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FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA

**FHIA'S MANDATE, FINANCIAL
PROJECTION AND SUSTAINABILITY.
A FUNDING STRATEGY DRAFT DOCUMENT**

Documentos sobre
Desarrollo Institucional
y Logros

FHIA'S MANDATE, FINANCIAL PROJECTION AND SUSTAINABILITY
A FUNDING STRATEGY DRAFT DOCUMENT

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HONDURAN FOUNDATION OF AGRICULTURAL RESEARCH, FHIA

FHIA'S MANDATE, FINANCIAL PROJECTION AND SUSTAINABILITY

A FUNDING STRATEGY DRAFT DOCUMENT

August, 1987

This new agricultural research organization arose in early 1984 in response to a felt-need to innovate agricultural technology as to allow Honduras to increase the production, the quality and the diversity of commodities for export. The combined interest of the government of Honduras and of the USAID coincided with the willingness of the United Brands Company to donate its research facility in La Lima, including its program of banana genetic improvement.

I. Purpose, Objectives and Organization

The founders of FHIA decided, from its inception, to adopt a new model of organization and modus operandi, forming a private enterprise, non-profit, closely related to the government agricultural strategy, but independent in its operations and management. The original funds, provided largely by the USAID (US \$20 million), were intended to support basic core research and dissemination of results for ten years while other funds were to be obtained through active fundraising to progressively supplement, and ultimately, replace this initial funding. Thus, the character of a "foundation" as its title indicates. Obviously, for a new enterprise, the first two years were largely devoted to organizing, recruiting personnel, building essential research and communication infrastructure, defining research strategy and priorities, characterizing the situation of the

chosen commodities and initiating research and communication activities compatible with FHIA's objectives. These objectives as established by its Assembly of Members areas follows:

Objectives

The ultimate goals of FHIA are: to help increase the level of productivity of the honduran farmer and the generation of employment in the country. To accomplish the above, the following specific objectives have been given in its statutes:

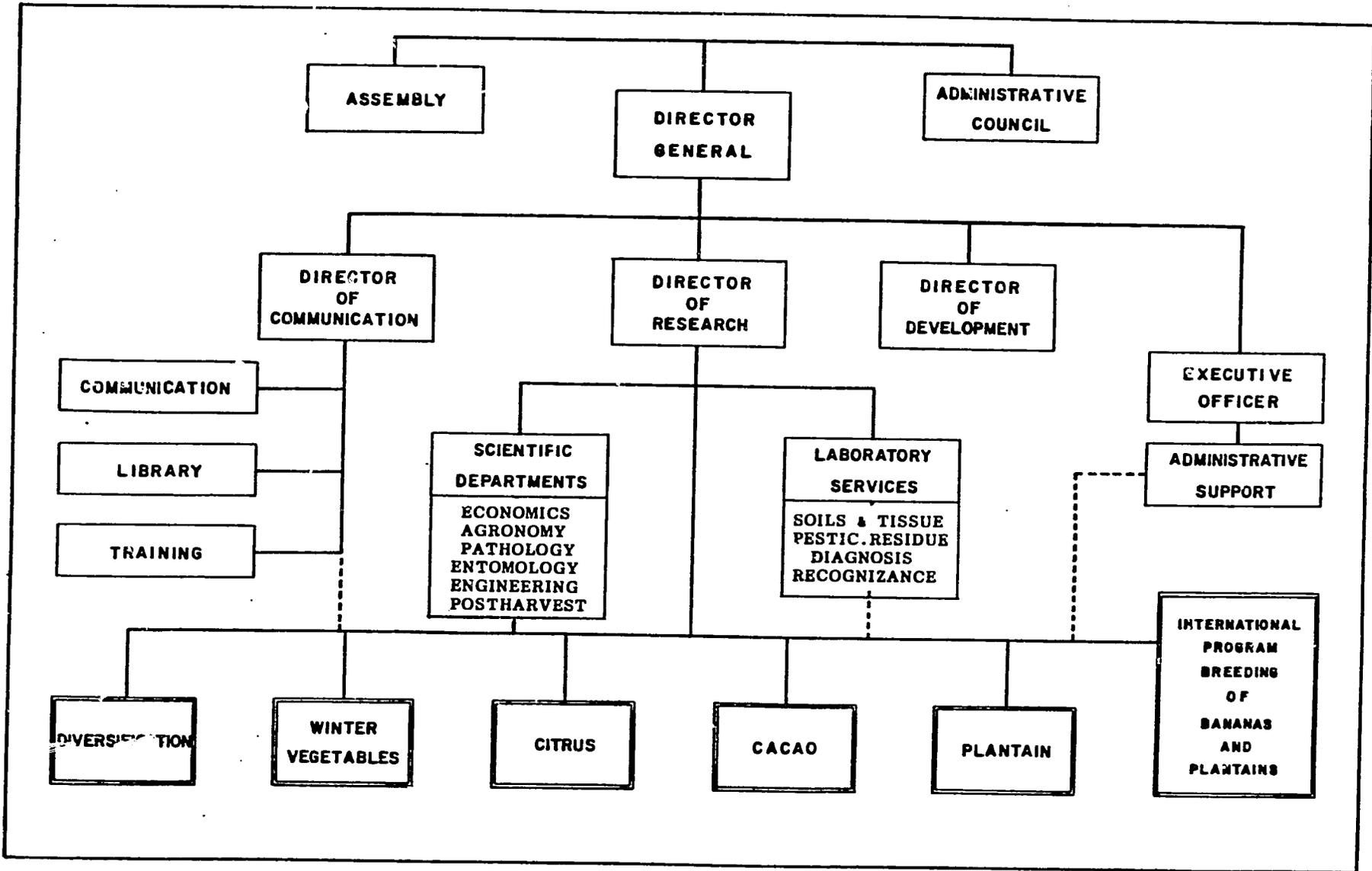
1. To conduct research in traditional and non-traditional crops for internal consumption as well as for export including aspects of production, processing and marketing at national and international levels.
- 2) To operate the Center of Tropical Research of Honduras at La Lima; and its dependencies, including analytical services and other research-related services.
- 3) To provide communication services in support of the agricultural extension services and of the producer.
- 4) To stimulate the agricultural development of the country through science and technology.
- 5) To operate international programs especially in relation to genetic resources of bananas, plantains and related species and in regard to obtaining funding for that purpose.

