de tres años para intereses y de cuatro años para capital. La alternativa de adelantar las amortizaciones depende de que el productor aporte un porcentaje de la inversión inicial requerida. El cuadro 3 muestra el efecto de financiar solamente el 80% de la inversión inicial y de las necesidades anuales para crédito de producción. En este caso la deuda acumulada al iniciarse el tercer año - primer año de producción - es de Lps. 4,631 (Lps. 3,739 capital y Lps. 892 intereses) que es Lps. 1,158 menor que la deuda (Lps. 5,789) si se financía el 100% de la inversión. El período de gracia sería de dos años para empezar a pagar intereses y tres para capital. En el quinto año se produce un sobrante para el productor mientras que esto ocurre en el séptimo año cuando se financía el 100%.

Es muy posible que un gran número de los pequeños agricultores de café no puedan aportar el 20% tanto de la inversión inicial como de los gastos anuales de producción.

El cuadro 4 muestra el efecto de financiarle el 100% de la inversión inicial y el 80% de los gastos anuales cuando comienza a haber producción. En este caso, el productor obtiene un sobrante apreciable para su uso en el sexto año, o sea, un año antes de lo que tendría que esperar si financía el 100% (cuadro 2). La alternativa de financiar el 100% de la inversión y el 80% de los gastos de operación es altamente recomendable para los pequeños productores. En cada caso, sin embargo, siempre deberá analizarse la capacidad de pago del agricultor y el monto a prestarse deberá estar en estricta función de esta capacidad de pago.

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CUADRO 3 ESTIMADO DE LA CAPACIDAD DE PAGO EN LA RENOVACION DE UNA
MANZANA DE CAFE FINANCIANDO EL 80% DE LA INVERSION

- ESQUEMA 1 -

AÑO	Ingreso de Cosecha		APLICACION DEL INGRESO A:						SALDO			
			Crédito de Refacción			Crédito de Avío			Crédito de Refacción		Crédito Avío	
			gg	Valor	Capital	Intereses	Total	Capital	Intereses	Total	Capital	Intereses
RENOVACION												
1	-	-	-	-	-	-	-	-	2,635	369	-	-
2	-	-	-	-	-	-	-	-	3,739	892	-	-
PRODUCCION												
3	15	2,145	-	321	321	1,600	224	1,824	3,739	1,094	-	-
4	35	5,005	827	1,617	2,445	2,246	314	2,560	2,912	-	-	-
5	45	6,727	2,912	408	3,320	2,600	364	2,964	443 CR	-	-	-

Esquema 2 - Renovación Parcial

Rentabilidad

Este esquema solamente requiere una inversión de Lps. 1,937 por manzana durante el primer año. Durante el segundo año se estima una producción de 10 quintales por manzana, aumentando a 25 en el tercero. Comenzando en el cuarto año se estima que las producciones igualan las estimadas en el esquema No. 1. La inversión del primer año se recobra en un período de dos años, tercero y cuarto, sin tomar en consideración el pago de intereses sobre la inversión. La primera cosecha que se obtiene en el segundo año, no alcanza para pagar el crédito de avío de ese año, según puede observarse en el cuadro 5 que presenta la capacidad de pago de este esquema.

En el tercer año se produce un sobrante significativo. En ese año se estiman gastos de operación de Lps. 2,299 e ingresos de Lps. 3,575 para un sobrante de Lps. 1,276 por manzana según se observó en el cuadro 1. Asumiendo un pago de intereses de Lps. 271 por el crédito de producción, el beneficio neto al productor sería de Lps. 1,666 por manzana, que aumentará en años sucesivos para igualarse al esquema 1. En el tercer año se requiere una producción de 18 quintales para cubrir los gastos de producción más intereses. En años sucesivos se requieren alrededor de 25 quintales para cubrir gastos.

Capacidad de Pago

Dado el caso de que la inversión inicial es solo por un año y por una cuantía mucho menor que en el esquema No. 1, la capacidad de pago es mucho más atractiva, naturalmente. Solamente se requiere un período de gracia de dos años tanto para capital como para el pago de intereses asumiendo que se financie el 100% de la inversión inicial y de los gastos anuales de producción. El capital y los intereses se pagan en los años tercero y cuarto adelantándose un año el inicio del pago de intereses y dos años el inicio de amortizaciones al capital amparado con el esquema No. 1 (Cuadro 2). La cancelación total de la deuda se logra en el año cuarto comparado con el año séptimo en el esquema No. 1.

Consideraciones sobre los Esquemas

- 1.- Es obvio que el esquema No. 2 es mucho más atractivo, en igualdad de condiciones. Pero precisamente ahí está la clave. No todos los pequeños productores elegibles para participar en el proyecto tienen sus plantaciones de café en condición de permitirles acogerse a este esquema. Es posible que en muchos casos los mejores predios de café que tienen estos productores clasifiquen para el esquema No. 2 en cuyo caso el agricultor estaría sometiendo su mejor plantación, a un proceso de renovación parcial que puede deteriorar temporalmente su situación económica. En este caso el agricultor tendría que acogerse al esquema No. 1 sometiendo a renovación drástica la plantación de café que está realmente en malas condiciones.

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- 2.- Lo anterior implica que será necesario una efectiva labor de promoción y motivación para que los pequeños productores de escasos recursos económicos participen en el esquema sabiendo que no obtendrán ingresos para su uso hasta el año séptimo. Si la Roya ataca severamente, la plantación puede quedar destruída y este es un poderoso argumento para motivar a estos productores para que inicien el proceso de renovación de plantaciones de café.
- 3.- Debido a que las amortizaciones a capital e intereses de la deuda refaccionaria dependerán exclusivamente de que se produzcan sobrantes anuales durante los años de producción comercial es fundamental que: (a) haya una seguridad absoluta de financiamiento para crédito de producción en los montos necesarios y en forma oportuna y (b) establecer un estricto control de la cosecha a obtenerse para asegurar que su valor se aplique íntegramente al pago tanto del crédito de avío como a la deuda refaccionaria acumulada. Ello quiere decir que la institución que otorgue el crédito de refacción deber ser la misma que provea el crédito de producción, por lo menos hasta que la deuda sea cancelada. Si fueran dos fuentes separadas tendría que existir un acuerdo escrito muy formal entre las dos instituciones estableciendo la forma en que se aplicarán los fondos y la forma en que se tendrá control sobre la cosecha. De lo contrario existe el grave y real riesgo de que la deuda refaccionaria caiga en mora o no llegue a cobrarse nunca, particularmente porque la única garantía son las cosechas futuras por obtenerse y estas estarán gravadas con el crédito de producción.

Aquí se plantea otro aspecto muy importante y es el siguiente: como los participantes en el proyecto poseen otras plantaciones de café no afectadas por el proyecto, es de suponerse que muchos productores ya tienen una fuente de financiamiento, ya sea institucional o informal que también está gravando la cosecha. Podría darse el caso de un productor tener tres fuentes diferentes de financiamiento para su producción de café con todas las complejidades del caso. Esto señala aun más la vital importancia que una efectiva motivación, organización, supervisión y control de campo tiene para el éxito de este proyecto.

La asistencia técnica agronómica, el crédito y la comercialización del café deberán estar íntimamente entrelazados.

CUADRO 5 ESTIMADO DE LA CAPACIDAD DE PAGO DE RENOVACION DE UNA MANZANA DE CAFE
FINANCIANDO EL 100% DE LA INVERSION

- ESQUEMA 2 -

ANO	INGRESO DE COSECHA		APLICACION DEL INGRESO A:						SALDO			
	qq	Valor	Crédito de Refacción			Crédito de Avío			Crédito de Refacción		Crédito Avío	
			Capital	Intereses	Total	Capital	Intereses	Total	Capital	Intereses	Capital	Intereses
1		RENOVACION	-	-	-	-	-	-	1,937	271	-	-
2	10	1,300	-	-	-	1,055	245	1,300	1,937	542	692	-
3	25	3,575	44	910	954	2,299	322	2,621	1,155	-	-	-
4	35	5,005	1,155	162	1,317	2,735	383	3,118	570 C.R.	-	-	-

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CUADRO 6 NECESIDADES ANUALES DE CREDITO DE PRODUCCION

POR MANZANA DE CAFE

- LEMPIRAS -

AÑO	<u>ESQUEMA 1</u>		<u>ESQUEMA 2</u>
	<u>100%</u> <u>del Gasto</u>	<u>80%</u> <u>del Gasto</u>	<u>100% del Gasto</u>
1	-	-	-
2	-	-	1,747
3	2,000	1,600	2,299
4	2,807	2,246	2,735
5	3,251	2,600	3,175
6	3,240	2,592	3,340
7	3,320	2,656	3,236

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Asumiendo recursos del préstamo de L 16,000.000.00 para créditos se podrían renovar 6,326 manzanas de café durante el período de desembolsos que se estima en tres años tomando en cuenta la labor de motivación, programación y promoción que será necesario realizar entre los pequeños productores. La distribución 40-60 es tentativa por cuanto no es posible estimar con certeza la preferencia o la capacidad de los pequeños agricultores de participar en uno u otro esquema.

El número de manzanas que se incorporara anualmente al proyecto se presenta a continuación, también en forma tentativa.

<u>ANO</u>	<u>ESQUEMA 1</u>	<u>ESQUEMA 2</u>	<u>TOTAL</u>
1	600	1,400	2,000
2	770	2,000	2,770
3	-	1,556	1,556
TOTAL	1,370	4,956	6,326

Necesidades de Crédito de Producción (Avío)

En el análisis de capacidad de pago se incluyen las necesidades de crédito de producción para establecer la capacidad de pago de la deuda refaccionaria. En el cuadro 6 se resume las necesidades específicas del crédito de producción para cada uno de los esquemas propuestos durante los años en que se estará pagando la deuda refaccionaria.

En el esquema 1 cada manzana de café estará 2 años recibiendo crédito y un año en el esquema 2.

Debido a la complejidad inicial del proyecto de renovación de plantaciones se recomienda que el área a renovarse por agricultor no sea muy reducida de manera que los recursos técnicos de que dispone el IHCAFE no se vean obligados a diluirse a tal extremo que se ponga en peligro la capacidad de ofrecer una efectiva labor de promoción, motivación y sobre de asistencia técnica que es vital para el éxito del proyecto en su fase inicial. A tal efecto se recomienda establecer en dos manzanas el área a renovarse por agricultor. El agricultor y los técnicos del IHCAFE acordarán sobre el terreno cual de los dos esquemas de renovación se aplicará en cada caso.

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En base a este criterio se beneficiarían 3,163 pequeños productores de café distribuidos en 685 en el esquema 1 y 2,478 en el esquema 2. Tanto el número total de manzanas como de agricultores que se beneficiarán será mayor que estas cifras debido a que las recuperaciones de los créditos que comenzarán a recibirse en el tercer año (o finales del segundo) se podrán destinar para incorporar nuevos agricultores al proceso de renovación de plantaciones.

DESEMBOLSOS Y RECUPERACIONES DE LOS FONDOS PARA CREDITO

El Cuadro 7 muestra la forma en que se desembolsaran los fondos para crédito y la forma en que retornarían por vía de las recuperaciones. Se puede estimar que el 30% se desembolsará durante el primer año, 45% en el segundo y 25% en el tercero.

Comenzando en el tercer año (finales del año) se empezará a tener las primeras recuperaciones de los créditos otorgados bajo el esquema 2; bajo el esquema 1 las recuperaciones comienzan en el año cuarto o quinto. En el tercer año vencen L 3,878,000. Los L 16,000,000 vencen a razón de un 24% en el tercer año, 39% en el cuarto, 27% en el quinto y 10% en el sexto.

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**CUADRO 7 - DESEMBOLSOS Y RECUPERACIONES DE LOS FONDOS PRESTADOS
PARA LA RENOVACION DE PLANTACIONES DE CAFE FINANCIANDO EL 100%
DE LA INVERSION EN RENOVACION Y DESTINANDO EL 40% DE LOS FONDOS
DE PRESTAMO PARA EL ESQUEMA 1 EL 60% PARA EL ESQUEMA 2**

AÑO	D E S E M B O L S O S						RECUPERACIONES (L 000)
	Esquema 1		Esquema 2		Total Manzanas	Valor (L 000)	
	Manzanas	Valor (L 000)	Manzanas	Valor (L 000)			
1	600	1,976	1,400	2,711	2,000	4,687	-
2	1,370	3,364	2,000	3,874	3,370	7,238	-
3	770	1,062	1,556	3,013	2,326	4,075	3,878
4	-	-	-	-	-	-	6,194
5	-	-	-	-	-	-	4,321
6	-	-	-	-	-	-	1,607
TOTALES	-	6,402	-	9,598	-	16,000	16,000

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Las recuperaciones reales no serán igual a las cantidades vencidas porque debe esperarse un porcentaje de mora que no es necesariamente una pérdida. La mora reducirá el monto del efectivo disponible para nuevos créditos. Para atender la posible pérdida por saldos no recuperables se recomienda establecer una reserva para cuentas incobrables para lo cual se propone utilizar parte de los ingresos por el pago de intereses sobre los créditos. Esto se trata más adelante.

El Cuadro 8 muestra una estimación de los fondos a recuperarse comenzando en el cuarto año basado en una recuperación de un 85%, o sea una mora de un 15%. Dada la supervisión y asistencia técnica contemplada en el Programa, debe esperarse que buena parte de los saldos morosos sean recuperados posteriormente.

CUADRO 8 - CANTIDADES A VENCER Y RECUPERACIONES EN LEMPIRAS

AÑO	MONTO A VENCER ACUMULADO	15% Mora ACUMULADO	RECUPERACION	
			Anual	Acumulada
TERCERO	3,878	595.2	3,282.8	3,282.8
CUARTO	10,072	1,510.8	5,278.4	8,561.2
QUINTO	14,393	2,158.9	3,672.9	12,234.1
SEXTO	16,000	2,400.0	1,365.9	13,600.0

ORGANIZACION INSTITUCIONAL DISPONIBLE PARA EL OTORGAMIENTO
DE LOS CREDITOS Y LA ASISTENCIA TECNICA

El Instituto Hondureño del Café (IHCAFE)

El IHCAFE es un organismo semi-autónomo muy interesado en la búsqueda de formas de mejorar el sector cafetalero de Honduras. En los últimos años ha estado trabajando, con éxito, en el diseño e implementación de un programa de investigación y extensión cafetalera. Su personal tanto de planta como de campo está catalogado como competente y plenamente identificado con los problemas a los distintos niveles del sector cafetalero. Como organismo gestor del quehacer cafetalero, es el que negocia la cuota de café hondureño bajo el Acuerdo Internacional del Café y además distribuye los permisos de exportación del grano.

Ha demostrado habilidad y capacidad para establecer y mantener buen equilibrio entre los subsectores que bregan con el café compuesto por los productores, beneficiadores - torrefactores y exportadores del grano. La imagen que se ha producido sobre el IHCAFE por parte de los diferentes subsectores, demuestra ser la de un organismo de respeto, ágil y dinámico, que se preocupa por su gente y hace el máximo de esfuerzo por servir eficientemente a su clientela.

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En su empeño por facilitar el financiamiento institucional a productores que no reúnen los requisitos de "sujetos de crédito" ante organismos prestamistas del país, (falta de títulos de propiedad, etc.) ha ofrecido frecuentemente su aval y se ha comprometido bajo acuerdos escritos con esos organismos, a ofrecer asistencia técnica a los caficultores y participar en funciones de crédito. En 1977 el IHCAFE creó la Unidad Técnica Crediticia, dependiendo directamente de la Gerencia del Instituto. Sus funciones son apoyar financieramente al caficultor mediante la generación, coordinación, vigilancia y recuperación del crédito directo e indirecto que le permitan disponer de los recursos necesarios para desarrollar en forma adecuada el cultivo del grano. Con este propósito se han concedido préstamos en fertilizantes, para construcción, ampliación y mejoramiento y funcionalidad de beneficios propiedad de cooperativas. También se han otorgado fianzas mercantiles a caficultores para obtener créditos en la banca oficial y en la banca privada y se han dado garantías a diversos bancos para responder solidariamente por obligaciones contraídas por cooperativas del sector. En los últimos 2-3 años el IHCAFE ha venido participando en programas de financiamiento de cafetales que además del crédito llevan el elemento de asistencia técnica. Los créditos bajo estos programas son otorgados por la banca privada del país y por BANADESA (Banco Nacional de Desarrollo Agrícola) utilizando fondos provenientes de líneas de redescuento otorgadas anualmente por el Banco Central.

Para darle acceso a los pequeños productores, el IHCAFE ha entrado en un acuerdo con el BANADESA mediante el cual BANADESA hace préstamos a caficultores a quienes el IHCAFE ofrece asistencia técnica y está dispuesto a conceder avales en casos necesarios.

En adición, el IHCAFE también en conjunción con el BANADESA, auspicia un programa de crédito conocido como Programa de Repoblación y Rehabilitación de Fincas de Café, que entró en vigencia el 1 de septiembre de 1979, donde BANADESA administra los fondos (otorga el crédito, etc.) y el IHCAFE ofrece la asistencia técnica al productor. IHCAFE provee los fondos para crédito al BANADESA mediante un préstamo al 6% de interés anual y el BANADESA los presta al 12% anual más 2% de comisión que se deposita a nombre del IHCAFE por el aval concedido. La selección de los clientes está a cargo del IHCAFE y este a su vez avala todos los créditos del Programa. Los créditos son de corto y mediano plazo (hasta 5 años con 3 años de gracia) y el IHCAFE no puede exigir al BANADESA el pago del préstamo del IHCAFE mientras no se paguen los préstamos concedidos por el BANADESA a los caficultores. Mediante este Acuerdo el IHCAFE ha facilitado fondos al BANADESA por L 2.8 millones que están colocados en créditos.

En la actualidad, el Instituto cubre alrededor de 40-50 mil manzanas de café donde está ofreciendo servicios de extensión en general que incluye la asistencia técnica acordada en los diferentes programas de crédito con otros organismos del país.