Organizational Structure

The Foundation's maximum authority is its General Assembly presently of 30 members chosen from the public and private organizations of the agricultural sector, who meets once a year. A Board of Directors (Administrative Council) of eight members meets every two months, counsels management and sets operational policy. A committee of overseers periodically requests audits and makes sure that finances and operations are properly regulated and conducted according to ethics and standard procedures.

The management and leadership are in the hands of an Executive Director General, assisted by three other Directors, for the three divisions of Research, Communication and Development (fundraising). An executive administrator, directly under the Director General, is in charge of accounting, personnel and other administrative services. All of those based on a "philosophy of lending support to the research and communication activities". The organigram in the next page shows the Foundation's structure.

In concert with its focus on export commodities, FHIA's Assembly has adopted a mandate concentrating from the beginning on six programs. The previously existing banana improvement program expanded by FHIA to cover breeding of plantains as well, plus five other programs of domestic coverage: cacao, citrus, plantains (cropping practices) vegetables and a diversification program; this latter with the purpose



of exploring new non-traditional options of export products. These six programs form the main thrust of FHIA's research and communication efforts. Sections III and IV give further details on these programs and their commodities.

Each one of the above programs is headed by a "Leader" who provides the necessary technical and logistic leadership required to coordinate the work of the program staff, (a very small group of two or three "commodity specialist") plus the inputs of the disciplinary scientific departments that, together with the program staff, conduct all the research and most of the complementary communication activities on each commodity.

The present five disciplinary departments: Agricultural Economics, Agronomy, Pathology, Entomology and Engineering; consist of three to five professionals in their departmental fields. This combination of "programs" and "departments" allow for the most efficient utilization of limited personnel and resources.

The Communication Division contains the "units" of Communication (production of publications, visual aids, radio, video etc.), Training and Conferences and the Library. These units assist the staff of the programs and departments to produce, package and delivery appropriate messages in diferent forms in order to carry to extensionists, to farmer's decision makers and to other audiences the technologies generated, adapted or channeled by FHIA.

The Administration, under the Executive Administrator, lends support to the research and communication staff through the four "offices" of Personnel, Supplies, Maintenance, and Services. The staffing of all these components of FHIA's structure are given in the attached tables. Total permanent employees in 1987 are 230 of whom 48 are professionals, 84 support staff and 98 laborers. Of the professional staff, 13 are Ph.D's, 20 Masters and 23 holders of baccalaureate degrees.

Infrastructure

Headquarters for the Foundation are at La Lima, on a two-acre facility donated by the United Brands Co. where their former Research Department was based. These facilities include laboratories, greenhouses, offices and warehouses and have been expanded recently to four acres to include two additional buildings for the communication center's conference rooms, offices, shops, library and visitor's reception.

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA
FHIA

Distribución de Personal
Agosto 31, 1987

	Doctorados	Maestrías	Lic. Ing. o B.S.	Agrónomos	Personal Administrativo	Personal Técnico	Jornaleros Permanentes	Gran Total
Dirección General	1				2			3
Dirección Div. de Investigación	1				2			3
<u>Departamentos:</u>								
Agronomía	1	2		2	1	1	6	13
Patología	2	1		1				16
Botanología	1	2			1	3	6	13
Economía Agrícola	1	3	1		2		6	7
Ingeniería Agrícola		1	3	1		1	9	15
Genética y Cómputo	1	1			1			3
<u>Programas:</u>								
Cítricos		2						4
Cacao		1	2			1	1	21
Mátano			2				18	23
Mortalizas		1	1	1		3	18	4
Diversificación	1	1		1		1	3	8
Genética	2			1	1	5	19	26
<u>Proyectos:</u>								
Hortícola	1	1	1	2	3			8
<u>Servicios Analíticos:</u>								
Lab. Químico Agrícola			1			10		11
Lab. Análisis Residual		1				1		2
<u>División de Comunicación:</u>								
	1	1	2		5	3		12
<u>División de Desarrollo:</u>								
		1			2			3
<u>Administración:</u>								
		1	2		18	2	12	35
Gran Total:	13	20	15	8	38	38	98	230

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA
FHIA

Distribución de Personal
Agosto 31, 1987

	Personal Profesional	Personal de Apoyo	Jornaleros	Total
Dirección General	1	2	-	3
Dirección Div. de Investigación	1	2	-	3
Departamentos:				
Agronomía	3	4	6	13
Patología	3	7	6	16
Entomología	3	4	6	13
Economía Agrícola	5	2	-	7
Ingeniería Agrícola	4	2	9	15
Bioetría y Cómputo	2	1	-	3
Programas:				
Cítricos	2	1	1	4
Cacao	3	-	18	21
Plátano	2	3	18	23
Hortalizas	2	2	-	4
Diversificación	2	3	3	8
Genética	2	5	19	26
Proyectos:				
Hortícola	3	5	-	8
Servicios Analíticos:				
Lab. Químico Agrícola	1	10	-	11
Lab. Análisis Residual	1	1	-	2
División de Comunicación:	4	8	-	12
División de Desarrollo:	1	2	-	3
Administración:	3	20	12	35
GRAN TOTAL	48	84	98	230

Research is conducted in four small experiment stations located purposely in the center of the regions of production of program's commodities at: Guaruma (bananas, citrus), Calan (plantains), La Masica (cacao), and Comayagua (vegetables, mango). Additionally, a number of experiment sites have been established on farmer's fields at different locations in the country as far as the Aguan Valley in the north coast, La Entrada in the west and Choluteca in the south.