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Para llevar a cabo esta labor de campo y demás compromisos (funciones de crédito, investigación, etc.) el Instituto cuenta actualmente con 77 extensionistas distribuidos en 55 agencias que responden a 9 Oficinas Regionales según se ilustra en el organigrama y el mapa incluidos al final de esta sección. En cada agencia radica por lo menos un extensionista. Generalmente son peritos agrónomos de nivel medio que han adquirido experiencia en el conjunto de prácticas agronómicas relacionadas con café (preparación de viveros, uso de fertilizantes, plaguicidas, etc.) y además muchos de ellos tienen también experiencia en el proceso de concesión y administración de pequeños créditos cafetaleros. En cada Oficina Regional los trabajos se conducen bajo la dirección de un Jefe Regional, que normalmente es un Ingeniero Agrónomo. Este cuenta con algún personal auxiliar además de su cuerpo de extensionistas distribuido en las agencias.

La estructura y organización actual del Instituto del Café y sus funciones y esfuerzos que realiza en beneficio de la caficultura indican que es el organismo más indicado para asumir el principal papel en una estrategia de mejoramiento y rehabilitación de cafetales. Sin embargo, cualquier compromiso adicional del IHCAFE que represente más trabajo en el campo, requerirá aumentar sus recursos técnicos y presupuestarios.

La Federación Hondureña de Cooperativas Cafetaleras (FEHCOCAL)

Esta Federación fue organizada el 3 de septiembre de 1969, siendo uno de los objetivos de su creación procurar un mejor precio del café para los agricultores. Las funciones principales son: adquisición, comercialización e industrialización, dentro del mercado nacional o internacional, de todo el café que posean las cooperativas afiliadas, para lo cual se ha envuelto en operaciones de clasificación, empaque, transporte, almacenaje, propaganda, venta y distribución del producto. Además, sirve de mecanismo o recurso para gestionar y hacer llegar a sus cooperativas afiliadas un conjunto variado de servicios como: consecución de insumos (semillas, abonos, plaguicidas, etc.), ofrecimiento de alguna asistencia técnica (especialmente en lo relacionado con la comercialización) y obtención de financiamiento.

Desde su creación en 1969 hasta el año 1978, la Federación había promovido un total de 26 cooperativas con una membresía total de 5,908 socios, los cuales en su mayoría son pequeños caficultores con extensiones de menos de 5 hectáreas de café.

Hasta hace 3-4 años, la Federación había venido experimentando períodos de crecimiento y mejoramiento en sus operaciones generales. Los servicios que ofrecía con mayor intensidad a sus cooperativas afiliadas consistían mayormente en la consecución de financiamiento (ya fuera con parte de sus propios recursos o tomados de otras fuentes), el ofrecimiento de alguna asistencia técnica (especialmente para comercialización) y la venta de insumos para la producción. Los beneficios obtenidos en esas operaciones, más los obtenidos en la exportación del café, regresaban en parte a las cooperativas afiliadas, principalmente en forma de servicios. En su papel de exportador de

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café, la Federación ha llegado a ocupar hasta el segundo lugar con un 23.4% (1974-75) del volumen total de café exportado. Aunque parece que la situación de la Federación nunca ha sido una de bonanza, ha tenido períodos operativos cuyos resultados entusiasmaron a sus directivos y administradores, lo que hizo que la Federación se involucrara en operaciones y compromisos más complejos y de mayor riesgo económico.

En los últimos años la situación económica de la Federación se ha deteriorado. La Federación contrato préstamos con diversos bancos del país para poder continuar operando, pero la baja del precio del café ligada a una aparente deficiente administración, han creado una situación muy comprometida.

El Gobierno, por conducto del IHCAFE, ha asumido una deuda vencida de la FEHCOCAL de más de L 20 millones (cifras del IHCAFE) que contrajo con varios bancos privados del país y que de no pagarse a tiempo hubiese tenido repercusiones muy negativas aun a nivel internacional.

La situación actual de la FEHCOCAL es muy lamentable y negativa para el pequeño productor. La producción y comercialización de café es uno de los rubros que mejor se adapta para un eficaz programa a base de cooperativas y federaciones que puedan ofrecerle al productor especialmente los pequeños y medianos, tres servicios clave: insumos de producción, crédito y comercialización. El café por su propia condición y por tener un mercado de exportación bien estructurado se presta muy bien para que los productores se organicen en cooperativas y se beneficien al máximo del precio de exportación. Restituir la capacidad financiera y operacional de las organizaciones cooperativas cafetaleras es sumamente importante.

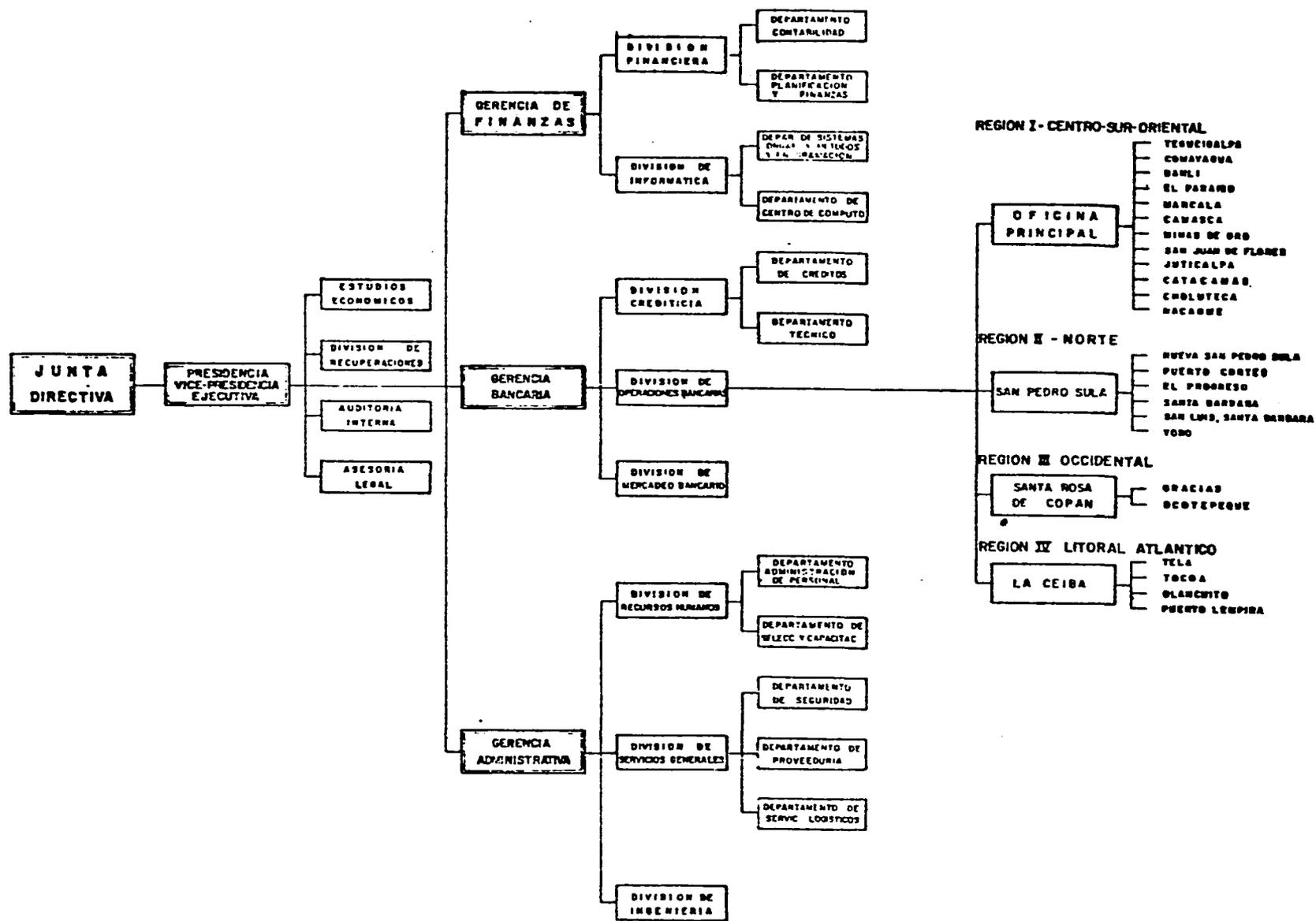
Banco Nacional de Desarrollo Agrícola (BANADESA)

El BANADESA fue creado mediante el Decreto No. 903 del 24 de marzo de 1980 para suplantar al anterior Banco Nacional de Fomento de Honduras. BANADESA tiene como finalidad principal "canalizar los recursos financieros para el desarrollo de la producción y la productividad en la agricultura, la ganadería, pesca, avicultura, apicultura, montes o silvicultura y demás actividades relacionadas con el procesamiento primario de esa producción, incluyendo su comercialización". Puede realizar toda clase de operaciones bancarias. Es el organismo del Estado hondureño para el financiamiento al sector agropecuario.

El Banco opera 28 Agencias Bancarias distribuidas en el territorio nacional y una red de tiendas de venta de insumos agropecuarios principalmente. Actualmente está en el proceso de descentralizar las operaciones mediante la creación de oficinas regionales, según se observa en el organigrama adjunto.

El BANADESA sigue la política del anterior banco de concentrar sus actividades entre pequeños y medianos agricultores. Al incrementarse, por parte del Gobierno, el programa de Reforma Agraria el Banco ha sido requerido para ofrecer financiamiento a este sector. Indudablemente el BANADESA es la institución bancaria con más experiencia en ofrecer crédito a pequeños productores en el país.

BANADESA ESTRUCTURA ORGANIZATIVA



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El nuevo Banco ha iniciado sus operaciones haciendo cambios drásticos en los cuadros de personal lo cual repercute por fuerza en las operaciones de la Institución. Estos cambios, unidos a que la institución no cuenta con un capital sólido, ni con suficientes fondos para prestar, ha estado afectando las operaciones globales del BANADESA. Es de anticiparse que una vez superado el proceso de reorganización la institución surja con mayor capacidad operacional para atender las necesidades de crédito de muchos medianos y pequeños agricultores. Sin embargo, la disponibilidad de recursos sigue siendo un obstáculo mayor que debiera ser superado si el BANADESA va a cumplir con el propósito de su creación. El plan de reorganización contempla un saneamiento de su cartera de préstamos para eliminar cuentas viejas incobrables que dan una imagen muy negativa y para lo cual se han creado ciertas reservas, aunque no suficientes. Pero este proceso aun no se ha realizado. Al 31 de diciembre de 1980 la cartera total de préstamos era de L 168.4 millones de los cuales L 61 millones, o sea el 36% eran préstamos morosos, que constituyen un arrastre de muchos años y en realidad un porcentaje alto tiene muy poco o ningún valor real como activo.

El financiamiento para café, tanto en crédito de avío como de refacción es conocido por el Banco. Al 31 de diciembre de 1980, el Banco tenía en su cartera de préstamos L 33 millones en créditos de café. Alrededor de dos terceras partes eran crédito de comercialización de corto plazo y el resto créditos de producción (avío) y de mediano plazo (refacción).

La fuente principal de recursos que utiliza el BANADESA para créditos cafetaleros de producción proviene de la línea de redescuento para café que anualmente establece el Banco Central de Honduras y que hace disponible a todo el sistema bancario nacional.

Se estima (en conversación con funcionarios del Banco Central) que alrededor de 100 millones de lempiras fueron otorgados por el sistema bancario nacional para créditos de café durante 1980. De estos, 32 millones de lempiras fueron recursos del Banco Central de Honduras, mediante la línea especial de redescuento para café.

En adición a estos recursos, el sector cafetalero utiliza fondos externos que se canalizan al país por medio de los exportadores de café. Estos recursos son depositados en las cuentas bancarias (cuentas de cheques, depósitos, etc.) de los exportadores y, naturalmente, no son parte de los 100 millones mencionados anteriormente. El monto de este financiamiento externo varía con el tamaño de la cosecha, el precio de exportación, etc., y su monto es considerable. Muchos miles de pequeños y medianos productores de café que no tienen acceso a las fuentes institucionales de crédito dependen de fuentes informales como la que ofrecen los beneficiadores de café e intermediarios quienes a su vez obtienen financiamiento de la Banca Nacional o de fuentes externas como la descrita anteriormente.

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El BANADESA, de contar con los recursos necesarios, esta en la capacidad de atender las necesidades de crédito de muchos miles de productores de café, por cuanto tiene experiencia en este tipo de financiamiento y cuenta con una red de 28 agencias bancarias, muchas de ellas en o cercanas a las zonas cafetaleras del país.

Banco Hondureño del Café (BANHCAFE)

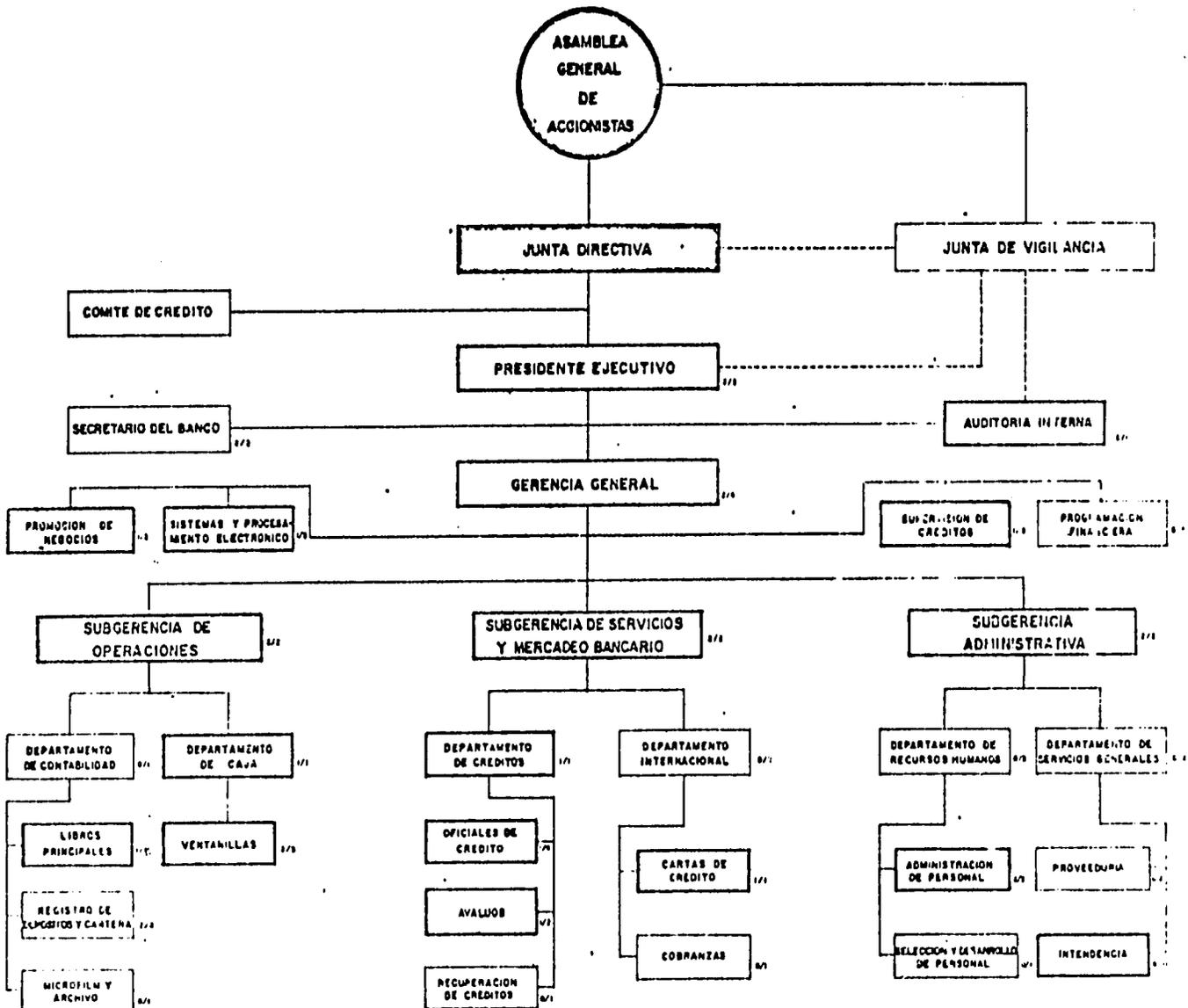
Con el incremento acelerado reciente de la producción y exportación de café hondureño, surge la inquietud en el sector cafetalero del país de organizarse para conseguir mejor trato en la provisión de servicios especialmente en lo referente a financiamiento. Se avanza en la creación de cooperativas cafetaleras y se organiza el proceso de producción-comercialización del café donde el Instituto Hondureño del Café tiene destacada participación.

Su Ley orgánica lo faculta para realizar cualquier tipo de operación bancaria autorizada en el país. Su domicilio principal será la ciudad de Tegucigalpa y podrá crear Sucursales y Agencias en el territorio nacional y en el extranjero. Operará con fines de lucro, y su finalidad principal será la de atender las necesidades financieras del sector cafetalero referente a la producción, industrialización y comercialización del café. Sin perjuicio de incursionar otros sectores en armonía con una sana política de riesgos bancarios. Tendrá un capital mínimo de L 6 millones y un máximo de L 50 millones, dividido en acciones nominativas de L 10 cada una. Los accionistas del Banco serán: Los productores de café (con acciones clase A); los exportadores de café (con acciones clase B); los torrefactores de café (con acciones clase C); y el Instituto Hondureño del Café (con acciones clase D). Las acciones no son transferibles de una clase a otra, pero las acciones clase "A" pueden ser adquiridas por las Asociaciones de Productores de Café las de clase "B" por las Asociaciones de Exportadores de Café; y las de clase "C" por las Asociaciones de Torrefactores. El total de acciones que estas Asociaciones pueden llegar a poseer no podrá exceder del 15% de la respectiva clase. El capital social del Banco estará representado en un 60% por las acciones clase "A", en un 15% por la clase "B", en un 5% por la clase "C" y en un 20% por la clase "D" (pertenecientes al IHCAFE). El Banco está constituido por los siguientes órganos (vease organigrama): Asamblea General de los Accionistas; Junta Directiva; Junta de Vigilancia, Presidencia Ejecutiva; Gerencia y Subgerencia General; y Auditoría Interna. El órgano supremo del Banco es la Asamblea General de Accionistas.