Technical and Laboratory Services

Besides conducting research, and communication results, FHIA offers to producers various technical services such as soil and tissue analysis and fertilizer recommendations, diagnostic tests on diseases and pests, land recognizance and drainage-irrigation design. FHIA's soil analysis laboratory is internationally known and draws samples from several countries in Central America. A moderate amount of income in the order of US\$200,000 is expected from these services.

Additional details of the present research and communication strategies and plans are given in FHIA's five-year plan document available at the Foundation.

Development (Fundraising)

Seeking and obtaining funds is essential for the growth and sustainability of FHIA. Early plans, recognizing this requirement, included the establishment of a Development office, later elevated to the level of Division, headed by a Director of Development. This

person was hired at the start of 1987. The new Director of Development, Mr. Chris Millensted, together with the Director General rapidly expanded the fundraising efforts initiated the previous year by the latter in 1986 for the International Program of Improvement of Bananas and Plantains. The results of those efforts in 1986 year amounted to grants totalling US\$475,000 and donated by the UPEB, the Government of Ecuador, the IDRC of Canada and the Government of Honduras.

New efforts initiated in 1987, but not yet yielding grants this year, are listed in section VII of this document, dealing with fundraising strategy.

II Beneficiaries and Clientele

The objectives of FHIA are focused primarily in the honduran producer to help increase his productivity in selected crops and to help generate additional employment in the agricultural sector. The same objectives aim to the producers of bananas and plantains in other countries of the tropics where these commodities are important as local foods as well as export commodities.

The beneficiaries of FHIA's research results, therefore, are first of all the honduran producers, regardless of size, and with special attention to the small and medium sized farmer. These constitute the majority of producers by number and acreage in regard to plantains and cacao. If we take into account the associative enterprises and cooperatives, small producers are also the majority of those producing vegetables, citrus and bananas (except in acreage for this latter crop).

Another category of beneficiaries are those that enter into processing and marketing activities related to the crops in FHIA's mandate. Export diversification crops are expected to provide a strong stimulus in this area.

Truly it is anticipated that increased production will, through area expansion and higher productivity, generate a significant number of jobs in the rural sector. For instance, in plantains, employment is expected to increase from 1270 man-days in 1987 to 1518 or 20% in five years and to 1815 or 43% in ten years. Other data are shown in tables of Section III on FHIA's mandate). The following table shows the projected increases in value of generated employment for the present FHIA's commodities.

Table. Increases in value of generated employment predicted in the production of export crops in Honduras during the period 1988-1997.

	Value of generated employment - Millions of Lps.		
	Due to increase in area cultivated	Due to increase in productivity	Total increase
Cacao	7.2	3.6	10.8
Citrus	9.3	4.7	14.0
Vegetables	48.2	36.1	84.3
Plantain	19.0	9.6	28.6
Bananas	73.8		73.8
Soybeans	3.3	3.3	6.6
Mango	2.3	2.4	4.7
Black Pepper	3.0		3.0
Pineapple	4.7	7.0	11.7
	170.8	66.7	237.5

Finally, consumers will benefit from increased availability of food crops at lesser prices. These consumers will not only include those in imported countries, but also and perhaps to a greater extent, honduran consumers since only part of the products will meet export requirement, but while still being of good quality characteristics for the local markets, will be channeled for national consumption of urban and rural population, including the poor that will have a greater access, especially to fruits and vegetables that otherwise would not be available to him.

Other Benefits to Honduras

Not only the above mentioned beneficiaries will result from FHIA's action, but other indirect benefits will accrue to the economy of Honduras, thus benefiting the general population and helping the economic development of the country. The following increases in gross value of production are estimated for the next ten years for selected export crops:

Table. Projected increases in gross value of production for the period 1988-1997 for selected export crops in Honduras.

	Gross value of production, Millions of Lps	
	Value of Production	Value of Exports
Cacao	71.1	57.4
Citrus	212.9	69.0
Vegetables	186.3	186.3
Soybeans	10.8	
Mango	48.8	9.0
Black Pepper	7.6	5.0
Palm Hearts	0.5	0.5
Pineapple	155.2	142.3
Plantain	152.6	44.7
Bananas	607.4	542.5
TOTAL	1454.0	1056.6

It must not be lost from sight the benefit to future economic industrial development of Honduras that will be possible by the dollar currency that agricultural exports will bring. These dollar resources can be used for imports of industrial equipment and know-how to help develop other sectors of the economy. Over the next ten years, it is expected that a total accumulated increase of 1,056 millions of Lempiras will come into Honduras from additional exports of nine commodities. This is a powerful injection of export-generated financial resources.

Benefit to other countries of the world

The new pest and disease resistant varieties coming out of the international breeding program will additionally benefit the producers consumers and the economies of at least eight export banana producing countries in Latin America and at least 6 others in Asia and Africa. Including plantains, the number of countries and the number of people benefiting will increase enormously since at least 26 additional plantain producing countries and some 250 million people are potential beneficiaries in variable magnitudes difficult to assess.

Clientele

The ultimate clientele of FHIA are the producers of commodities in the Foundation's mandate. To reach them FHIA will be able to make direct contact in numerous opportunities. However, in lieu of an extension arm of itself, FHIA will also give attention to extension personnel of

the public sector and of farmer's associations, who in turn, will carry technology information to producers. Additional audiences are professionals, businessmen, industrialists, public officials and students, all of whom will be reached by FHIA through its communication strategies.

III. Crops in FHIA's Mandate, Present and Potential

The present crops (programs) in FHIA's mandate (banana and plantain breeding, plantain's crop management, cacao, citrus, vegetables and diversification) were prescribed by the original planners and founders of their research organization and sanctioned by its General Assembly.

Not presently included in its research programs are coffee and basic grains, for two reasons: 1) both are already handled by other agencies, although the extent and depth of research are quite limited and, 2) funds currently available to FHIA are not even sufficient to adequately provide for the six existing programs, least of all to add new programs under the same total resources. On the contrary, reducing the number of commodities, in order to maintain adequate depth of research, may become necessary unless substantial additional funds are obtained.

Analysis of crop priorities

An attempt is made in the following pages to analyze comparatively the

likely possibilities of each of the six crops in the core commodity programs plus the four in the Diversification program. It must be noted that the research in the Diversification program is of exploratory nature to test the feasibility of profitably producing and exporting non-traditional crops. This recently done analysis confirms the justification for the choice of commodities in FHIA's mandate, in terms of potential increases in production (area expansion and productivity) increase in value of exports (at least 1987 prices) and increase in value of employment generated (Table 3 in this section III). Ranked in order of increase in gross value of production are: 1) bananas, 2) citrus, 3) vegetables, 4) pineapple-plantain, 5) cacao, 6) mango, 7) soybeans, 8) black pepper and last, 9) palm hearts. The ranking by value of potential export changes somewhat from the previous ranking to: 1) bananas, 2) vegetables, 3) pineapple, 4) citrus, 5) cacao, 6) plantain, 7) mango, 8) black pepper and, 9) palm hearts. The combined increase of gross value of production over the 10-year period from 1987 is Lps.1,454 million and the total value of exports is Lps.1,056 million.

The ranking order as generator of additional employment over the same period is, 1) bananas, 2) vegetables, 3) plantains, 4) citrus, 5) pineapple, 6) cacao, 7) soybeans, 8) mango and, 9) black pepper.

Coffee and basic grains have not been included in this analysis having been disqualified for the reasons stated before. Pineapple was not

adopted into FHIA's mandate at the start as it was assumed that its research was handled by the Standard Fruit Company, but since then, local production in the Yojoa area has created a need for research to cover that and other potential pineapple areas of Honduras

The above economic projection is based on assumed, constant rates of growth. However, these may be affected by special circumstances of market demand that yet remain to be included in the analysis.

Also, the desirability must be taken into account to diversify export agriculture with alternatives that may pay off in the long term future beyond a 10-year span.

Finally, the potential of other economic crops must be considered in the very near future, especially in regard to african oil palm, cut flowers, foliage ornamentals, macadamia nuts and perhaps shrimp production, an industry that is growing rapidly in Honduras.

A. The Economic and Social Situation in Honduras

The performance of the Honduran economy between 1980 and 1985 was characterized by a continuous loss of strength due to financial imbalances, increased unemployment, and the inability to satisfy the basic needs of the population. The average rate of economic growth during this period was 1.2% (Table 1), in contrast to the average rate of 8.5% that prevailed between 1976 and 1979. In 1982 and 1983, the economy actually contracted by 1.8% and 0.5%, respectively, while positive growth was observed between 1984 and 1986. Preliminary data indicate that the highest growth rate for the period (3.6%) occurred in 1986.

An analysis of the sectorial economic performance between 1980 and 1985 shows that the primary (agricultural) sector grew at a rate of 2.1%, the secondary (manufacturing) sector declined by 1.6% per annum, and the third (service) sector increased by 1.0%.

In the primary sector, bananas and coffee continued to be the principal crops for production and export. Banana production was adversely affected during a number of years by flooding and diseases, as well as by depressed international prices. Coffee production had stagnated and failed to reach the levels seen prior to 1980.

In the secondary sector, reduced activities were due to (1) decreased demand for value-added Honduran products in local and regional markets (due largely to the policy of parity exchange), (2) decreased domestic demand (due to inflation and a weak lempira), and (3) limits on the importation of capital goods (due to the scarcity of foreign currency).

In the tertiary sector, limited growth was the result of the reduction of construction and commerce activities during this period.

Table 1. Principal Social and Economic Indicators for Honduras, 1980 to 1986.

INDICATOR	1980	1981	1982	1983	1984	1985	1986
Rate of real economic growth (%)	2.7	1.2	-1.8	-0.5	2.8	3.0	3.6
Inflation rate (%)	18.1	9.4	9.0	8.3	4.7	3.4	4.0
Rate of population growth (%)	3.5	3.5	3.5	3.4	3.4	3.3	3.3
Real GDP per capita (Lps) (1966=100)	559.0	546.9	518.8	500.0	496.0	494.0	N.A.
Real consumption per capita (Lps) (1966=100)	478.0	463.0	449.0	425.0	411.0	416.0	N.A.
Rate of under-employment (%)	15.2	18.3	21.1	22.9	25.0	N.A.	N.A.

N.A. = not available

SOURCE: National Development Plan, Vol. I, 1987-1990, SECPLAN, Honduras

The financial imbalances observed from 1980 to 1985 were caused greatly by the growing competition for capital available from external and internal sources. Because of fiscal deficits, much of this competition for funding came from the public sector. The public deficit increased from 499.4 to 1,057.0 million lempiras from 1980 to 1984, and then decreased to 867.1 million lempiras in 1985 (Table 2). Total public expenditures for 1985 were 2,288.3 million lempiras and nominal public revenues were 1,421.2 million lempiras. Thus, a balanced budget for 1985 would have required approximately 40% financing.

Three factors contributed to the financial imbalance in Honduras between 1980 and 1985 (Table 2). First, a deteriorating exchange rate was evident. Second, a negative balance of trade existed during the entire period. Third, debt service has also been a matter of concern for Honduras; in 1980 and 1985, it absorbed 14% and 28%, respectively, of the value of Honduran exports. (See Table 2)

Employment demographics in Honduras have changed noticeably between 1970 and 1985. In 1970, the economically active population was comprised of 61% in the primary sector, 12% in the secondary sector, and 27% in the tertiary sector. In 1985, this had changed to 46.4%, 15.2%, and 38.4%, respectively, which resulted mainly from a movement from the primary to the tertiary sector.