La Administración del Banco recaerá principalmente en su Junta Directiva que abarca el conjunto de funciones del Banco como tal en los niveles más altos de decisión. Esta Junta se compone de cuatro miembros electos por los Accionistas de la clase "A", uno por la clase "B", uno por la clase "C" y uno por la clase "D" para un total de siete. Como puede observarse, este es un Banco privado, que estará gobernado por los propios productores y todo el sector cafetalero del país. El Banco comenzará a operar desde la Oficina Principal en Tegucigalpa.

BANCO HONDUREÑO DEL CAFE

PROYECTO DE ORGANIGRAMA



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La Oficina Principal de Tegucigalpa está dotada de facilidades físicas adecuadas y equipada con máquinas computadoras modernas para una mayor eficiencia, rapidez y economía. Inicialmente contará con un personal de 25-30 empleados. Con un capital pagado de L. 8-7 millones (15 de marzo de 1981) espera entrar en operaciones que sean rentables en primera instancia (cuentas de cheques, cuentas de ahorro, depósitos a plazo fijo, préstamos personas a corto plazo, etc).

Toda vez que el IHCAFE forma parte de la Dirección de BANHCAFE y viceversa, y tomando en consideración que el Instituto tuvo destacada actuación en la organización de dicho Banco, es de augurarse una estrecha relación y coordinación entre ambos a diferentes niveles, especialmente cuando se trata de Programas Especiales de Crédito que conlleven algún grado de asistencia técnica para los beneficiarios.

Para operar en esta primera etapa, donde aún no cuenta con una red propia de Sucursales o Agencias, el BANHCAFE ha entrado en conversaciones con otros Bancos del país para establecer un servicio de corresponsalía en las zonas cafetaleras. De hecho, BANHCAFE no abrirá sus puertas hasta que haya negociado y cuente con dicho servicio de corresponsalía.

Los planes de expansión del Banco contemplan la apertura de una Sucursal en San Pedro Sula dentro de este primer año de operaciones. Posteriormente contempla proyectarse a Santa Bárbara, Copán y El Paraíso. La política de expansión del BANHCAFE parece indicar que sería la de limitar la proliferación de Sucursales y Agencias. La utilización de banca móvil, para zonas donde no haya servicios de corresponsalía pero con razonable demanda de servicios, es considerada por el BANHCAFE como una alternativa posible para el futuro.

Como puede observarse, el BANHCAFE es un organismo nuevo que aún no está operando, pero capacitado legalmente para constituirse en un vehículo para hacer llegar recursos de crédito al sector de la producción de café del país. Su estrategia operacional a nivel de campo está condicionada a que pueda contratar un adecuado servicio con bancos corresponsales, lo cual es una limitación especialmente en lo referente a la concesión y administración de créditos para pequeños productores de café localizados en diferentes zonas cafetaleras y de difícil acceso. Sin embargo, el BANHCAFE ha expresado interés especial en participar en el Programa de Crédito para el Mejoramiento de Cafetales de Pequeños Agricultores auspiciado por USAID/IHCAFE, y actualmente bajo análisis.

Para poder participar en la fase de crédito de dicho Programa, el BANHCAFE tendría que establecer una capacidad operacional que pueda garantizar un servicio adecuado a los usuarios. Esto es objeto de análisis más adelante cuando se examina la alternativa IHCAFE-BANHCAFE.

POSIBLES ARREGLOS INSTITUCIONALES EN EL OTORGAMIENTO DE
LOS CRÉDITOS Y LA ASISTENCIA TÉCNICA.

FORTALECIMIENTO DEL IHCAFE:

El Instituto Hondureño del Café será el organismo responsable del Programa de Mejoramiento de Cafetales para pequeños agricultores.

Para descargar las importantes funciones que tendrá en la ejecución del proyecto, el Instituto utilizará su organización de campo consistente en las Oficinas Regionales y Agencias de Extensión y deberá designar un Encargado del Programa en la Oficina Central.

EL IHCAFE será responsable de:

- Escoger las zonas o áreas donde se concentrará el Programa (siguiendo los parámetros establecidos).
- Dotar a las agencias que atenderán esas zonas de los recursos necesarios para hacer la labor que les corresponde dentro del Programa. Esto incluirá la selección de personal competente y su correcta ubicación, así, el apoyo logístico necesario.
- Planificar, organizar y conducir el proceso de disponibilidad de plántulas de café para los proyectos a financiarse con el Programa. Tendría que producir una decisión a corto plazo para escoger una alternativa definitiva en cuanto a quien (o quienes) van a producir los viveros y las plántulas necesarias para el proyecto y establecer los índices de calidad, ubicación de viveros, precios de las plántulas, etc.
- Definir y tomar decisiones en cuanto al suministro de los insumos de producción que se necesitará para el proyecto, estableciendo la mecánica y recomendando o adoptando los mecanismos mas efectivos a tono con los fines del proyecto.
- Tomar la iniciativa para planificar y obtener la mejor coordinación posible con las demás instituciones que participan en el Programa (ejemplo: crédito).
- Ofrecer la asistencia técnica necesaria a los beneficiarios del Programa por medio de su cuerpo de extensionistas, independientemente de cual sea el organismo de crédito, pero en estrecha relación con éste. La asistencia técnica comprenderá además de las transferencias de tecnología para la producción, la orientación al usuario en la obtención de los insumos, en la comercialización de su cosecha y en la complementación de las condiciones exigidas para formalizar los créditos.

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Esta asistencia técnica deberá ofrecerse siempre que sea posible, mediante la formación de grupos pequeños de beneficiarios (5-10) cuando se trata de prácticas bien específicas. El uso de la enseñanza a través de giras demostrativas (para observar conjuntos de prácticas) es recomendable para los grupos mayores (20-25). La asistencia técnica individual deberá utilizarse sólo cuando sea imposible o difícil utilizar la metodología de grupo.

- Promover y divulgar el Programa (incluyendo el elemento de crédito) entre los pequeños agricultores de las zonas escogidas.
- Preseleccionar los beneficiarios del Programa (sujetos a aprobación de su crédito).
- Elaborar el plan de inversiones (en base a los esquemas o modelos tecnológicos recomendaciones en el Programa) conjuntamente con el agricultor y discutir el alcance del Plan y del Programa. Esta labor será realizada por los Agentes de Extensión del IHCAFE.
- El IHCAFE también deberá realizar o participar en evaluaciones periódicas del Programa, acordadas entre las instituciones participantes.

El Instituto, independientemente de cual sea la fuente de crédito para los caficultores, deberá tomar las siguientes medidas:

- a) Crear una Unidad de Coordinación para el Proyecto; y
- b) Fortalecer el personal de Extensión Agrícola.

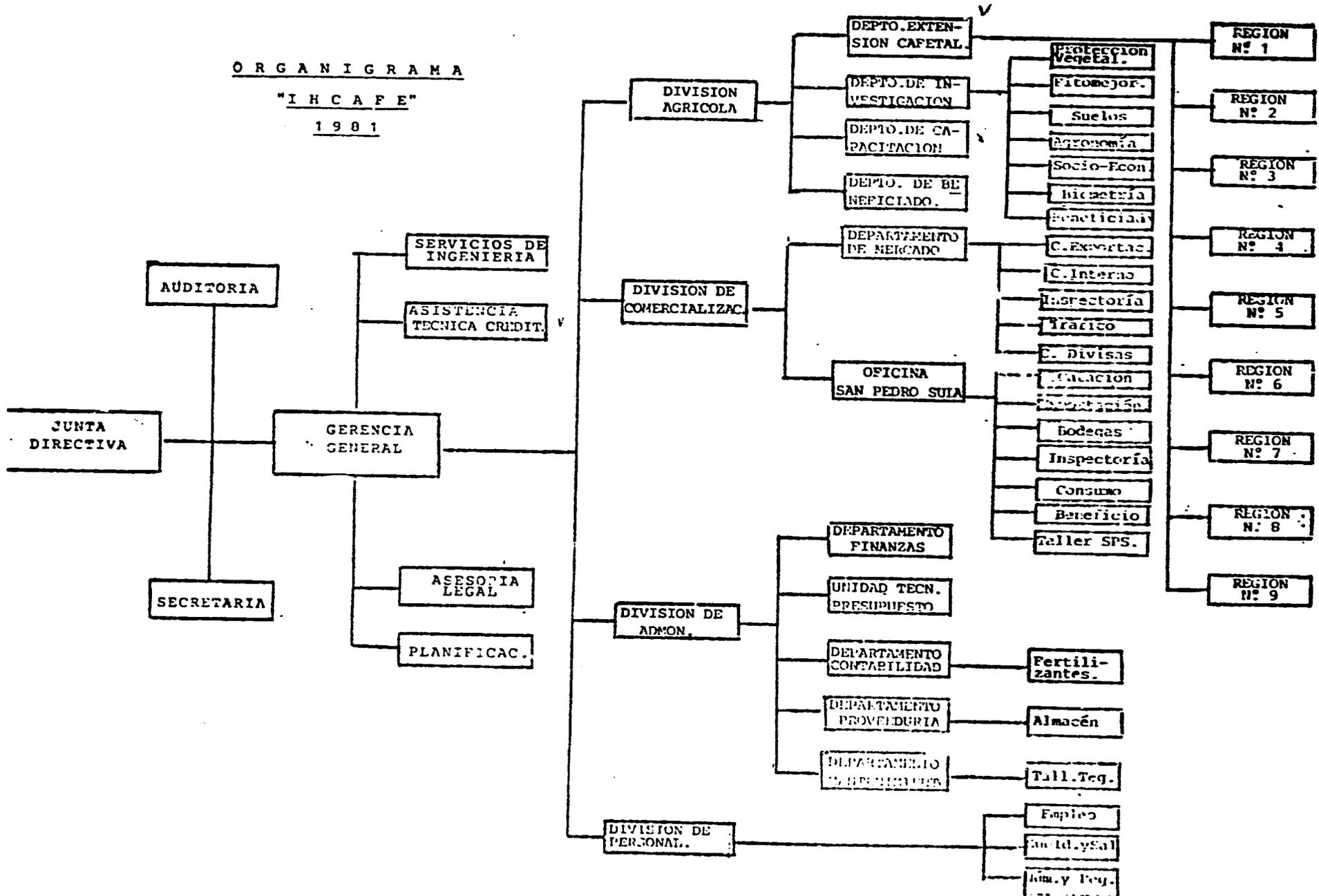
Unidad de Coordinación

Esta Unidad tendrá la responsabilidad de velar por la buena marcha del Programa de Mejoramiento de Cafetales de Pequeños Agricultores. Debido a que deberá estar en estrecha comunicación y colaboración con las Unidades Operacionales del IHCAFE que tengan relación con la ejecución del Programa, el Encargado de la misma deberá responder directamente al Jefe de la División Agrícola del IHCAFE. La Unidad no debe duplicar funciones sino que utilizará la organización existente, por lo cual sólo requerirá de un personal mínimo (un Encargado y una Secretaria).

Unidad de Extensión

Para ofrecer asistencia técnica a alrededor de 3,000 agricultores participantes en el Proyecto, el IHCAFE deberá asignar un número de Agentes de Extensión a razón de 1 por cada 100 caficultores. Esto requerirá el reclutamiento de nuevo personal por parte del Instituto.

ORGANIGRAMA
"IHCAPF"
1981



M A R C A R I B E

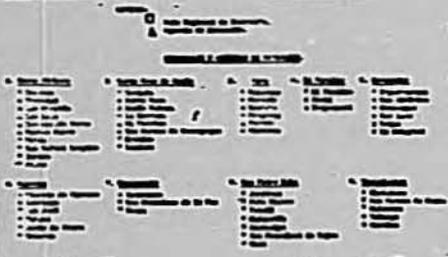
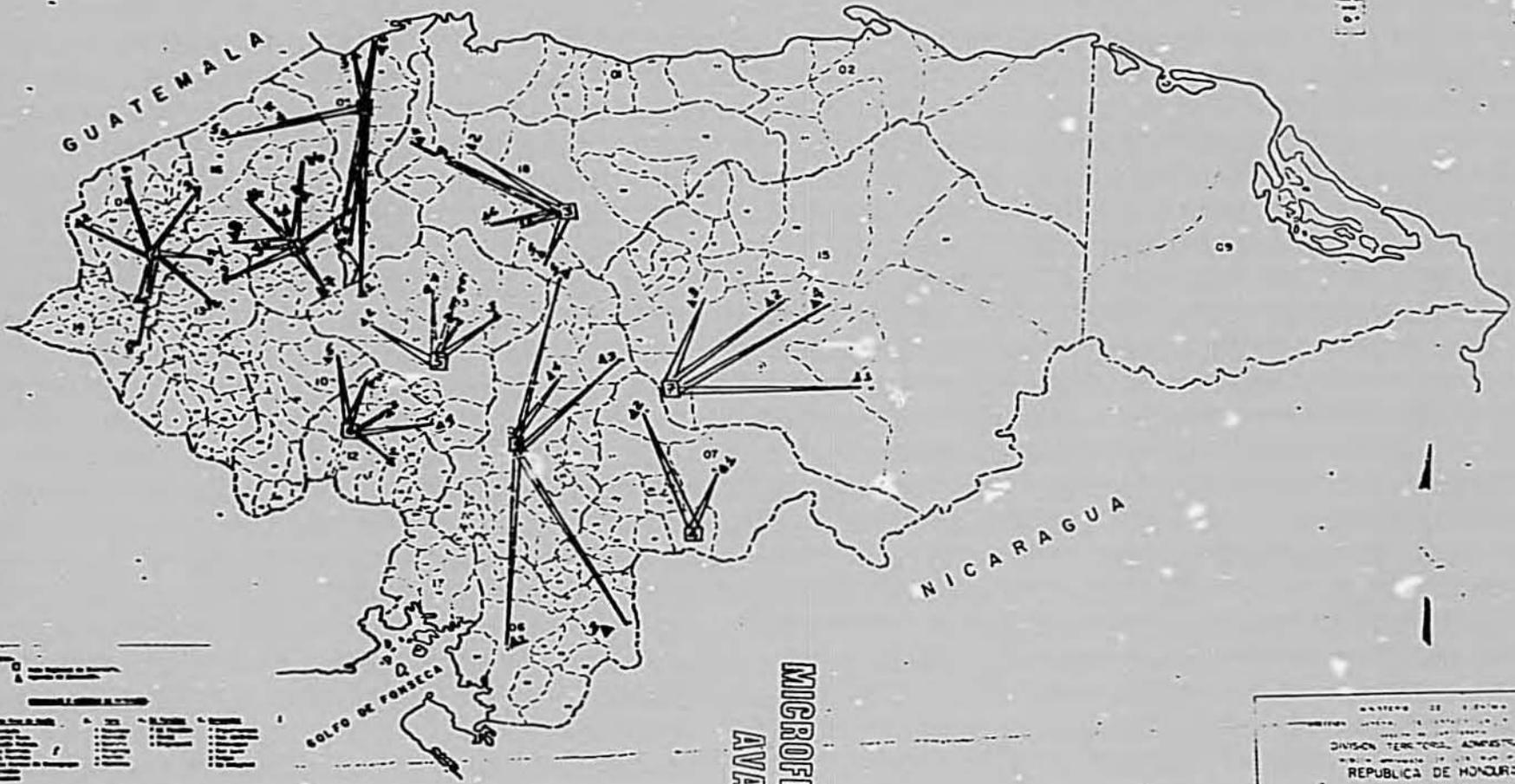
GUATEMALA

NICARAGUA

BOLFO DE FORSECA

MINISTERE DE L'INTERIEUR
 DIVISION TERRITORIALE ADMINISTRATIVE
 REPUBLICA DE HONDURAS
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Alternativas Concretas de Arreglos Institucionales

Para efectos de otorgar los créditos a los agricultores, se presentan dos posibles alternativas. Escas son IHCAFE/BANHCAFE, e IHCAFE/BANADESA.

Alternativa IHCAFE-BANHCAFE:

Por las estrechas relaciones de trabajo que existen entre el IHCAFE y el BANHCAFE (el IHCAFE posee el 20% de las acciones del BANHCAFE), se produce un marcado interés por parte de ambas instituciones de que el BANHCAFE se ocupe de administrar el crédito bajo el concepto de Programas Especiales del BANHCAFE, el cual contempla crear los mecanismos operacionales necesarios ajustados a cada Programa Especial. La dificultad mayor consiste en que al no contar con una organización de campo, el BANHCAFE depende de los servicios que le pueda ofrecer el IHCAFE en todo lo relacionado con el trámite de solicitudes de crédito (función normal de una institución financiera), y de los servicios que pueda contratar con Bancos corresponsales que operan en las zonas cafetaleras. Aspectos importantes tales como la aprobación de solicitudes de crédito y la formalización de contratos de préstamos, los cuales requieren la participación formal del BANHCAFE, plantean situaciones de organización y logística de bastante complejidad que requieren el diseño de procedimientos especiales. Tomando en cuenta estas dificultades inherentes a la realidad actual del BANHCAFE, se presenta a continuación una posible forma de operar identificada como Alternativa IHCAFE/BANHCAFE. Consiste en:

- 1- Reorganizar y fortalecer sustancialmente la Unidad Técnica Crediticia del IHCAFE.
- 2- Crear en el BANHCAFE el Programa Especial de Crédito para el Mejoramiento de Cafetales de Pequeños Agricultores.

Unidad Técnica Crediticia del IHCAFE:

El Instituto está en vías de reorganizar esta Unidad para servir mejor las funciones de crédito en que participa la Institución. Bajo la alternativa en discusión sería necesario fortalecer sustancialmente esta Unidad en apoyo a las actividades de crédito que el BANHCAFE no podría ofrecer inicialmente. Se estima que sería necesario designar unos 20 agentes de crédito, a razón de 1 por cada 200 caficultores en el Programa. El costo anual de este fortalecimiento se estima en L 600,000, más una inversión inicial de otros L 500,000 para la compra de vehículos.