A serious problem facing Honduras has been the quantitative and qualitative aspects of its labor supply. The population growth rate in 1985 and 1986 was 3.3% per year, which exacerbates the inability of the economy to absorb the unemployed or under-employed. The level of under-employment increased from 11.3% in 1974 to 25% in 1984, which translates to approximately 317,000 persons in 1984. The population in Honduras is composed mainly of young people, almost half of the population being under 15 years old. The high level of illiteracy (estimated to be 40.5%) and the high rate of school absenteeism (89.3% pre-elementary, 11.5% primary, 78.2% secondary, and 94.2% post-secondary, for 1985) have contributed to the low levels of output quality and productivity of Honduran labor. Refugees from within Honduras and from neighboring countries represent additional competition for the already scarce employment opportunities in Honduras.

Table 2. Honduran national accounts, in millions of nominal lempiras, 1980 to 1985.

DESCRIPTION	1980	1981	1982	1983	1984	1985
Public revenues	922.0	955.2	963.1	1072.4	1222.4	1421.2
Public expenditures	815.9	942.2	972.2	1097.0	1200.8	1397.1
Public capital expenditures	605.5	659.3	592.2	971.4	1085.4	891.2
Public deficit	499.4	646.3	601.3	996.0	1057.0	867.1
Exports	1886.4	1770.6	1536.9	1605.4	1698.6	1842.2
Balance of trade	-369.6	-353.9	-105.3	-223.6	-437.3	-287.7
Net international reserves	107.5	144.8	185.0	35.8	14.9	-24.7
Interchange terms index	115.4	98.3	91.9	84.2	83.4	83.4
Debt service	264.0	342.0	437.2	440.6	437.8	495.7

SOURCE: National Development Plan, Vol. I, 1987-1990, SECPLAN, Honduras.

The failure to satisfy the basic needs of the Honduran population between 1980 and 1985 was partly the result of a low income level as well as population demographics. One indicator of the declining standard of living is the comparison of the growth rate of the economy to the growth rate of the population (Table 1); population grew faster than the economy during the entire period. With a 1986 birth rate estimated at 4.1%, more than 200,000 inhabitants were added. Since Honduras has one of the highest infant mortality rates in the hemisphere (0.79%), only 184,000 infants will survive. Malnutrition is especially severe in children less than five years old and is estimated at 72.5%, or about 600,000 children in 1985. This of course contributes to the high infant mortality rate, and is in turn tied to uneven food distribution and not absolute scarcity. Distributional effects are closely related to the levels of employment and income, and the fact that the average rural worker has six dependents.

Other indicators of the standard of living are the quantity and quality of housing. In 1986 there was a housing shortage of approximately 500,000 units. This shortage increases as population grows over time. The scarcity of financial resources for housing construction compounds the problem. Government has attempted to provide public housing projects for low-income groups, but overhead costs for such projects have led to construction costs higher than those seen in the private sector.

B. Honduran Agricultural Exports: Past, Present, and Future

The nominal Honduran gross domestic product for 1984 was estimated to be 5,600 million lempiras. During the 1980 to 1984 period, approximately 28% of the gross domestic product originated from the agricultural sector. Agriculture constitutes the primary source of employment. In 1985, it provided work for 600 thousand people, which was equivalent to about 46% of the economically active labor force.

Between 1981 and 1985, the total accumulated value of Honduran exports was 8,453.7 million lempiras, of which 5,280.2 million lempiras were in the agricultural sector. Thus, agricultural exports represented approximately 62% of the foreign currency generated by Honduras. Total Honduran exports decreased by 6.1% and 13.2% during 1981 and 1982, respectively.

The major agricultural products exported were bananas, coffee, shrimp and lobster, sugar, beef, and tobacco. Together, these accounted for 96% of the foreign currency income originating from the agricultural sector. Minor agricultural exports included african palm oil, citrus, pineapple, plantain, cacao, cotton, basic grains, melons, cucumbers, and other vegetables.

Three factors that make the Honduran economy and export base highly vulnerable are the limited diversification of export production, a limited number of market areas pursued by Honduras, and a high degree of dependency upon banana and coffee exportation. Bananas and coffee represented 27% and 20%, respectively, of the total value of exports during the period of interest.

Honduran development strategy in the intermediate run is based upon increased private investment, diversification, production, processing, and exportation. To achieve these goals, the government of Honduras enacted or created the Export Development Law, the Temporary Import Law, and the Center for Export Document Processing (Centrex). These and other steps taken by the government are expected to result in rates of growth higher than the 2.8%, 3.0%, and 3.6% seen in 1984, 1985, and 1986, respectively.

The traditional Honduran export sector, which includes bananas, coffee, wood, meat, silver, lead, zinc, sugar, shrimp and lobster, tobacco, and cotton, is expected to continue providing a large share of the income from foreign trade in the foreseeable future. The outlook for growth in the non-traditional export sector is good if the natural resources of Honduras are used well, and if the country is able to take advantage of the opportunities presented by the Caribbean Basin Initiative, the General Agreement on Tariffs and Trade, and a number of potential foreign markets.

The important role that agricultural products play in the Honduran export sector suggests that the supply of such products be increased in order to have a healthy and sustained national economic growth.

C. Present Situation and Outlook for Honduran Agricultural Production, 1987 to 1997

The international markets for both bananas and coffee are subject to the effects of severe annual volume and price fluctuations brought about by exogenous forces over which the national economy has no control. These crops are permanently exposed to diseases, pests, floods, drought, and other unforeseen circumstances. Honduras urgently needs technical and professional support as a means of strengthening and diversifying its agricultural production. This is a fundamental prerequisite to the improvement of the country's economy and welfare.