Las funciones principales del personal de crédito serían las siguientes:

- 1- Preparar la solicitud de crédito, incluyendo la depuración necesaria de los solicitantes como sujetos de crédito, basado en la selección preliminar de caficultores hecha por el extensionista y el plan de inversión.

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- 2- Preparar toda la documentación necesaria del caso y someterla con sus recomendaciones a las respectivas Oficinas Regionales del IHCAFE.
- 3- Informar a los solicitantes directamente o por conducto de los agentes de extensión, la aprobación o rechazo del crédito.
- 4- Autorizar desembolsos de los créditos; supervisar los créditos, y realizar gestiones de cobro excluyendo la recepción de fondos; y
- 5- Establecer estrechas relaciones de trabajo con los agentes de extensión formando equipos de trabajo.

Un número de estas funciones las realizan actualmente los agentes de extensión dentro del Acuerdo IHCAFE-BANADESA.

Programa Especial de Crédito en el BANHCAFE:

El BANHCAFE tendría que proceder a nombrar el personal necesario que se responsabilize por la ejecución directa o mediante arreglos con otras unidades de la Institución de las funciones que le correspondan realizar basado en el deslinde de deberes con el IHCAFE. Las funciones principales del BANHCAFE serían las siguientes:

- 1- Administrar los fondos del Programa para los créditos a los beneficiarios.
- 2- Conocer y resolver las solicitudes de crédito de los agricultores del Programa. Para esto nombrará varios oficiales de crédito que se trasladarán periódicamente a las Oficinas Regionales del IHCAFE para conocer y resolver las solicitudes de crédito elaboradas por los agentes de crédito del IHCAFE. En esta función el oficial de crédito del BANHCAFE contará con la colaboración de los agentes de crédito y de los Jefes Regionales del IHCAFE para ofrecer información adicional necesaria o aclarar dudas.

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- 3- Las solicitudes aprobadas por el oficial de créditos del BANHCAFE serían enviadas a las Oficinas de los Bancos corresponsales respectivos para la debida formalización (1). Después de formalizado el crédito será desembolsado en retiros parciales, según el Plan de inversión, por el Banco corresponsal, previa autorización del agente de crédito. Del expediente de crédito, una copia del Plan de Inversión deberá entregársele al Gerente de crédito del IHCAFE para el seguimiento correspondiente; una copia de los documentos mas importantes del crédito (Plan de Inversión, solicitud, etc.) debe quedarse en el Banco corresponsal, y el resto del expediente se enviará la Oficina Central del BANHCAFE para la contabilización del crédito.

El cuadro 9 presenta un estimado del presupuestario de gastos del IHCAFE para la asistencia técnica y crediticia necesarios indicando la aportación de la institución y lo que se espera como aporte (donación del Programa).

En el caso del BANHCAFE el gasto anual ha sido estimado tentativamente por el BANCAHFE en unos L 130,000 - 150,000 anuales incluyendo los gastos relacionados con el nombramiento de cuatro Oficiales de Crédito que se trasladarían a las Oficinas Regionales del IHCAFE con la frecuencia requerida para la labor de resolución de las solicitudes de crédito y otras funciones inherentes al BANHCAFE.

(1) Esta formalización de los créditos del Programa en los Bancos corresponsales a nombre del BANHCAFE, requerirá posiblemente de la presencia de un Abogado del BANHCAFE, a menos que en el Acuerdo entre el Banco corresponsal y el BANHCAFE quede estipulado de otro modo. Toda la contabilidad, controles y la preparación de informes estadísticos y financieros del Progreso del Programa, será responsabilidad del BANHCAFE.

Arreglos Financieros IHCAFE-BANHCAFE:

Los fondos del Préstamo de la USAID, podrían hacerse disponibles al IHCAFE por parte del Gobierno de Honduras, mediante una donación, o mediante una combinación de donación para el fortalecimiento institucional y un préstamo para los créditos a los caficultores. También cabría la posibilidad de una donación del Gobierno al IHCAFE y un préstamo al BANHCAFE. En cualquiera de estos tres casos, se requerirán arreglos especiales entre el IHCAFE y el BANHCAFE porque ninguno de los dos está en capacidad de realizar la totalidad de las funciones requeridas para administrar el crédito.

En la presente alternativa IHCAFE/BANHCAFE, lo más lógico parece ser que el IHCAFE reciba los fondos del Préstamo, ya sea mediante donación total o una combinación de donación y préstamo. En cualquiera de los dos casos, el IHCAFE tendría que contratar con el BANHCAFE la realización de funciones crediticias importantes tales como las descritas en la sección anterior.

Esto podría formalizarse mediante la constitución por parte del IHCAFE, de un fideicomiso en el BANHCAFE. El BANHCAFE administraría los fondos de crédito a nombre del IHCAFE siguiendo las disposiciones establecidas por éste. Por la administración de los fondos en fideicomiso, se le reconocería una participación en los intereses cobrados de los préstamos hechos a los caficultores. De adoptarse este esquema se recomienda que los servicios prestados por el BANHCAFE se remuneren tomando en cuenta su efectividad en la recuperación de los créditos y no simplemente a base de una tarifa fija.

Alternativa IHCAFE-BANADESA:

La alternativa IHCAFE-BANADESA consiste básicamente de una continuación de la mecánica operacional actualmente en vigor entre ambas instituciones. Esta establece que "la promoción y selección de los productores que podrán acogerse a los beneficios del programa serán realizados por el IHCAFE por intermedio de sus extensionistas y jefes regionales; pero la calificación del sujeto de crédito, en todo caso, corresponderá al Banco considerados los antecedentes crediticios del solicitante".

En este caso el IHCAFE no tendría que reforzar la Unidad Técnica Crediticia como en el caso de la alternativa IHCAFE-BANHCAFE, ya que el BANADESA se responsabilizaría por todas las funciones de crédito y con seguridad tendría que aumentar su personal de campo en las zonas cafetaleras.

Arreglos Financieros IHCAFE/BANADESA:

En esta alternativa, por ser el IHCAFE y BANADESA instituciones del Gobierno hondureño, se facilitan los arreglos institucionales y el gobierno puede proporcionar los fondos para créditos a cualquiera de las dos instituciones, ya sea en forma de donación o de préstamo.

Observaciones Sobre las Dos Alternativas Presentadas:

Desde un punto de vista de relaciones existentes y experiencias adquiridas, lo más razonable sería canalizar los recursos de crédito por conducto del BANADESA. Esta institución tiene una red adecuada de agencias bancarias; conoce el crédito agropecuario, y en particular al pequeño agricultor hondureño, y mantiene una relación de trabajo con el IHCAFE que con muy pocos ajustes sirve los propósitos del Programa de Mejoramiento de Cafetales bajo consideración.

Por otro lado, el BANHCAFE es una naciente institución financiera en la cual los caficultores tienen un control mayoritario y en la cual el IHCAFE posee el 20% de las acciones. Ambas instituciones han expresado un marcado interés en el Programa de Mejoramiento de Cafetales de Pequeños Caficultores. Para el BANHCAFE este Programa constituye la primera oportunidad de organizar un Programa de Crédito Especial y en este caso de un gran contenido social por cuanto vá dirigido al sector de pequeños productores de café.

Bajo esta alternativa existe una buena oportunidad de que los propios productores de café contribuyan directamente a incrementar el fondo para crédito que se crearía con los fondos del Préstamo. La contribución de los productores de café provendría del diferencial entre el precio que reciben los productores por el café que se exporta para "nuevos mercados" y el precio real que pagan esos mercados. El 12% de la cuota de exportación vá destinada a nuevos mercados, o sea países que no son consumidores tradicionales de café. Estos países requieren café de buena calidad pero pagan un precio más bajo que el pagado por los países que son consumidores tradicionales de café. Por esta razón el precio que recibe el productor por este 12% de la cuota de exportación es el mismo que recibe por el café (8% de la producción nacional) destinado al consumo local. Este precio es de L 90/qg. Se calcula que en promedio hay un diferencial de L 20/qg entre los L 90 que recibe el productor por este 12% de su café y el precio a que se vende en los mercados nuevos. Este diferencial en precio es depositado por los exportadores de café en el Instituto Hondureño del Café y se supone que sea devuelto a los productores. Esto plantea una situación muy difícil de hacer. Hay unos 40,000 productores y en realidad no se sabe como determinar lo que le toca a cada uno porque en un gran número de casos no hay registro de los productores individuales, especialmente los pequeños que venden su café a intermediarios, etc. En conversación sostenida con algunos representantes de los productores de café que son miembros de la Junta Directiva del IHCAFE, ellos expresaron que una forma de resolver esta situación es transferir el importe de este diferencial en el precio del café destinado a nuevos mercados a BANHCAFE para fortalecer los fondos para crédito del Programa de Mejoramiento de Cafetales de Pequeños Agricultores. La gerencia del IHCAFE no tiene objeción a esta idea. Para ser efectiva tendría que ser aprobado por la Junta Directiva del IHCAFE.

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A base de una cosecha estimada de 1,500,000 quintales de café el 12% serían 180,000 quintales que a L 20 por quintal generan L 3,600,000. La designación del 12% de la cosecha para mercados nuevos surge de la imposición de cuotas de exportación como parte del Convenio Internacional del Café que entró en vigor en noviembre de 1980. Se anticipa que las cuotas continúen en vigor para el próximo año de cosecha y con toda probabilidad se extiendan aún más allá. Esto podría generar una cantidad de fondos de bastante significación para fortalecer el Programa de Mejoramiento de Plantaciones de Café de Pequeños Agricultores, si se utiliza la alternativa IHCAFE-BANHCAFE.

En base a todo lo anterior, se recomienda el siguiente curso de acción:

1. Se asigna al IHCAFE la responsabilidad por el programa en su totalidad, recibiendo los fondos de préstamo de parte del gobierno en los mismos términos y condiciones que los provee la AID.
2. El IHCAFE negociará con el BANHCAFE y con el BANADESA para establecer un fondo en fideicomiso en cada una de estas instituciones en base a la capacidad de cada una para ofrecer los servicios de crédito requeridos por los agricultores participantes.

En esta forma no se divide la responsabilidad del Programa a la vez que se aprovecha la capacidad instalada del BANADESA y se le dá una oportunidad al BANHCAFE de demostrar que puede organizar un Programa Especial para participar siguiendo su política interna.

Los términos del fideicomiso deberán ser revisados anualmente de manera que el IHCAFE pueda hacer los ajustes necesarios basados en la experiencia que ambos bancos vayan adquiriendo.

Uso de los Ingresos Provenientes del Pago de Intereses:

La recomendación es que el agricultor pague una tasa de interés del 14% anual sobre saldos. Asumiendo que los fondos para crédito los reciba el IHCAFE bajo los mismos términos y condiciones del Acuerdo de Préstamo entre gobiernos (USA-Honduras), habría que destinar el tres por ciento para el pago de intereses de la deuda, quedando una tasa neta de 11% disponible. Se recomienda que los fondos generados se utilicen para:

- 1- Cubrir parte de los altos costos de administración del proyecto (asistencia técnica y participación en las funciones de crédito) en que incurrirá el IHCAFE.
- 2- Cubrir los gastos operacionales de las instituciones que administren el crédito a los caficultores, bajo los términos acordados con el IHCAFE.
- 3- Crear una reserva para préstamos incobrables.

Requerimientos de Asistencia Técnica Externa:

El IHCAFE como responsable de la ejecución del Programa requiera asistencia técnica externa, principalmente en la alternativa IHCAFE-BANHCAFE. En este caso el IHCAFE tendrá que especializar un cuerpo de técnicos de crédito con funciones complejas y compartidas a la vez con Oficiales de Crédito del BANHCAFE. Por otro lado, el BANHCAFE es una institución que una no ha iniciado operaciones y tendrá que organizarse y responsabilizarse por un programa de crédito agropecuario para pequeños agricultores con las complejidades del caso.

Se recomienda ofrecer asistencia técnica al IHCAFE para ayudarle en las siguientes funciones:

- 1- Establecer las normas de crédito a los caficultores. Incluye criterios sobre propósitos, montos, plazos, garantías, etc.
- 2- Establecer las relaciones de trabajo entre el personal del IHCAFE y las instituciones de crédito participantes, y entre el personal de extensión y el de crédito en el IHCAFE.
- 3- Producir un procedimiento operativo para normalizar todo lo relacionado con el trámite de solicitudes de crédito desde la recepción de las mismas hasta que el crédito es pagado. Esto es de suma importancia y debe ser producido por técnicos con reconocida experiencia en esta clase de crédito. Este documento incluye el diseño de todos los formularios a usarse convirtiéndose de hecho en un Manual de Procedimientos del programa, que tiene diversos usos, incluyendo el adiestrar al personal.
- 4- Adiestrar al personal de crédito en las normas y procedimientos a utilizarse.

La asistencia técnica podría consistir de un asesor a tiempo completo por dos años hasta que los primeros créditos comiencen a retornar por vía de recuperaciones para evaluar primeros resultados.

El asesor debe ser un técnico especializado en crédito agrícola, preferiblemente con experiencia en crédito cafetalero.

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CUADRO 9.- PRESUPUESTO DE GASTOS PARA EL FORTALECIMIENTO DEL IHCAFE

1 Coordinador Nacional	L 3,500./mes	49,000.	-	49,000.
1 Secretaria de Unidad	L 600./mes	8,400.	-	8,400.
40 Agentes de Extensión	L 850./mes	285,600.	190,400.	476,000.
60 Vehículos nuevos	L20,000./c/u	720,000.	480,000.	1,200,000.
20 Agentes de Crédito	L 850./mes	-	238,000.	238,000.
Viáticos y zonaje dentro del país	77,000.	108,060.	185,760.	
Equipo de Oficina y mobiliario	20,000.	30,000.	50,000.	
Equipo Agrícola		24,600.	16,400.	41,000.
Combustible y lubricantes		55,072.	82,608.	137,680.
TOTALES:		<u>1,240,372.</u>	<u>1,145,468.</u>	<u>2,384,840.</u>

ESQUEMA No. 1 RENOVACION DRASTICA (3333 pl/Mz.)

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACTIV. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	ADENTO DE 5% ANUAL
AÑO 1							
<u>ESTABLECIMIENTO</u>							
Arranque café y sombra		Jorn.	70	5.00	350.00		
Limpia terreno		Jorn.	75	5.00	375.00		
Corte estacas		Jorn.	6	5.00	30.00		
Trazado		Jorn.	9	5.00	45.00		
Aboyado		Mil de plantas	3	29.00	87.00		
Transporte		Viaje	5	50.00	250.00		
Acarreo		Jorn.	17	5.00	85.00		
Siembra		Jorn.	12	5.00	60.00		
Compra vivero		Planta	3.333	0.40	1.333.00	2.615	
Subtotal							
<u>MANTENIMIENTO</u>							
Control de Malezas							
Mano de obra	jul.ag. nov.en.	Jorn.	32	5.00	160.00	160.00	
Fertilización							
Mano de obra	ag.dic.	Jorn.	11	5.00	55.00		
Materiales							
Fert. al suelo		qq.	8.5	32.00	272.00	327.00	
Poliarés							
Control, plagas, enf.							
Mano de obra	jun.jul.ag.sep.	Jorn.	8	5.00	40.00		
Materiales							
Fungicidas		Kg.	3.6	10.00	36.00		
Insecticidas		Lts.	2	20.00	40.00		
Adherente		Lts.	2	8.00	16.00	132.00	
Herramientas						60.00	
TOTAL AÑO 1						3,294.00	

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	ADENTO DE 5% ANUAL
AÑO 2							
<u>MANTENIMIENTO</u>							
Fertilización							
Mano de obra	jul.ag.nov.	Jorn.	34	5.00	170.00		
Materiales							
Fert. al suelo		qq.	13	32.00	416.00		
Foliares		Lts.	9	8.00	72.00	658.00	
Control, plagas, y enf.							
Mano de obra	J.J.A.S.O.N.	Jorn.	20	5.00	100.00		
Materiales							
Fungicidas		Kg.	19.5	9.00	195.00		
Insecticidas		Lts.	3	20.00	60.00		
Adherentes		Lts.	3	8.00	24.00	379.00	
Control mecánico de maleza							
Mano de obra	ag.nov.dic.	Jorn.	30	5.00	150.00	150.00	
Control químico de maleza							
Mano de obra	mayo	Jorn.	6	5.00	30.00		
Materiales							
Herbicidas		Galon	0.5	75.00	37.50	67.50	
Herramientas						<u>60.00</u>	
TOTAL AÑO 2						<u>1,380.00</u>	

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	AUMENTO DE 5% ANUAL
AÑO 3							
Costo de Mantenimiento						1.314.00	1.380.00
Más:							
Cosecha		qq.	25	22.00	550.00		
Transporte y Beneficiado		qq.	25	13.00	325.00	875.00	919.00
TOTAL AÑO 3						<u>2.819.00</u>	<u>2.299.00</u>
AÑO 4							
Costo de Mantenimiento						1.380.00	1.449.00
Más:							
Cosecha		qq.	35	22.00	770.00		
Transporte y Beneficiado		qq.	3	13.00	445.00	1.225.00	1.286.00
TOTAL AÑO 4						<u>2.605.00</u>	<u>2.735.00</u>
AÑO 5							
Costo de Mantenimiento						1.449.00	1.521.00
Más:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00	1.575.00	1.654.00
TOTAL AÑO 5						<u>3.024.00</u>	<u>3.175.00</u>
AÑO 6							
Costo de Mantenimiento						1.521.00	1.597.00
Más:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00		
Poda		Jorn.	17	5.00	85.00	1.660.00	1.743.00
TOTAL AÑO 6						<u>3.181.00</u>	<u>3.340.00</u>

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	ADUMENTO DE 5% ANUAL
AÑO 7							
Costo de Mantenimiento						1.597.00	1.677.00
Más:							
Cosecha		qq.	40	22.00	880.00		
Transporte y Beneficiado		qq.	40	13.00	520.00		
Poda			17	5.00	85.00	1.485.00	1.559.00
TOTAL AÑO 7						<u>3.082.00</u>	<u>3.398.00</u>

TECHNICAL ANALYSIS

1. SUMMARY

This analysis reviews the characteristics of coffee rust and its threat to coffee production in Honduras, alternative strategies to respond to the problems posed by rust, and the technical constraints to the selected strategy. A detailed description of "technification" is provided to serve as a basis for social and economic analyses as well as the technical analysis, per se.

Rust is the most critical of several threats to coffee production, and especially to coffee production on small farms. A comprehensive program of assistance to the small coffee farmer would include both immediate assistance in technification of his farm and long range efforts to develop rust resistant varieties or other "packages" of technology. Many coffee producers will certainly be unable to improve their productivity to an economically feasible level and will be forced to abandon coffee production entirely. A program of introduction of alternative crops is the best solution to their problems. This Project, however, is concerned with the small coffee producer who is capable of continuing in coffee production, by virtue of his land, technical ability, and motivation. The recommended strategy is to provide this small coffee producer the credit and technical assistance necessary for him to adopt modern coffee cultivation techniques. This is primarily an immediate response to the threat of coffee rust, but it is a response which more than maintains the status quo; it improves the small farmer's long-range prospects as a participant in the commerce of coffee production.

The primary constraints to a technification program are credit and T.A. When these are available, the secondary constraints become water, labor, seed (plants) and agricultural inputs (fertilizer and pesticides). Water can be made available easily. Fertilizers present a logistical problem which can be solved by IHCAFE. Pesticides are necessary only in the presence of a disease or insect problem, and, then, are available through IHCAFE or BANADESA. IHCAFE has already begun a program of plant multiplication through farmer cooperators, who will have access to credit through the A.I.D. credit fund. Labor supply may represent a localized constraint; but, in the aggregate, the labor problem facing coffee producing areas is excess labor due to reduced production, not a labor shortage.

2. Characteristics of Coffee Rust

Coffee rust has been found unofficially in two coffee producing regions of Honduras, La Paz, on the border with El Salvador, and Santa Barbara, near Lake Yojoa, in the center of the country. The threat of rust has become immediate and serious because of the destructive potential of the disease and the existence of conditions favorable to its spread. It is impossible, however, to estimate the degree of spread of the disease in

Honduras at present, because it is the dry season. When the rains begin the typical fungal symptoms will appear more clearly.

Rust is a Fungus (*Hemileia Vastatrix*) whose spores can be transmitted by any number of common agents, including man and wind. When rust invades the leaves of a plant, it causes pale yellow lesions which leads to defoliation and the resultant reduction of photosynthetic capacity. Yields of coffee beans are reduced, and the plant will eventually die.

Rust was first discovered in Sri Lanka (Ceylon) in the 19th century, where it caused the virtual destruction of the coffee industry in ten years. It has since appeared in Oceania, Africa, South America, and most recently Nicaragua (1976) and El Salvador (1979). It is difficult to estimate the damage caused by rust in Central America because political turmoil has caused reductions in the harvest of coffee. Estimates are, however, that about 13,000 manzanas are affected in El Salvador, and about 19,000 manzanas in Nicaragua (despite a drastic eradication program in 1977-78). The amount of aggregate loss in production which it causes will depend on the amount of control practised. One estimate is that losses will amount to 15% of production within 3 to 5 years of its appearance.* Another estimate is that regional losses will be equivalent to 50% of production by 1987.**

For many small farmers who do not have the means to combat rust, the amount of loss is only limited by the speed with which rust spreads. The environment in Honduras presents no natural barriers to the dissemination of spores. While there is some evidence in El Salvador that rust does not cause as great of damage at very high altitudes, mountains have never, in the past, acted as barriers. With sufficient atmospheric moisture (in all but about 4 months, or year-round near Lake Yojoa) the coffee leaf is a very susceptible host, and the fungus spreads easily.

3. Alternative Strategies to Respond to Coffee Rust

Rust is primarily an economic problem, although a biologic threat. Rust exists in coffee producing areas worldwide. Technically, it can be controlled with little difficulty, and coffee production can continue in its presence. The problem confronting Central America is that rust is the first major natural problem to confront coffee producers, and coffee production is carried on in a traditional way which makes chemical control measures economically unfeasible.

* Report of the USDA Coffee Rust Team Studies in Central America, 1977

** Informe Final del Grupo de Estudio Interinstitucional, para Evaluar la Situacion de la Roya... ROCAP, 1980.

Responses to the appearance of this major threat to coffee production could be: i) attempt to eradicate it and return Central America to a rust free environment, ii) introduce alternative crops to replace coffee, iii) introduce rust resistant coffee varieties, and/or iv) technify coffee farms to make chemical control feasible. All of these activities can be useful, to a degree, in a program of integrated pest management. The strategy which is considered appropriate for USAID/Honduras is the fourth - technification of coffee farms to increase productivity and permit coexistence with coffee rust and other natural problems.

Eradication and Quarantine

Eradication and quarantine are considered together because they are basically aiming at the same objective - a rust free environment. Eradication is not considered practical. Quarantine can be of some value in slowing down the spread of rust.

Nicaragua attempted to eradicate rust in 1977-78; and, although the program was almost successful, rust has returned in two years to infest over 19,000 manzanas. Rust would have to be eradicated in dry conditions before spores are released. The rust fungus passes the dry season as pustules on the coffee leaf. Eradication has to be total, and total eradication would require an extensive dry season, perfect detection, and prompt treatment. Eradication would also have to be in regional cooperation, because rust respects no political boundaries. These limitations make eradication extremely impractical.

Honduras has a quarantine program which essentially sprays vehicles as they enter rust free areas. This could help to slow down the spread of rust, and it serves as effective warning to the public, but the ease of transfer of rust by agents other than vehicles limits the usefulness of this type of program.

Introduction of Alternative Crops

For many farmers, the technology and capital requirements of rust control will be prohibitive, and the only agricultural resource will be to seek alternative crops. The strategy of crop diversification has merit both as a response to rust, and as a response to market fluctuations found in coffee.

The small farmer could avoid the problem of coffee rust by simply growing something else. IHCAFE has completed agronomic studies of several crops which would broaden the economic base of coffee producing regions (including: cacao, allspice, cardamon, pineapple, macademia, hule, wood, platano, and orange), and a crop diversification division will open in IHCAFE in 1981. However, crop diversification is not a realistic alternative to coffee production for the small farmer in the near future. There is no crop with any better economic promise than coffee for the present, and there is no

infrastructure or institutional support for alternative crops (i.e., trained researchers and extensionists, processing plants, marketing expertise). The cost to train extensionists in the production and marketing of new crops, to build processing plants, and to establish marketing channels would be prohibitive in dealing with the immediate coffee rust problems facing small farmers. The small, marginally productive coffee producer would more easily learn improved coffee production than the techniques involved in adopting a new crop. When IHCAFE has more experience dealing with the small coffee producer, it may be appropriate for them to assist small farmers in coffee producing regions to grow other crops. For the present, a program of assistance to the small farmer in coffee production is sufficient.

Introduction of Resistant Varieties

The advantages of a program to introduce coffee varieties which are resistant to rust are that the need to apply chemicals is reduced, and the investment needed to replace coffee trees is relatively low. The limitations of this strategy are that: i) there are no rust resistant plants which can be expected to be ready for commercial distribution in the near future, ii) reliance upon rust resistance as the only strategy creates a risk that a new rust strain will mutate out and attack the once-resistant plants, and iii) it does not respond to other natural and economic problems facing the coffee producer, and iv) it is possible that rust resistant varieties will not respond well to traditional cultivation techniques.

Genetic material which demonstrates rust resistance is available and being improved and tested. One line, Hibrido de Timor, is resistant to all 32 races of rust. This type of horizontal resistance offers hope for the future for coffee producers. However, a great deal of work needs to be done both to increase the productivity of these resistant varieties and to multiply plant material with proven resistance. The risk would also be very great, at present, that resistance could be selected out in a program of plant multiplication on a commercial scale.

IHCAFE is testing the productivity of a variety (Catimore) which is supposedly rust resistant, but, since rust is not present on experiment stations, its resistance is untested. The work that remains in developing a commercially useful rust resistant coffee variety would best be carried out internationally and regionally, taking advantage of existing institutions with experience in coffee research such as CATIE, PROMECAFE, and OIRSA. The proposed ROCA Rust Control Project includes assistance to PROMECAFE and CATIE in the development and reproduction of resistant varieties. With these increased activities it may be possible that the ROCAP Project will have developed one or more resistant varieties which would be ready for field testing by 1986.

Technification and Chemical Control

The best immediate response to the problems caused by coffee rust is technification of coffee production. This is not only the best short run response, but it is also the basis of any long run program to respond to many natural and economic problems facing coffee producers. Technification is, simply, the improvement of productivity through the introduction of modern varieties, the increase of foliar area, and the improvement in the plant's environment. Technification achieves three goals vis-a-vis coffee rust: i) it increases the economic return to the farm, so the farmer can afford the relatively high cost of chemical disease control, ii) it creates a more orderly farm where chemical control is efficient, and iii) it creates a more vigorous plant that is less susceptible to disease. The most dramatic effect is the first - increasing economic return, and this is the most crucial reason for a program of technification. Central America has been fortunate to be isolated from diseases such as coffee rust; but the occurrence of rust in other parts of the world has, along with other natural and economic problems, forced coffee producers to improve their productivity; in this process, Central America has been left with a precariously outdated mode of production, which in addition to being susceptible to disease, is increasingly on the margin of economic viability. The strategy of technification does not attempt to perpetuate traditional practices, but rather attempts to bring Honduran coffee producers into a more competitive position relative to the rest of the coffee producing world.

A program of technification can move the smaller coffee producer away from the margin of economic viability into the commercial main stream of the coffee market. His ability to survive coffee rust will be the most immediate gain, but his long range welfare is also best served by a technification program. In establishing contact with the Extension service and learning improved coffee production, the farmer is taking the first step toward overall improvement of his farm. He becomes technically better able to adopt new disease resistant coffee varieties that may be available in the future, and he masters cultivation techniques which can be transferred to new crops if these appear feasible in the future. His increased productivity can create the economic means for dealing with rust and with other natural threats such as coffee borer (broca) and it can provide him with a more solid financial base for entering the market, and surviving the typical price fluctuations which coffee experiences. Technification gives the small farmer the means to solve his own problems, and that is his best long run solution to the immediate threat of coffee rust.

4. Characteristics of Coffee Technification

Technification of a coffee farm is, simply, the series of steps of improvements of cultivation and management practice: which lead to a highly

productive farm. There is a strong relationship between several of these steps which makes it almost mandatory that they be initiated at the same time, and, theoretically, the most successful way to technify a farm is to introduce all of the improved practices from the beginning. However, in practice, it is known that many coffee farmers technify in a gradual process tailored to their particular circumstances. Four examples of the technification process are shown below in Tables 1-4. The first example is "total renovation" of a coffee farm, in which the farmer selects a parcel of land, removes all coffee and shade, and initiates a completely technified farm. The other examples represent a sample of the numerous agronomic alternatives open to coffee producers which can lead to a technified farm.

The technology upon which "technification" is based has three fundamental aspects: i) increasing the foliar area per area of land, ii) introducing modern varieties of coffee, iii) creating an environment which is conducive to high production.

The first aspect, increasing foliar area, is basic to increasing biological output. Leaves transform solar energy and nutrients into the compounds which eventually form all parts of the plant, including the fruit, or coffee bean. The optimum relationship between land and foliage is considered to be 7:1 foliage to land. That is, one hectare of land should contain seven hectares of leaf area in order to achieve maximum yields. Basically, there are two ways of achieving the optimum foliar area: i) using high standing varieties, and forming them into vines as is done in El Salvador, and ii) using low standing varieties, with high plant populations (3,000-5,000 per hectare), and two to three main branches per plant. The latter is the most common, world wide, and is the practice which is being introduced in Honduras.

The second aspect, introduction of modern varieties, is very important for the achievement of an increased foliar area, but also improves the coffee farm in other ways. There are several commonly used Arabica coffee varieties with excellent productivity (including Bourbon, Mundo Novo, Caturra, Pacas, and Catuai). They have in common: broad and numerous leaves, branches with many nodes, short internodular distance, high number of buds, a closed angle of insertion of the branches, and an ample root system. There are several instances of highly productive varieties with disease resistance, and it is likely that within ten to fifteen years there will be varieties with the above characteristics, high yields, and proven resistance to a significant number of races of coffee rust. However, such varieties do not currently exist.

The third aspect of technification, improved management of the plant's environment, comprises the practices which complement selection of plant variety and increase of foliar area. The first two aspects imply specific actions, i.e., selecting and planting new coffee plants. The following management practices do not always require such a specific action, but are rather principles which should be tailored to the farmer's individual circumstances:

- i) Increase disposable solar energy. The farmer can reduce the amount of shade, orient rows from east to west to maximize exposure, and select varieties with more erect branches. Reduction of shade can mean elimination of old shade trees and replacement with more appropriate varieties, or it can mean simply a thinning of the existing shade canopy. Optimum solar exposure would require the entire series of steps from selection of variety to orientation of rows to planting of shade trees.
- ii) Increase availability of water. The farmer can employ soil and water conservation practices such as contour planting and construction of simple ditches or reservoirs, he can irrigate, or he can simply reduce the number of other plants (especially types of shade) which compete with the coffee plants for water.
- iii) Increased nutrients. Increased sunlight requires an increased amount of nutrients, especially nitrogen and trace elements. Fertilization should be based upon a soil and foliar analysis, and should include foliar application of needed trace elements. However, conditions across Honduras have shown that a regimen of three applications of fertilizers in the soil can be very effective. The applications coincide with the flowering, the appearance of fruit, and with the start of the rainy season. When new coffee trees are planted, extra phosphorous is incorporated in the soil. The third fertilization includes extra nitrogen (urea). Otherwise, a common formula is 18-6-12. A manzana with 2,500 plants would require about 368 lbs. of nitrogen, 75 lbs. of phosphorous, 150 lbs. of potassium, and 50 lbs. of magnesium.
- iv) Reduced competition and disease. Weeds, insects, and diseases compete with the coffee plant for nutrition and energy. Increased fertilization and sunlight will have to be accompanied by increased weed control. When the slope of the coffee farm is steep, it will be impossible to remove all competitive growth because of the threat of soil erosion. In this case, weed control will be mechanical (manual), and selective. With flatter terrain, total weed elimination becomes feasible. When physical conditions are appropriate and the farmer is able to understand the principles of spraying and the potential toxicity of herbicides, chemical weed control may be possible. Paraquat, 2-4D, and Gesatop would be used. Fungi which are found in Central America, but which are not considered an immediate threat to coffee production include Ojo de Gallo (*Mycena Citricolor*), Koleroga (*Pellicularia Koleroga*), and Cercospora. Fungi can be controlled both by management and chemical control. Shade reduction and weed control will contribute to a fungus free environment, and manual elimination of affected leaves can help slow down their spread. Chemical control would be disease specific, and could include the use of Difolotan, Cupravit, Lead Arsenate, or other fungicides. Coffee rust, of course, is the primary threat to coffee production. Healthy plants will be less

susceptible to rust, but chemical control will be necessary in many farms. While there is still research needed on the best system of chemical control, the current recommendation is six applications of copper oxichloride (in the six principle months of rain). Leaf minor is an insect which attacks coffee foliage. It is found in Central America, but its populations are not excessive. Coffee borer (broca) is an insect which penetrates and ruins the coffee beans, and is a serious problem in Central America, although it has not spread extensively in Honduras. Additionally, there are problems with rematodes, spiders, aphids, and other insects. Chemical control would depend upon the circumstances.

- v) Improved pruning and plant formation. Coffee beans appear only on new growth. Pruning is done to remove those parts of the plant which have lost their productive capacity, and to allow maximum generation of new branches. There are several ways of pruning a plantation - either by plant, by row, or by lot; and there are different ways of pruning a plant-cutting it back to a few inches over the soil (recepta) or leaving about a meter of growth above the ground (rock and roll). Pruning systems can be applied in cycles to achieve a constant production per area, applying recepta in one row and rock and roll in four rows, for example. While pruning is a continual process, equally important is the formation of newly planted coffee trees. There are several techniques to increase the number of effective trunks or branches per plant. IHCAFE is working with recommendations of bending young plants over to the ground to allow 2-3 branches to grow vertically as trunks or planting two or more plants together to grow as one.

Technification, as described, includes a variety of practices. The degree of sophistication can cover a broad range. The farmer will have to learn some basic principles, such as the relationship between sunlight and fertilization, the desirable characteristics of plant formation, and the reduction of weed and insect competition. However, the actual technology which a farmer adopts will depend upon the relationship which is established between the IHCAFE researcher, extensionist, and the farmer. In the following analysis, it must be understood that the specific technologies which will be adopted are subject to a great deal of variation.

5. Technification Models

Although technification is a continuum of processes based upon the above agronomic principles, and each farmer will technify his farm in a way consistent with his own circumstances, it is useful for the purposes of technical and financial analysis to describe models of technification which characterize conditions likely to exist in the field. It is important to recognize that these are models for analysis, and not hard and fast technological packages which can be applied to all farmers. It is equally

important to understand, however, that the participating farmer will be expected to take all of the steps necessary to improve his productivity to an economically viable level. While there will be room for flexibility in the way in which each agronomic improvement is made there will be no credit plans made which allow for the perpetuation of traditional practices which will negate the potential productivity and income gains of previous steps.

A. Total Renovation

For most farms with the following conditions, the most efficient way to technify the farm is through total renovation:

1. Traditional variety (typica or Bourbon)
2. Low plant density (1,000-1,500 plants/mz.)
3. Excessive shade
4. Old, overgrown or unhealthy plants
5. Little or no use of agricultural inputs
6. Average yields of less than 10 qq. per hectare.

Total renovation requires complete removal of coffee plants and shade, soil preparation (including conservation techniques), planting of improved shade trees, planting a high density of an improved coffee variety (3,300 plants per manzana), and initiation of improved management (fertilizer and pest control). Specific activities and costs for total renovation are represented in table 1, below.

B. Partial Renovation (pruning, interplanting, shade control)

Farms with the following conditions may be in good enough shape to allow only partial renovation as a way of technifying:

1. Improved coffee variety (Caturra, Pacas, etc.)
2. Moderate plant density (less than 2,000-2,500 plants per manzana)
3. Excessive shade
4. Overgrown plants
5. Little or no use of agricultural inputs
6. Average yields of between 10 and 15 quintales per hectere.