FHIA, as a private, apolitical, nonprofit organization, is in an excellent position to provide such technical and professional support to the government of Honduras. FHIA's actions are oriented toward the protection and improvement of the basic traditional crops of great socio-economic importance and toward the introduction and diversification of new crops that can effectively contribute to the social and economic welfare of the country. FHIA's present research activities include the genetic improvement of bananas and other programs designed to strengthen, develop, and introduce new technology for non-traditional crops such as plantain, citrus, cacao, and vegetables. FHIA also conducts research in agricultural diversification directed to such crops as soybeans, pineapple, mango, black pepper, and palm hearts. Even though FHIA is presently basing its strategy on the development of these crops, it does not exclude the possibility of expanding research activities into additional crops and opportunities such as african palm oil, cotton, pastures, and shrimp, which could become important to the national economy.

FHIA has been designated to play a central role in fostering agriculture in Honduras. By means of its research endeavors in La Lima and throughout Honduras, it will be instrumental in stimulating, instituting, and developing more profitable agricultural production systems via the utilization and application of improved or new technology. The multiplier effects thus generated will result in increased production and productivity in crops having high economic potential.

Projections shown in Table 3 for a ten-year period from 1988 to 1997 using 1987 as a base year indicate that through FHIA's influence and actions it is feasible to increase the total area of selected crops by 24,846 hectares, increase the value of production by 1,454 million lempiras, increase the value of exports by 1,056 million lempiras, and increase the value of additional labor by 237 million lempiras. It should be noted from Table 3 that 23% of the increased production would be generated through higher productivity brought about by the application of improved or new technology and that 77% would be derived from increases in the cultivated area.

In the section that follows, a crop by crop analysis is presented that indicate FHIA's possible contribution in terms of economic impacts during the ten-year period from 1988 to 1997. This analysis considers the production potential and expansion possibilities within Honduras, based upon historical data and the observation of professionals working in each program.

TABLE No. 3

PROJECTED ECONOMIC IMPACT ATTRIBUTABLE TO FHIA PARTICIPATION WITHIN ITS MANDATE INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION BETWEEN 1988 AND 1997
(FIGURES IN MILLIONS OF LEMPIRAS)

CROPS	CULTIVATED AREA (ha)		GROSS VALUE OF PRODUCTION			VALUE OF EXPORTS			VALUE OF GENERATED EMPLOYMENT		
	1987	1997	for increases in cultivated area	for increases in productivity	Total increase	for increases in cultivated area	for increases in productivity	Total increase	for increases in cultivated area	for increases in productivity	Total increase
Cacao	3400	6800	48.0	23.9	71.9	38.3	19.1	57.4	7.2	3.6	10.8
Citrus	5300	10000	141.8	71.1	212.9	45.9	23.0	68.9	9.3	4.7	14.0
Vegetables	1175	3350	106.6	79.7	186.3	106.6	79.7	186.3	48.2	36.1	84.3
Soybeans	500	2000	5.3	5.5	10.8	-	-	-	3.3	3.3	6.6
Mango	500	1500	34.8	14.0	48.8	6.4	2.6	9.0	2.3	2.4	4.7
Black Pepper	0.5	117.5	7.6	-	7.6	5.0	-	5.0	3.0	-	3.0
Palm Hearts	0.5	10.5	0.1	0.4	0.5	0.1	0.4	0.5	-	-	-
Pineapple	3000	6000	62.1	93.1	155.2	56.9	85.4	142.3	4.7	7.0	11.7
Plantain	10500	15000	101.6	51.0	152.6	29.8	14.9	44.7	19.0	9.6	28.6
Bananas	20300	24744	607.4	-	607.4	542.5	-	542.5	73.8	-	73.8
Totals	44676	69522	1115.3	338.7	1454.0	831.5	225.1	1056.6	170.8	66.7	237.5

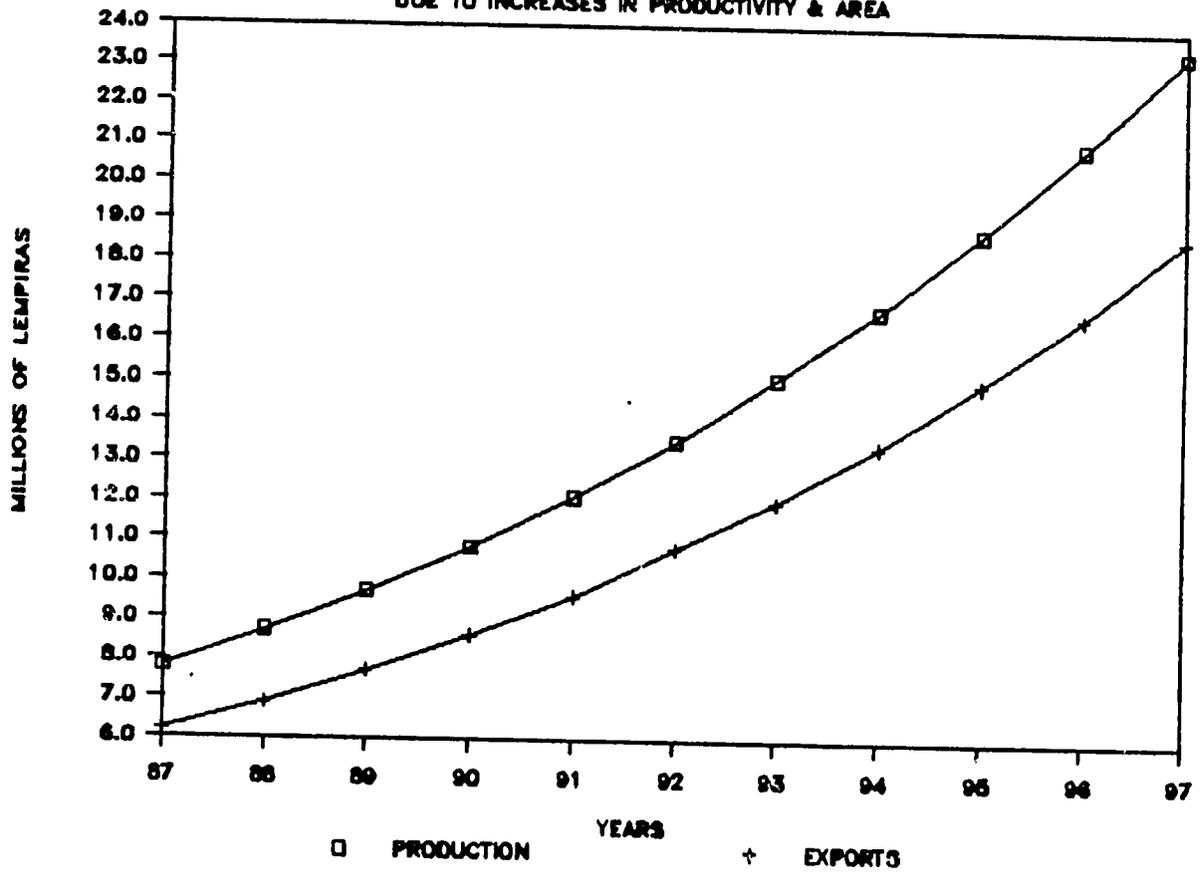
CROP:	CACAO
PRODUCTION AREA (1987):	3,400 ha
PRODUCTION VALUE (1987):	7.8 M Lps
EXPORT VALUE (1987):	6.2 M Lps
EMPLOYMENT VALUE (1987):	2.2 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	50%
PRODUCTION AREA (1997):	6,800 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	71.9 M Lps
Due to production area:	48.0 M Lps
Due to productivity:	23.9 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	57.4 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	10.8 M Lps
MARKET(S) OF INTEREST:	U.S.