The response to these conditions could be a reduction of shade through trimming, pruning of existing plants to increase productive growth, interplanting of new coffee plants to increase density to 3,300 plants per manzana, and improved management (fertilizer and pest control). Partial renovation is only possible when the existing plants are an improved variety and young enough to warrant saving (less than 10 years old), and when the shade is such that mere trimming will produce adequate light. The decision of when partial renovation is practical is a matter of judgement between the farmer and extension agent, but, in general, there should not be a perpetuation of non-productive conditions. Specific activities and costs of Partial Renovation are found in table 2, below.

C. Regulation of Shade and Radical Pruning

When the following conditions exist, technification can be achieved through reduction of shade and improved pruning:

1. Improved coffee variety
2. Adequate plant population (2,500-3,300 plants/mz.)
3. Excessive shade
4. Overgrown plants
5. Little or no use of inputs
6. Yields averaging between 12-18 quintales per hectare.

All that is needed here is a reduction in the shade, radical pruning (recepta) to return plants to a productive stage of growth, and improved fertilization and pest control. As in partial renovation, the overgrown coffee trees which are pruned back (recepta) will be out of production for one to two years. This pruning can be done by row or by lot. No interplanting is required because the plant density is adequate.

D. Regulation of Shade and Improved Management

Whereas all of the previous schemes have required either a removal of plants or radical pruning, which causes a temporary loss of production, there are also farmers whose conditions are good enough that technification would not imply an immediate loss in production. These conditions are:

1. Improved coffee variety
2. Adequate plant population
3. Excessive shade
4. Young and productive plants

5. Little or no use of agricultural inputs
6. Yields averaging 15-22 quintales per hectare

In this case, the farmer has planted an adequate density of improved variety coffee, but has not reduced the shade canopy sufficiently, and is not fertilizing and controlling weeds or pests adequately. In addition to shade reduction and improved plant management, he would begin a program of cyclical pruning when the plants grow to a point of diminishing productivity.

6. Adoption and Impact of Technification Models

The four schemes, above, illustrate different basic responses possible under varying conditions. As mentioned, these schemes are taken from a continuum of possibilities based upon certain agronomic principles. Individual farmers' responses will be determined by their own needs and judgements as to cost effectiveness. Most farmers will, moreover, adopt a variety of technification schemes, setting aside one parcel of land for total renovation, interplanting on another, and/or pruning on another. It will be through the farmer's own variety of experiments that his initial risk will be minimized and he will arrive at a technical scheme which maximizes profit for him under his individual resource constraints. To simplify the technical and financial analysis, however, two models will be chosen, and it will be assumed that each farmer adopts only one model, and that he follows that model exactly.

A. Selection of Models for Project Use

Before evaluating the farmers' adoption of the above models, it is useful to consider them in light of the Project's objectives. The four models represent the gamut of conditions which the extension agents will find in farms that need to be technified. It is not necessary that all of these models be adopted in the Project.

Model D should clearly be eliminated because it assumes a yield, prior to technification, too high for inclusion in the Target Group. In this case, the farmer is producing between 15 and 20 quintales per hectare, short of the yields obtained on a fully technified farm, but high enough that he is probably already able to afford rust control or lacks very little to raise his productivity to a point where he can. Moreover, the farmers' investment is only short run in this model, not requiring the temporary elimination of production or planting of new plants. He can obtain short run credit through other channels.

Model C represents a farmer who has taken similar steps as the farmer in Model D, but whose plants are overgrown, or in bad enough condition to require that he prune them back radically to return them to productivity. This farmer will need medium term credit because he must temporarily eliminate production. His productivity may not be high enough that he can afford rust control, and he may be within the Target Group. This model is not considered

in the technical and financial analysis, though, because it is not considered representative of a significant number of farmers. Here the farmer has taken the two principle steps to technification - planting at a high density for adequate foliar area and using an improved variety. This identifies him as a farmer who is receiving some type of technical assistance, but who has not followed a technification scheme well enough to achieve the high yields. While this represents an agronomic possibility, and such farmers may well be assisted directly or indirectly by the AID project, there are not considered to be enough such farmers for inclusion as a separate model.

Model A and B then represent virtually all the conditions to be dealt with in the Project. Both represent farmers with yields too low to permit economically viable rust control, and both will need medium term credit to make the necessary changes in their farms.

B. Adoption of Total and Partial Renovation

The rate at which farmers adopt one or the other model will depend upon several factors, primarily: i) agronomic conditions, ii) his financial ability to remove land from production, and iii) the presence of coffee rust. As mentioned above, the most common situation will be the adoption of a variety of techniques. The great majority of farmers who adopt total renovation will do so only on a relatively small parcel of land in order to test productive response and potential economic return, or simply to limit financial losses in the renovation period. Many of these will introduce some degree of partial renovation at the same time, and will leave remaining production unchanged. Likewise, those farmers who do not adopt total renovation still, will probably adopt a variety of partial renovation techniques.

The principal agronomic factor which will determine whether a farmer is going to remove his old coffee plants to initiate total renovation will be the condition of the existing plant. If a significant number are young and of an improved variety, he will be reluctant to totally renovate that land. An IHCAFE study in Santa Barbara and Copan indicates that about 70% of small coffee farmers have some improved variety coffee plants, and about 80% practice regular repopulation. This would indicate that a significant number of farmers have coffee plants that they will consider worth saving. Other agronomic factors, such as the condition and type of shade trees or the pattern of the coffee plants (random, in rows, etc.) may indicate that total renovation is the best solution, and still others such as slope of land may indicate partial renovation.

When agronomic factors are not clearly indicative of one or another of the models, the farmer may make his decision based upon his financial ability to remove land from production. Generally, total renovation will only be initiated on a small parcel of a farmers' total production. It is unlikely that a farmer will be willing to either forgo all (or most) of his income, or to rely entirely upon on unknown (to him) technology. It is for this reason that farmers with less than one hectare are not good candidates

for technifications; and, probably, farmers with more than five hectares are more likely to totally renovate (some portion of their land) than are farmers with fewer than five hectares. About 87% of the target group farmers have fewer than five hectares and about 13% have more than five hectares.

Finally, the factor which makes the farmers' response most difficult to predict is the presence or absence of coffee rust in his vicinity. If rust is actually infecting his plants or is perceived as an immediate threat, he is more likely to remove the plants and take the most drastic technification measures. Subjective evidence indicates a high degree of concern about coffee rust on the part of coffee producers. This is not a quantitative measure, nor is the degree of spread of rust measurable at present (during the dry season). Generally, however, the immediacy of the rust threat increases the probability of total renovation slightly, and would tend to predict an increasing percentage of total renovation over time as rust spreads.

Based upon the agronomic conditions and the distribution of farm sizes, it is estimated that 20% of land will be totally renovated, and 80% will be partially renovated.

C. Design of Specific Model Activities and Cost

For the analysis of resource constraints, economic return, and credit fund management, it will be necessary to assign specific agronomic activities and costs to each of the above models. As the models become even more narrow, the potential for misunderstanding their significance increases. The models are not a formula for application in the field. They are, instead, a representation of what IHCAFE technicians consider to be agronomically complete programs of total and partial renovation. They include all costs of a technically sound production program, including all costs of marketing and processing the harvested coffee. It is possible that all farmers will not adopt all of these steps. It is not possible, however, to eliminate steps a priori, and to predict the production response to the less complete model, and it would be misleading to do so. The ensuing analysis will be best served by representing the agronomic models as those which are considered complete and correct by IHCAFE (and most other) technicians. The economic analysis will, then, treat the question of what happens in those cases where the models are not followed completely.

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	ADUMENTO DE 5% ANUAL
ANO 3							
Costo de Mantenimiento						1.380.00	1.449.00
Mas:							
Cosecha		qq.	15	22.00	330.00		
Transporte y Beneficiado		qq.	15	13.00	195.00	525.00	551.00
TOTAL ANO 3						<u>1.905.00</u>	<u>2.000.00</u>
ANO 4							
Costo de Mantenimiento						1.449.00	1.521.00
Mas:							
Cosecha		qq.	35	22.00	770.00		
Transporte y Beneficiado		qq.	35	13.00	455.00	1.225.00	1.286.00
TOTAL ANO 4						<u>2.674.00</u>	<u>2.807.</u>
ANO 5							
Costo de Mantenimiento						1.449.00	1.521.00
Mas:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00	1.575.00	1.654.00
TOTAL ANO 5						<u>3.096.00</u>	<u>3.251.00</u>

ACTIVIDAD	EPOCA	UNIDAD	DÍAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	ALUMENTO DE 5% ANUAL
ANO 6							
Costo de Mantenimiento						1.597.00	1.677.00
Mas:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00		
Poda		Jorn.	17	5.00	85.00	1.660.00	1.743.00
TOTAL ANO 6						<u>3.257.00</u>	<u>3.420.00</u>
ANO 7							
Costo de Mantenimiento							
Mas:							
Cosecha		qq.	40	22.00	880.00		
Transporte y Beneficiado		qq.	40	13.00	520.00		
Poda		Jorn.	17	5.00	85.00	<u>1.485.00</u>	<u>1.559.00</u>
TOTAL ANO 7						3.490.00	3.665.00

ANNEX I

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ESQUEMA No. 2 RENOVACION PARCIAL (RECEPA, REPOBLACION Y MANEJO DE PLANTACION: 3.333 pl/Mz.)

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	AUMENTO DE 5% ANUAL
ANO 2							
<u>MANTENIMIENTO</u>							
Fertilizacion							
Mano de obra	jul.ag. nov.	Jorn.	34	5.00	170.00		
Materiales							
Fert. al suelo		qq.	13	32.00	416.00		
Foliares		Lts.	9	8.00	72.00	658.00	
Control plagas y enf.							
Mano de obra	J.J.A.S.O.N.	Jorn.	20	5.00	100.00		
Materiales							
Fungicidas		Kgs.	19.5	9.00	195.00		
Insecticidas		Lts.	3	20.00	60.00		
Adherentes		Lts.	3	8.00	24.00	379.00	
Control mecanico de maleza							
Mano de obra	ag.nov. dic.	Jorn.	30	5.00	150.00	150.00	
Control quimico de maleza							
Mano de obra	mayo	Jorn.	6	5.00	30.00		
Materiales							
Herbicidas		Galon	0.5	75.00	37.50	67.50	
Herramientas							
							1.314.00
Cosecha		qq.	10.0	22.0	220.00		
Transporte y Benef.		qq.	10.0	13.0	130.00	<u>350.00</u>	
TOTAL ANO 2						<u>1.747.00</u>	

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	AUMENTO DE 5% ANUAL
ANO 1							
<u>ESTABLECIMIENTO</u>							
Poda (recepa)		Jorn.	30	5.00	150.00		
Trazado							
Ahoyado		Planta	2.300	0.06	138.00		
Siembra							
Valor vivero		Planta	2.300	0.40	920.00		
Regulacion sombra		Jorn.	10	5.00	50.00	1.258.00	
<u>MANTENIMIENTO</u>							
Control Maleza							
Mano de obra	jul.ag. nov.en.	Jorn.	32	5.00	160.00	160.00	
Fertilizacion							
Mano de obra	ag. dic.	Jorn.	11	5.00	55.00		
Materiales							
Fert. al suelo		qq.	8.5	32.00	272.00	327.00	
Foliares							
Control de plagas y enf.							
Mano de obra	jun. jul. ag.sep.	Jorn.	8	5.00	40.00		
Materiales							
Fungicida		Kg.	3.6	10.00	36.00		
Insecticida		Lts.	2	20.00	40.00		
Adherentes		Lts.	2	8.00	16.00	132.00	
Herramientas						<u>60.00</u>	
TOTAL ANO 1						<u>1.937.00</u>	

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	AUMENTO DE 5% ANUAL
ANO 3							
Costo de Mantenimiento						1.314.00	1.380.00
Mas:							
Cosecha		qq.	25	22.00	550.00		
Transporte y Beneficiado		qq.	25	13.00	325.00	875.00	919.00
TOTAL ANO 3						<u>2.819.00</u>	<u>2.299.00</u>
ANO 4							
Costo de Mantenimiento						1.380.00	1.449.00
Mas:							
Cosecha		qq.	35	22.00	770.00		
Transporte y Beneficiado		qq.	3	13.00	445.00	1.225.00	1.286.00
TOTAL ANO 4						<u>2.605.00</u>	<u>2.735.00</u>
ANO 5							
Costo de Mantenimiento						1.449.00	1.521.00
Mas:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00	1.575.00	1.654.00
TOTAL ANO 5						<u>3.024.00</u>	<u>3.175.00</u>
ANO 6							
Costo de Mantenimiento						1.521.00	1.597.00
Mas:							
Cosecha		qq.	45	22.00	990.00		
Transporte y Beneficiado		qq.	45	13.00	585.00		
Poda		Jorn.	17	5.00	85.00	1.660.00	1.743.00
TOTAL ANO 6						<u>3.181.00</u>	<u>3.340.00</u>

ACTIVIDAD	EPOCA	UNIDAD	DIAS/ACT. USO/UNID.	COSTO/JORNAL O UNID. LPS.	SUBTOTAL LPS.	TOTAL POR LPS.	AUMENTO DE 5% ANUAL
ANO 7							
Costo de Mantenimiento						1.597.00	1.677.00
Mas:							
Cosecha		qq.	40	22.00	880.00		
Transporte y Beneficiado		qq.	40	13.00	520.00		
Poda			17	5.00	85.00	1.485.00	1.559.00
TOTAL ANO 7						<u>3.082.00</u>	<u>3.398.00</u>

D. Estimating the Impact of the Technification Models

Estimating the production that can be expected from a technification program is somewhat difficult. There are at least three good measures that can be used: yields actually achieved by farmers who have technified, yields achieved under experimental conditions, and average yields in areas which have undergone a technification program. Each has different implications. The last is probably the most accurate indication of what will occur in the aggregate, but does not indicate what is happening at the farm level. The first two indicate what can be expected as an agronomic response, but do not reflect aggregate economic and social conditions which will eventually deter some farmers from being successful in technifying and will lower the average productivity. Again, the economic analysis will examine the question of farmers who are unsuccessful in technifying or who chose not to follow all steps. The problem here is to assign a value to the expected physical response from the chosen models.

For the purposes of predicting the expected yields for the proposed technification models, the experimental yields (up to 120 quintales per hectare in Costa Rica) are considered only as an example of the range of possibility. Actual yields under farm conditions in Honduras, on technified farms, range from 40 to 80 quintales per manzana. The Costa Rican average, however, for technified regions is closer to 25 to 30 quintales per manzana. Again, the regional average represents an aggregate response to a variety of "technification" schemes. The expected response to the complete models proposed will be somewhat higher. If a farmer follows all of the steps indicated, he should obtain a yield of, at least, 40 quintales per manzana.

Another way of evaluating the expected yields to the models is simply to break down the response into response to increased number of plants and response to higher productivity per plant. A population of 1,400 plants which yields 8 quintales (Model A) is averaging .57 lbs./plant. A population of 2,000 which yields 12 quintales (Model B) is averaging .60 lbs./plant. A technified farm with 3,300 plants which yields 40 quintales is producing 1.20 lbs./plant. All improved cultivation practices, including use of an improved variety, pruning, increased sunlight, fertilization, and reduction of post damage would need only to account for a doubling of yield per plant (or .6 lb.per plant) to achieve the 40 quintales. This is a reasonable and conservative expectation.

7. Technical Constraints to the Adoption of the Proposed Technology

The technical constraints to a successful program of technification and rust control are: i) labor, ii) new coffee plants, iii) agricultural inputs, and iv) water. None of them presents a serious problem for this Project.

A. Labor

Total renovation will require 189 man days of labor for the process of establishing one manzana (See Model I). The work will begin immediately after harvest (Dec.-Feb.) and last until May. If a farmer totally renovates two manzanas and family labor is half of the total, then he would need to hire day laborers to make up 189 days. Since the work could easily be done over a 90 work day period, the farmer would be hiring the equivalent of two full time laborers. In most areas, migrant workers handle the coffee harvest and then return to their own land to plant subsistence crops. It should be possible to hire a small percentage of these laborers for an extra three months, without seriously hindering their subsistence enterprises. Estimating that 600 participant farmers will totally renovate two manzanas over a three year period (see Economic Analysis), the total labor demand would be about 400 laborers per year (i.e., 200 farms x 2 laborers), as compared to an estimated labor supply of 167,000 harvest-laborers (1973 census estimate).

Partial renovation will require only 40 man days of labor per manzana for the process of establishment (pruning and planting), again during the period immediately after harvest. If there is a relative labor shortage in any area, a farmer would be able to rely on family labor alone to partially renovate two manzanas. However, estimating that each farmer would hire a day laborer for 40 days to partially renovate two manzanas, project activities would create a demand for about 355 additional men per year (800 farms per year, 40 days work per farm, 90 days work per man). Again, this is a small percentage of the labor force which is available after harvest.

Labor requirements for maintenance activities is approximately 90 days per manzana over a six month period. This would most likely be done by the farmer himself or by a regular employee, and would not create a substantial demand for outside labor.

B. New Coffee Plants

Estimating that 600 farmers totally renovate and 2,400 partially renovate over a three year period, the number of new plants needed for the Project will be approximately 5 million per year. These will be of improved Caturra or Pacas variety. IHCAFE has a program of plant multiplication by cooperator farmers under the strict direction of Research personnel. This program will be expanded significantly in April/May 1981 to create an adequate supply for the first Project year. The farmers will be extended credit through the Project credit fund to produce the seed beds and grow plants at an approximate cost of \$.14 per plant, which will be sold at \$.20, for a 6 cent per plant profit. To reach the goal of 5 million plants, IHCAFE will need to enlist the services of about 50 farmers, each growing 100,000 plants (in an area 50 mts. x 50 mts.). IHCAFE's commitment to the program, the availability of credit, and the potential for a profit should ensure an adequate supply of high quality plants.

While the supply of improved variety plants is a crucial element to beginning the technification program, a failure to meet the full demand for new plants in any one year will not be detrimental to participant farmers, it will only delay implementing the program. That is, farmers will not begin land clearing or pruning unless they have a certain supply of plants. If the plants are not available, the farmer will begin technification the following year. This is not desirable, nor is it likely to occur, but it leaves the farmer no worse off. Moreover, once the farmer has completed technification, he is not dependent upon a continued supply of plants.

C. Fertilizer and Pesticides

The principal constraint relating to agricultural inputs is the need for farmers to learning their proper use. Supplying them to the participant farmer will not be as difficult. Herbicides, insecticides, and fungicides are available through commercial outlets, including BANADESA, in all coffee producing areas. Copper oxichloride (rust fungicide) will be made available by IHCAFE, as needed for rust control. The size of these items does not restrict their easy transport from towns to farms. Again, the principal constraint is learning their proper use, and that will be accomplished through the Extension Program.

The dependable and timely supply of fertilizer to participant farmers is crucial both for initiating technification and for continued production. Because of the importance of correct application, fertilizers will be supplied by IHCAFE directly to the farmer. The farmer will receive credit for recommended formulas as part of his credit package, and will take delivery of the fertilizer from the nearest IHCAFE warehouse. Farmers will need, at most, 13 quintales of fertilizer per manzana. This would mean a total demand for 26,000 quintales of fertilizer per year by Project participants, which represents less than 10% of what IHCAFE is currently distributing (over 300,000 quintales through over 25 warehouses in 8 regions).

D. Water

Water is essential for spraying insecticides and fungicides, and many farms do not have water accessible to the coffee plants. The solution in those cases will be to capture rainwater. The primary concern is having water for rust control. Rust control sprays are done in the six rainy months, requiring approximately 570 liters per manzana per month. To capture that amount of water, the farmer would need a roof of between 2 and 4 square meters (depending on rainfall), a few meters of gutter and pipe, and a barrel or hole for collecting the water. IHCAFE extensionists will teach the construction of simple water capture structures.

TABLE No. 1

Financial Rate of Return - Total Renovation
(U.S. Dollars)

YEAR	Costs		Value of Production(b)		Income w/o Project(a)		Net Benefits without Rust(b)		Net Benefits with Rust (b)		
	Investment	Maintenance	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
1	1,647	--	--	--	200	60	(1,847)	(1,702)	(1,647)	(1,647)	
2	657	--	--	--	200	60	(857)	(717)	(657)	(657)	
3		919	1,050	750	200	60	(69)	(229)	131	(169)	
4		1,269	2,45	1,750	200	60	981	421	1,181	481	
5		1,444	3,150	2,250	200	60	1,506	746	1,706	806	
6		1,444	3,150	2,250	200	50	1,506	746	1,706	806	
7		1,400	2,800	2,000	200	60	1,200	560	1,400	620	
8		1,269	2,450	1,750	200	60	981	421	1,181	481	
to 20		1,269	2,450	1,750	200	60	<u>981</u>	<u>421</u>	<u>1,181</u>	<u>481</u>	
							IRR	27%	14%	36%	17%

Source: Cost and Production values from IHCAFE Renovation Models, Annex I, Technical Feasibility, yields average 35 qq./m2 after year 7.

(a) Current income calculated as 7 quintales production, with production costs of \$290/manzana (IHCAFE estimate).

(b) Column (1): is calculated based upon current farmgate price of \$70/qq.
Column (2): is calculated based upon a price of \$50/qq.

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TABLE No. 2

Financial Rate of Return - Partial Renovation
(U.S. Dollars)

YEAR	Costs		Value of Production(b)		Income w/o Project(a)		Net Benefits without Rust(b)		Net Benefits with Rust (b)		
	Investment	Maintenance	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	
1	969	--	--	--	200	60	(1,169)	(1,029)	(969)	(969)	
2		832	700	500	200	60	(332)	(392)	(132)	(332)	
3		1,094	1,750	1,250	200	60	456	96	656	156	
4		1,269	2,450	1,750	200	60	981	421	1,181	481	
5		1,444	3,150	2,250	200	60	1,506	746	1,706	806	
6		1,444	3,150	2,250	200	60	1,506	746	1,706	806	
7		1,400	2,800	2,000	200	60	1,200	540	1,400	600	
8		1,269	2,450	1,750	200	60	981	421	1,181	481	
to 20		1,269	2,450	1,750	200	60	<u>981</u>	<u>421</u>	<u>1,181</u>	<u>481</u>	
							IRR	47%	26%	64%	31%

Source: Cost and Production values from IHCAFE Renovation Models, Annex I, Technical Feasibility, yields average 35 qq./m2 after year 7.

- (a) Current income calculated as 7 quintales production, with production costs of \$290/manzana (IHCAFE estimate). (See Table 9)
- (b) Column (1): is calculated based upon current farmgate price of \$70/qq. Column (2): is calculated based upon a price of \$50/qq.

TABLE 3

CASH FLOW - TOTAL RENOVATION - 100% FINANCING
(U.S. DOLLARS)
APPLICATION OF INCOME TO:

<u>Year</u>	<u>Value of Production</u>	<u>Investment Credit</u>		<u>Production Credit</u>		<u>BALANCE</u>			
		<u>Capital</u>	<u>Interest</u>	<u>Capital</u>	<u>Interest</u>	<u>Investment Credit Capital</u>	<u>Interest</u>	<u>Production Credit Capital</u>	<u>Interest</u>
1	-	-	-	-	-	1,647	230	-	-
2	-	-	-	-	-	2,337	558	-	-
3	1,072	-	-	932	140	2,337	884	135	-
4	2,502	-	826	1,471	206	2,337	386	-	-
5	3,363	798	713	1,625	423	1,540	-	-	-
6	3,363	1,198	215	1,710	440	341	-	-	-
7	3,120	341	48	1,660	432	839 CR.	-	-	-

CASH FLOW - PARTIAL RENOVATION - 100% FINANCING
(U.S. DOLLARS)
APPLICATION INCOME TO:

<u>Year</u>	<u>Value of Production</u>	<u>Investment Credit</u>		<u>Production Credit</u>		<u>BALANCE</u>			
		<u>Capital</u>	<u>Interest</u>	<u>Capital</u>	<u>Interest</u>	<u>Investment Credit Capital</u>	<u>Interest</u>	<u>Production Credit Capital</u>	<u>Interest</u>
1	-	-	-	-	-	969	135	-	-
2	650	-	-	527	122	969	270	346	-
3	1,788	22	455	1,150	161	946	-	-	-
4	2,503	862	81	1,367	191	83	-	-	-
5	3,363	83	12	1,625	228	1,415 CR.	-	-	-

Source Informe Sobre un Posible Programa de Credito Para el Mejoramiento de Cafetales de Pequeños Agricultores de Honduras..., Servicios Tecnicos del Caribe, 1981.

Table 4

SMALL FARMER COFFEE IMPROVEMENT
Investment Credit Fund - Projected Cash Flow
(U.S. Dollars)

	Y E A R S														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sources of Cash:															
Cash Balance-Begin.	-	50	133	307	734	528	143	113	287	196	176	50	41	23	67
Seed Capital-AID	1,000	2,500	2,000	2,000	500	-	-	-	-	-	-	-	-	-	-
Seed Capital-GOH	-	350	300	300	50	-	-	-	-	-	-	-	-	-	-
Princ. Reflows	-	-	-	190	422	842	1,270	1,554	1,672	1,444	1,324	1,220	1,284	1,324	1,504
Int. Received	----	123	487	786	1,060	1,201	1,300	1,356	1,387	1,417	1,476	1,551	1,614	1,681	1,743
Total Sources	<u>1,000</u>	<u>3,023</u>	<u>2,920</u>	<u>3,583</u>	<u>2,766</u>	<u>2,571</u>	<u>2,713</u>	<u>3,023</u>	<u>3,059</u>	<u>3,057</u>	<u>2,976</u>	<u>2,821</u>	<u>2,939</u>	<u>3,028</u>	<u>3,114</u>
Uses of Cash:															
Subloans made	950	2,800	2,300	2,300	1,500	1,600	1,700	1,800	1,900	1,900	1,900	1,700	1,800	1,800	1,900
Interest to GOH	-	20	70	122	164	184	200	208	214	218	228	240	248	258	268
Admin. Costs															
BANRAL	-	10	35	61	82	92	100	104	107	109	114	120	124	120	134
IHCAFE	-	30	104	183	246	276	300	312	321	327	342	360	372	387	402
Admin. Costs ICI's	-	30	104	183	246	276	300	312	321	327	342	360	372	387	402
Cash Balance -End.	50	133	307	734	528	143	113	287	196	176	50	41	23	67	8
Total Uses	<u>1,000</u>	<u>3,023</u>	<u>2,920</u>	<u>3,583</u>	<u>2,766</u>	<u>2,571</u>	<u>2,713</u>	<u>3,023</u>	<u>3,059</u>	<u>3,057</u>	<u>2,976</u>	<u>2,821</u>	<u>2,939</u>	<u>3,028</u>	<u>3,114</u>

TABLE 5
SMALL FARMER COFFEE IMPROVEMENT PROJECT
INVESTMENT CREDIT FUND - PROJECTED SUB-LOAN PORTFOLIO ACTIVITY
(U.S. \$ 000)

	YEARS															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Loan Portfolio - Beg.	-0-	950	3750	6050	8160	9238	9997	10427	10673	10901	11357	11933	12413	12929	13405	
Sub-Loans Made	950	2800	2500	2500	1500	1600	1700	1800	1900	1900	1900	1700	1800	1800	1900	
Interest Chared	-0-	133	525	847	1142	1293	1400	1460	1494	1526	1590	1671	1738	1810	1877	
Subtotal	950	3883	6575	9197	10802	12131	13097	13687	14067	14327	14847	15304	15951	16539	17182	
Less:																
Principal Repayments	-0-	-0-	-0-	190	750	1210	1570	1970	2100	1880	1780	1700	1780	1810	1840	
Principal Uncollectable	-0-	-0-	-0-	-0-	(528)	(369)	(400)	(416)	(428)	(436)	(456)	(480)	(496)	(516)	(536)	
Interested Fayments	-0-	123	487	786	1060	1201	1300	1356	1387	1417	1476	1551	1614	1681	1743	
Interested Uncollected	-0-	10	38	61	82	92	100	104	107	109	114	120	124	129	134	
Loan Portfolio - End	950	3750	6050	8160	9238	9997	10427	10673	10901	11357	11933	12413	12929	13405	14001	

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TABLE 6

SMALL FARMER COFFEE IMPROVEMENT PROJECT
AMORTIZATION OF TOTAL OF SUBLOANS MADE BY YEAR
(US\$000)

SUB-LOANS MADE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
YEARS															
1	950			190	190	190	190	190							
2	2800				560	560	560	560	560						
3	2300					460	460	460	460	460					
4	2300						460	460	460	460	460				
5	1500							300	300	300	300	300			
6	1600									320	320	320	320		
7	1700									340	340	340	340	340	
8	1800										360	360	360	360	360
9	1900											380	380	380	380
10	1900												380	380	380
11	1900													380	380
12	1700														340
13	1800														
14	1800														
15	1900														
Total Payable				190	750	1210	1670	1970	2100	1880	1780	1700	1780	1840	1840
Uncollectable				-0-	(328)	(368)	(400)	(416)	(428)	(436)	(456)	(480)	(496)	(516)	(536)
Total Collectable				190	422	842	1270	1554	1672	1444	1324	1220	1284	1324	1304

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TABLE 7

SMALL FARMER COFFEE IMPROVEMENT PROJECT
ESTIMATED OF PRODUCTION CREDIT NEEDED BY AFFECTED FARMERS
(Lempiras)

YEAR	ANNUAL PROD COST		WEIGHTED ANNUAL PROD. COSTS		ANNUAL PROD. COSTS		WEIGHT ANNU. PROD. COST PAR-		AVERAGE NEW	CUMULATIVE MANZANAS BY PROJ. YEAR	(L. 000) • (US \$000)	
	FULL RENOV.	% OF PROJ.	FULL RENOV.	PARTIAL RENOV.	% OF PROJ.	TIAL RENOV.	PROJECT	MANZANAS IN PROJ. YEAR	ESTIMATED OF NEEDS OF PROD. CREDIT		ESTIMATED OF NEEDS OF PROD. CREDIT.	
1	-0-	20	-0-	-0-	80	-0-	-0-	766	766	-0-	-0-	
2	-0-	20	-0-	1747	80	1398	1398	1979	2745	3838	1919	
3	2000	20	40	2299	80	1839	2239	1426	4171	9339	4670	
4	2807	20	561	2735	80	2188	2749	1251	5422	14905	7453	
5	3251	20	650	3175	80	2540	3190	716	6138	19580	9790	
6	3240	20	648	3340	80	2672	3320	670	6808	22603	11302	
7	3320	20	664	3236	80	2589	3253	624	7432	24176	12088	
8	3486	20	697	3398	80	2718	3415	580	8012	27361	13681	
9	3660	20	732	3568	80	2854	3586	537	8549	30657	15329	
10	3843	20	769	3746	80	2997	3766	471	9020	33969	16985	
11	4035	20	807	3933	80	3146	3953	413	9433	37289	18645	
12	4237	20	847	4130	80	3304	4151	324	9757	40501	20251	
13	4449	20	890	4337	80	3470	4360	301	10058	43853	21924	
14	4671	20	934	4554	80	3643	4577	264	10322	47244	23622	
15	4905	20	981	4782	80	3826	4807	245	10567	50796	25398	

TABLE 8
INTERNAL RULE OF RETURN TO PROJECT
(U.S. DOLLARS)

Year	Project Costs	# of Manzanas		Net Benefits-Partial (with rust)a/		Net Benefits-Total (with rust)b/		Net Project Benefits (with rust)		
		Partial	Total	(1)	(2)	(1)	(2)	(1)	(2)	
1	1,268	613	153	(594)	(594)	(252)	(252)	(2,114)	(2,114)	
2	1,278	1,583	396	(1,615)	(1,737)	(752)	(752)	(3,645)	(3,767)	
3	1,215	1,140	286	(912)	(1,534)	(711)	(757)	(2,838)	(3,506)	
4	996	1,000	251	644	(805)	(369)	(595)	(721)	(2,396)	
5	472	573	143	2,976	546	364	(135)	2,868	(61)	
6				5,072	2,284	1,213	444	6,285	2,728	
7				7,060	3,133	1,691	540	8,751	3,673	
8				7,267	3,245	1,819	819	9,086	4,064	
9				6,873	3,008	1,718	757	8,591	3,765	
10				6,317	2,666	1,579	671	7,896	3,337	
11				5,923	2,429	1,480	609	7,403	3,038	
12				5,797	2,360	1,449	590	7,246	2,950	
to 20				5,797	2,360	1,449	590			
								IRR	38%	21%

a/ from Table 2, multiplied by number of manzanas

b/ from Table 1, multiplied by number of manzanas

Column (1) is based upon a farmgate price of \$ 70.00

Column (2) is based upon a price of \$ 50.00

TABLE No. 9
Operating Costs - Traditional Farm
(1980 prices - US Dollars)

	Without Spraying (No Rust)	With Spraying (Rust)
Pest & Disease Control		
Labor	--	30
Materials (fungicide)	--	58
Weed Control	50	50
Shade Control, Prining and Replanting	4	4
Fuel	--	6
Equipment	18	38
Harvest, Transport, and Processing of Crops (7 quintales)	218	218
T O T A L	290	404
	===	===

Source: IHCAFE: Estimacion del Impacto Economico de la Roya del Cafeto en Honduras, 1980

TABLE 10

SMALL FARMER COFFEE IMPROVEMENT PROJECT
 COMPUTATION OF MANZANAS AFFECTED BY INVESTMENT
 CREDIT FUND IN 15 YEARS (INVESTMENT INFLATED BY 14%/YR
 (US\$))

YEAR	INFLATED AVERAGE INVESTMENT PER MANZANA	INVESTMENT CREDIT AVAILABLE	AVERAGE MANZANAS AFFECTED
1	1,241	\$ 950,000	766
2	1,415	2,800,000	1,979
3	1,613	2,300,000	1,426
4	1,839	2,300,000	1,251
5	2,096	1,500,000	716
6	2,389	1,600,000	670
7	2,723	1,700,000	624
8	3,104	1,800,000	580
9	3,539	1,900,000	537
10	4,034	1,900,000	471
11	4,599	1,900,000	413
12	5,243	1,700,000	324
13	5,977	1,800,000	301
14	6,814	1,800,000	264
15	<u>7,768</u>	<u>1,900,000</u>	<u>245</u>
		\$ 27,450,000	<u>10,567</u>

FINANCIAL PLAN TABLES

SMALL FARMER COFFEE IMPROVEMENT
DISTRIBUTION OF IN KIND AND IN CASH
GOH FUNDS
(\$ 000)

<u>Description</u>	<u>In Kind</u>		
<u>In Cash</u> <u>Total</u>			
<u>Personnel</u>			
Extension Agents	586	179	765
Credit Agents	-	382	382
Support Personnel	239	-	239
Sub-Total	<u>825</u>	<u>561</u>	<u>1,386</u>
<u>Training</u>			
Abroad	-	12	12
<u>Office Equipment</u>	-	7	7
<u>Operating Cost</u>			
Office Supplies	-	50	50
Per Diem:			
Extension Agents	138	42	180
Credit Agents	-	90	90
Vehicles Operation and Maintenance:			
Diesel	140	113	253
Maintenance	169	112	281
Sub-Total	<u>447</u>	<u>407</u>	<u>854</u>
Credit Fund Administration	-	2,200	2,200
Contingency and Inflation 10%	-	220	220
T O T A L	<u>1,272</u>	<u>3,407</u>	<u>4,679</u>

SMALL FARMER COFFEE IMPROVEMENT
FINANCIAL PLAN
GOH FUNDS
(U.S. DOLS.)