OBSERVATIONS:

Cacao in Honduras is considered to be a non-traditional crop. Its cultivation is concentrated on the Atlantic seaboard. Production is currently low at 1,120 metric tons of beans per year. Of the total production, about 20% is consumed in the domestic market and 80% is exported. The U.S. market presently imports around 20% of the world's total export supply of cacao. It is being supplied mainly by the African countries and by Brazil. Honduras presents excellent ecological conditions, low production costs, adequate port facilities, and proximity to the strong U.S. market. It is likely that Honduras can establish an important comparative advantage in cacao production and marketing, especially due to the cost of transportation to the U.S.

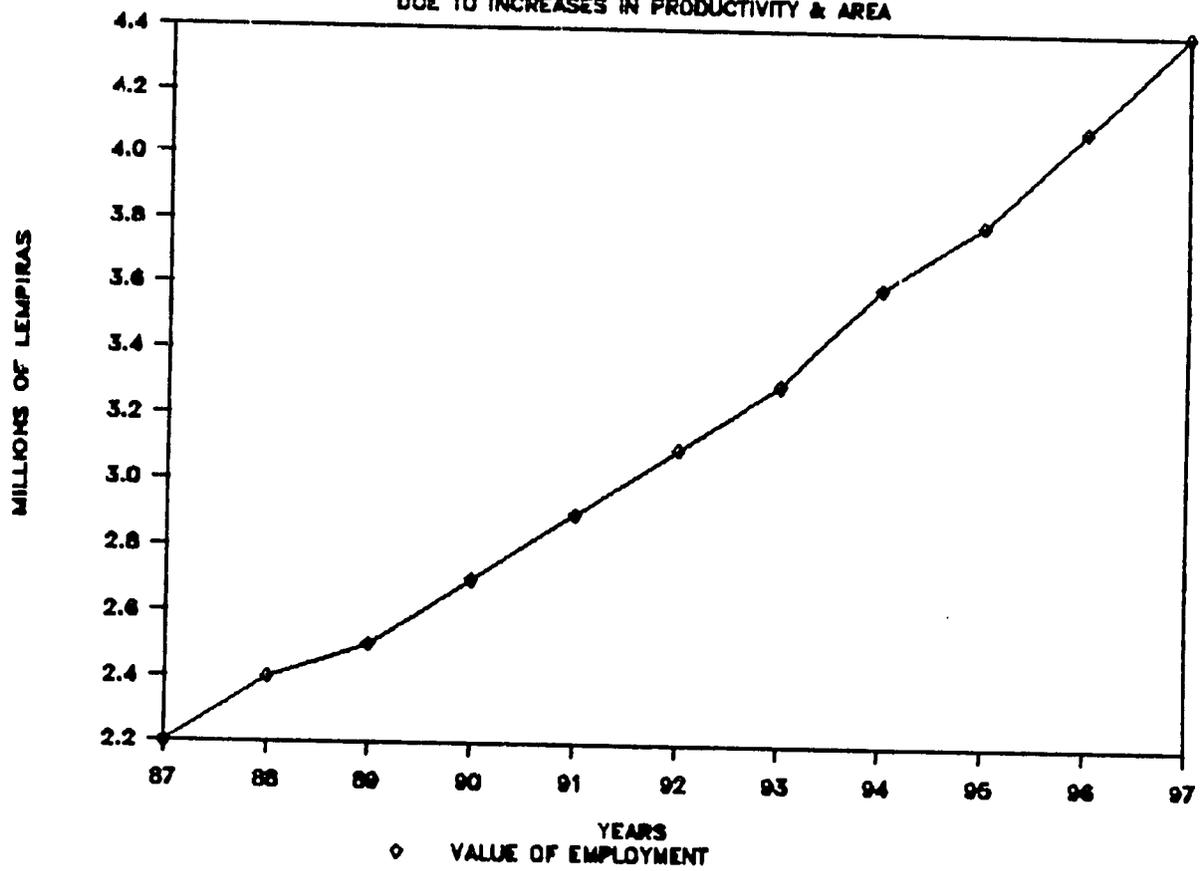
COCOA: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