<u>DESCRIPTION</u>	<u>C A L E N D A R Y E A R S</u>						<u>TOTAL</u>
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
<u>Technical Support</u>							
Personnel	39,150	170,100	292,500	353,700	353,700	176,850	1,386,000
Training	-	6,000	6,000	-	-	-	12,000
Operating Cost	14,100	98,800	159,100	232,000	232,000	118,000	854,000
Office Equipment	6,975	-	-	-	-	-	6,975
Sub-Total	<u>60,225</u>	<u>274,900</u>	<u>457,600</u>	<u>585,700</u>	<u>585,700</u>	<u>294,850</u>	<u>2,258,975</u>
<u>Credit Activity</u>							
Credit Fund	-	350,000	300,000	300,000	50,000	-	1,000,000
Credit Administration 15%	-	150,000	375,000	300,000	300,000	75,000	1,200,000
Sub-Total	<u>-</u>	<u>500,000</u>	<u>675,000</u>	<u>600,000</u>	<u>350,000</u>	<u>75,000</u>	<u>2,200,000</u>
Contingency & Inflation 10%	-	27,490	45,760	58,570	58,570	29,485	219,875
TOTAL	<u>60,225</u>	<u>802,390</u>	<u>1,178,360</u>	<u>1,244,270</u>	<u>994,270</u>	<u>399,335</u>	<u>4,678,850</u>

SMALL FARMER COFFEE IMPROVEMENT
FINANCIAL PLAN
A.I.D. FUNDS
(U.S. DOLS.)

	CALENDAR YEARS						TOTAL
	1981	1982	1983	1984	1985	1986	
<u>Technical Support</u>							
Technical Assistance	32,000	192,000	176,000	80,000	-	-	480,000
Training	-	108,120	87,120	63,360	-	-	258,600
Vehicles and Equipment	-	256,000	-	-	-	-	256,000
Publications & Broadcast	-	21,600	21,600	21,600	21,600	21,600	108,000
Demonstration Lots	-	28,044	56,088	56,088	-	-	140,220
Evaluation and Audit	-	15,000	40,000	15,000	15,000	40,000	125,000
Operating Cost	3,500	10,000	9,000	9,000	9,000	4,000	44,500
Sub-Total	<u>35,500</u>	<u>630,764</u>	<u>389,808</u>	<u>245,046</u>	<u>45,600</u>	<u>65,600</u>	<u>1,412,320</u>
<u>Credit Activity</u>							
Credit Fund	-	1,000,000	2,500,000	2,000,000	2,000,000	500,000	8,000,000
Contingency & Inflation 10%	-	63,076	38,980	24,504	4,560	6,560	137,680
TOTAL	<u><u>35,500</u></u>	<u><u>1,693,840</u></u>	<u><u>2,928,788</u></u>	<u><u>2,269,552</u></u>	<u><u>2,050,160</u></u>	<u><u>572,160</u></u>	<u><u>9,550,000</u></u>

SMALL FARMER COFFEE IMPROVEMENTS
SUPPORT PERSONNEL
GOH FUNDS
(U.S. DOLS.)

Description		1981	1982	1983	1984	1985	1986	TOTAL
<u>Central Office Personnel</u>	<u>P/M</u>	6 months	12 months	12 months	12 months	12 months	6 months	
1 Project Coordinator	2,000	12,000	24,000	24,000	24,000	24,000	12,000	120,000
1 Administrator	500	3,000	6,000	6,000	6,000	6,000	3,000	30,000
2 Secretary	300	3,600	7,200	7,200	7,200	7,200	3,600	36,000
1 Accountant	400	2,400	4,800	4,800	4,800	4,800	2,400	24,000
1 Bookkeeper	250	1,500	3,000	3,000	3,000	3,000	1,500	15,000
1 Messenger-Driver	150	900	1,800	1,800	1,800	1,800	900	9,000
1 Janitor	75	450	900	900	900	900	450	4,500
		<u>23,850</u>	<u>47,700</u>	<u>47,700</u>	<u>47,700</u>	<u>47,700</u>	<u>23,850</u>	<u>238,500</u>
<u>Field Personnel</u>								
Extension Agents (40)	425	10,200	81,600	163,200	204,000	204,000	102,000	765,000
Credit Agents (20)	425	<u>5,100</u>	<u>40,800</u>	<u>81,600</u>	<u>102,000</u>	<u>102,000</u>	<u>51,000</u>	<u>382,500</u>
		15,300	122,400	244,800	306,000	306,000	153,000	1,147,500
		<u>39,150</u>	<u>170,100</u>	<u>292,500</u>	<u>353,700</u>	<u>353,700</u>	<u>176,850</u>	<u>1,386,000</u>
TOTAL PERSONNEL		<u>39,150</u>	<u>170,100</u>	<u>292,500</u>	<u>353,700</u>	<u>353,700</u>	<u>176,850</u>	<u>1,386,000</u>

SMALL FARMER COFFEE IMPROVEMENT
VEHICLES AND EQUIPMENT
(U.S. DOLS.)

Description	Unit Cost	C A L E N D A R Y E A R S						TOTAL
		1981 6 mos.	1982 12 mos.	1983 12 mos.	1984 12 mos.	1985 12 mos.	1986 6 mos.	
30 type C-J5 Jeep Diesel	8,000		<u>240,000</u>					<u>240,000</u>
EXTENSION EQUIPMENT								
Equipment:								
4 video tape machines	1,500		3,000					3,000
2 16-mm movie projector	400		800					800
1 screen	100		200					200
2 PA System	1,500		3,000					3,000
1 copy machine(XEROX)	9,000		9,000					9,000
Total Equipment			<u>16,000</u>					<u>16,000</u>
Sub-total A.I.D.			<u>256,000</u>					<u>256,000</u>
OFFICE EQUIPMENT								
10 desks	250	2,500						2,500
10 chairs	100	1,000						1,000
2 electric typewriters	1,000	2,000						2,000
5 filing cabinets	175	875						875
2 electronic calculators	225	450						150
2 typewriter tables	75	<u>150</u>						<u>150</u>
Sub-total GOH		6,975						6,975
Total vehicles and equipment		<u>6,975</u>	<u>256,000</u>					<u>262,975</u>

SMALL FARMER COFFEE IMPROVEMENT
Operating Cost
(U.S. Dollars)

<u>Description</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u>
Extension Materials	3,500	9,000	9,000	9,000	9,000	4,000	43,500
Virgen Video Tape	-	1,000	-	-	-	-	1,000
Sub-total AID	<u>3,500</u>	<u>10,000</u>	<u>9,000</u>	<u>9,000</u>	<u>9,000</u>	<u>4,000</u>	<u>44,500</u>
Office Supplies	3,000	10,000	10,000	10,000	10,000	7,000	50,000
Travel & Per Diem							
40 Extension Agents	2,400	19,200	38,400	48,000	48,000	24,000	180,000
20 Credit Agents	1,200	9,600	19,200	24,000	24,000	12,000	90,000
<u>Vehicles Operation</u> <u>and Maintenance</u>							
Fuel (60 vehicles)	3,750	30,000	31,500	75,000	75,000	37,500	252,750
Maintenance (60 vehicles)	3,750	30,000	60,000	75,000	75,000	37,500	281,250
Sub-total GOH	<u>14,100</u>	<u>98,800</u>	<u>159,100</u>	<u>232,000</u>	<u>232,000</u>	<u>118,000</u>	<u>854,000</u>
 Total Operating Cost	 <u>17,600</u>	 <u>108,800</u>	 <u>168,100</u>	 <u>241,000</u>	 <u>241,000</u>	 <u>122,000</u>	 <u>898,500</u>

SMALL FARMER COFFEE IMPROVEMENT
Demonstration Lots
(U.S. Dollars)

	C A L E N D A R Y E A R S						<u>TOTAL</u>	
	<u>Unit</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>		<u>1986</u>
	<u>Cost</u>	<u>6 mos.</u>	<u>12 mos.</u>	<u>12 mos.</u>	<u>12 mos.</u>	<u>12 mos.</u>	<u>6 mos.</u>	
12 Demonstrations Lots \$2337 c/u Aproximated	2,337	-	28,044	-	-	-	-	28,044
24 Demonstration Lots	2,337	-	-	56,088	-	-	-	56,088
24 Demonstration Lots	2,337	-	-	-	56,088	-	-	56,088
TOTALS		-	<u>28,044</u>	<u>56,088</u>	<u>56,088</u>	-	-	<u>140,220</u>

SMALL FARMER COFFEE IMPROVEMENTS
Evaluation and Audits
(U.S. Dollars)

<u>Description</u>	<u>C A L E N D A R Y E A R S</u>						<u>TOTAL</u>
	<u>1981</u> <u>6 mos.</u>	<u>1982</u> <u>12 mos.</u>	<u>1983</u> <u>12 mos.</u>	<u>1984</u> <u>12 mos.</u>	<u>1985</u> <u>12 mos.</u>	<u>1986</u> <u>6 mos.</u>	
a) <u>Evaluations:</u> Two evaluations in all the life project \$25,000 ea.	-	-	<u>25,000</u>	-	-	<u>25,000</u>	<u>50,000</u>
b) <u>Audits</u> One audit per year begin 1982 \$15,000 ea.	-	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	<u>15,000</u>	<u>75,000</u>
TOTAL	-	<u><u>40,000</u></u>	<u><u>15,000</u></u>	<u><u>15,000</u></u>	<u><u>15,000</u></u>	<u><u>40,000</u></u>	<u><u>125,000</u></u>

SMALL FARMER COFFEE IMPROVEMENTS
Training
(U.S. Dollars)

<u>Description</u>	<u>C A L E N D A R Y E A R S</u>						<u>TOTAL</u>
	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	
		<u>Training Abroad</u>					
2 visits 6 participants ea. 6 months each (\$22 x 180 x 6)		23,760	23,760				47,520
		<u>In Country Training</u>					
6 central work shops 30 participants ea. (4 days) Per diem		4,800	4,800	4,800			14,400
Materials and supplies		500	500	500			1,500
18 Regional courses x 4 regions, 2 days each 30 participants Per diem		28,800	28,800	28,800			86,400
Materials and supplies		2,000	2,000	2,000			6,000
12 Field trips 3 days each 12 participants Per diem		5,760	5,760	5,760			17,280
Materials and supplies		500	500	500			1,500
TOTALS		<u>66,120</u>	<u>66,120</u>	<u>42,360</u>			<u>174,600</u>

BEST AVAILABLE DOCUMENT

LAC/DR-IEE-80-13

ENVIRONMENTAL THRESHOLD DECISION

Project Location : Honduras

Project Title and Number : Small Farmer Coffee Production
522-0176

Funding : \$9.0 million Loan
\$0.55 " Grant

Life of Project : Three years

IEE Prepared by : E. E. Trujillo, RPMS/ROCAP

Recommended Threshold Decision: Negative Determination

Bureau Threshold Decision : Concurrence with Mission
recommendation

Action : 1) Copy to USAID/Honduras
John R. Oleson
2) Copy to E. E. Trujillo
3) Copy to IEE file

Robert O Otto Date 12 Feb 81

Robert O. Otto
Chief Environmental Officer
Bureau for Latin America
and the Caribbean

15
MONITORING REPORT

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT LOCATION: Honduras

PROJECT TITLE: Small Farmer Coffee Production

PROJECT NUMBER: 522-0176

LIFE OF PROJECT: 3 years

IEE PREPARED BY: E.E. Trujillo, RPMS/ROCAP

DATE: November 13, 1980

ACTION RECOMMENDED: Negative Determination

CONCURRENCE: John Oleson
John Oleson, Director
Honduras AID

DATE: November 21, 1980

I. Project Description

The project goal is to increase incomes and quality of life of the small coffee producers in Honduras through a program of research, extension, and credit designed to transfer to the small coffee producer improved technology and management practices. The program will emphasize replacement of varieties (with either more productive or more disease resistant varieties), higher plant densities, improved pruning practices, improved (more uniform) shade, effective fertilization, integrated pest management, soil conservation practices, and crop diversification.

The program will be implemented by the Honduran Coffee Institute (IHCAFE) in conjunction with a credit institution (either the Coffee Bank, Coffee Cooperative Federation, or the Agricultural Development Bank). Grant financing will provide technical consultants to IHCAFE for research into improved production techniques which are appropriate to the small producer.

II. Project Area

The project will be implemented in the mountainous coffee producing regions of Honduras, primarily in the Departments of Santa Bárbara, El Paraíso, Comayagua, Copán and Lempira. There are approximately 45,000 coffee producers with fewer than 5 hectares. They have about 72,000 hectares in production. The project goal will be to reach farmers on about 40,000 hectares over a 4 year period.

Coffee is produced in regions ranging from 600 mts. to 1,600 mts. in altitude, most commonly above 1,000 mts. Rainfall averages about 150 cm., with a range of from about 110 cm. to about 240 cm., and is, of course, highly seasonal. Temperatures depend largely on elevation in all regions, with average maximum temperatures of about 26°C and minimum of about 18°C. The terrain is mountainous with a broken topography, with slopes commonly in the range of 15 to 35 degrees. Soils are generally volcanic (inceptisoles) or laterizados, with arcillo-limosno or arcillo-arenoso textures, varying in depth of topsoil from several inches to several feet, and varying in permeability and resistance to erosion. There is virtually no irrigation of small coffee plantations. Virtually all small coffee production is in forest lands, primarily coniferous and liquidambar, and in regions where deforestation and resultant erosion is frequent in the absence of coffee.

III IMPACT IDENTIFICATION AND EVALUATION FORM

**Impact
Identification and
Evaluation ^{1/}**

Impact Areas and Sub-Areas

A. LAND USE

- | | | |
|--|--|---|
| 1. Changing the character of the land through: | | |
| a. Increasing the population _____ | | N |
| b. Extracting natural resources _____ | | N |
| c. Land clearing _____ | | N |
| d. Changing soil character _____ | | N |
| 2. Altering natural defenses _____ | | N |
| 3. Foreclosing important uses _____ | | N |
| 4. Jeopardizing man or his works _____ | | N |
| 5. Other factors | | |
| _____ | | |
| _____ | | |

B. WATER QUALITY

- | | | |
|---|--|---|
| 1. Physical state of water _____ | | N |
| 2. Chemical and biological states _____ | | N |
| 3. Ecological balance _____ | | N |
| 4. Other factors | | |
| _____ | | |
| _____ | | |

^{1/} We use the following symbols:

- | | |
|--|---|
| N = <u>No</u> environmental impact | U = <u>Unknown</u> environmental impact |
| L = <u>Little</u> environmental impact | + = <u>Beneficial</u> impact |
| M = <u>Moderate</u> environmental impact | - = <u>Negative</u> impact |
| H = <u>High</u> environmental impact | |

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- | | |
|--------------------------|---|
| 1. Air additives _____ | N |
| 2. Air pollution _____ | N |
| 3. Noise pollution _____ | N |
| 4. Other factors _____ | |
| _____ | |
| _____ | |

D. NATURAL RESOURCES

- | | |
|--|----|
| 1. Diversion, altered use of water _____ | N |
| 2. Irreversible, inefficient commitments _____ | N |
| 3. Other factors _____ | |
| Soil conservation _____ | M+ |
| _____ | |
| _____ | |

E. CULTURAL

- | | |
|--|---|
| 1. Altering physical symbols _____ | N |
| 2. Dilution of cultural traditions _____ | N |
| 3. Other factors _____ | |
| _____ | |
| _____ | |

F. SOCIOECONOMIC

- | | |
|--|---|
| 1. Changes in economic/employment patterns _____ | N |
| 2. Changes in population _____ | N |
| 3. Changes in cultural patterns _____ | N |
| 4. Other factors _____ | |
| _____ | |

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- | | |
|--|-------|
| 1. Changing a natural environment _____ | N |
| 2. Eliminating an ecosystem element _____ | N |
| 3. Other factors | |
| <u>Provide more balanced nutrition</u> _____ | M+ |
| _____ | _____ |

H. GENERAL

- | | |
|---------------------------------|-------|
| 1. International impacts _____ | N |
| 2. Controversial impacts _____ | N |
| 3. Larger program impacts _____ | N |
| 4. Other factors | |
| _____ | _____ |
| _____ | _____ |

I. OTHER POSSIBLE IMPACTS (not listed above)

- | | |
|--|-------|
| 1. Introduction of new plant species _____ | N |
| 2. Agricultural chemicals _____ | -M+ |
| 3. Other factors | |
| _____ | N |
| _____ | _____ |

IV. Discussion of Impacts

D. Natural Resources

Technification of coffee production at the small farm levels is the only immediate alternative to counteract the effect of coffee rust in Honduras. The utilization of resistant varieties commercially adaptable to the area is not possible in the immediate future, because such varieties do not exist. Coffee production is in the hands of a large number of small farmers and most orchards are located in mountainous marginal sites with very pronounced slopes. All attempts to protect this crop from the devastating effects of rust will have a highly positive impact on the environment as a whole. Changes from coffee farming to other agricultural systems is possible, however most crops that could replace coffee are less suitable to the topography and the low fertility of the coffee growing region. This coupled with poor farming practices and torrential rainfall may trigger unsurmountable problems in soil erosion and siltation of watersheds throughout the country. The technification of coffee therefore is urgent and will have a highly beneficial impact in the conservation of natural resources such as soil and water.

G. Health

Improvement in coffee production at the small farm level will benefit the rural poor by increasing income through more efficient production and higher yields. This in turn will enable poor farmers to improve their basic diet and living conditions. Therefore the impact on health may be light to moderate.

I. Other Possible Aspects

Technification of coffee involves the renovation of old plantings with improved commercial varieties, increased plant density, better site selection, contour planting, modification of shade, maximization of pruning to attain high yields, use of fertilizers and agricultural pesticides. Most of these improved technologies will have little or some beneficial effect to the environment. Pesticide use in areas which can be considered as part of the watershed systems of the country will have a negative effect on the environment. However, the effects can be minimized by judicious use of pesticides and by an intensive practical training at the farm level in sound pesticide use and practice. Pesticides with potential threat to the environment must be avoided, only pesticides that are easily degradable and of low mammalian toxicity should be preferred. Since the project contemplates procurement of pesticides during its implementation phase a further environmental review will be required once the pesticides and their proposed patterns of use have been identified, and further reviews should be done in accordance with AID regulation, 216.3(b), AID Handbook 3, app 4B.

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