COCOA: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



COCOA: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN
PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREAS (ha.)	ANNUAL INCREASE IN CULTIVATED AREA (ha.)	GROSS VALUE OF PRODUCTION (Millions of Lps.)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps.)	VALUE OF EXPORTS (Millions of Lps.)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps.)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps.)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps.)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	3400.0	-	7.8	-	6.2	-	2.2	-	221.0	-
1988	3644.0	244.0	8.7	0.9	6.9	0.7	2.4	0.2	236.9	15.9
1989	3905.6	261.6	9.7	1.9	7.7	1.5	2.5	0.3	253.9	32.9
1990	4185.9	280.3	10.8	3.0	8.6	2.4	2.7	0.5	272.1	51.1
1991	4486.3	300.4	12.1	4.3	9.6	3.4	2.9	0.7	291.6	70.6
1992	4808.3	322.0	13.5	5.7	10.9	4.6	3.1	0.9	312.5	91.5
1993	5153.4	345.1	15.1	7.3	12.0	5.8	3.3	1.1	336.0	114.0
1994	5523.3	369.9	16.8	9.0	13.4	7.2	3.6	1.4	359.0	138.0
1995	5919.7	396.4	18.8	11.0	15.0	8.8	3.8	1.6	384.8	163.8
1996	6344.6	424.9	21.0	13.2	16.7	10.5	4.1	1.9	412.4	191.4
1997	<u>6800</u>	<u>455.4</u>	<u>23.4</u>	<u>15.6</u>	<u>18.7</u>	<u>12.5</u>	<u>4.4</u>	<u>2.2</u>	<u>442.0</u>	<u>221.0</u>
	-	3400.0	149.9	71.9	119.4	57.4	32.8	10.6	-	-

Note: These totals do not include the 1987 base year.

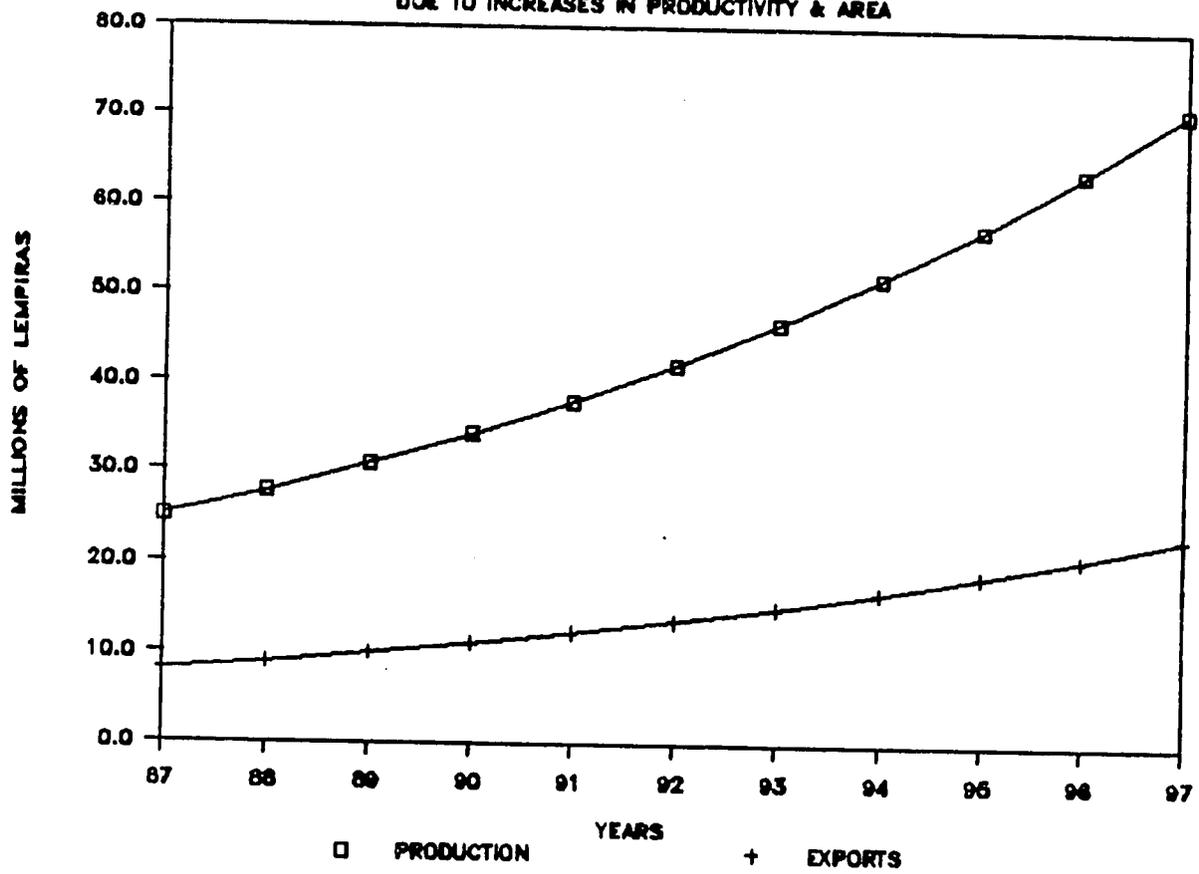
CROP:	CITRUS
PRODUCTION AREA (1987):	5,300 ha
PRODUCTION VALUE (1987):	25.0 M Lps
EXPORT VALUE (1987):	8.1 M Lps
EMPLOYMENT VALUE (1987):	3.2 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	50%
PRODUCTION AREA (1997):	10,000 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	212.9 M Lps
Due to production area:	141.8 M Lps
Due to productivity:	71.1 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	68.9 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	14.0 M Lps
MARKET(S) OF INTEREST:	Domestic, Central America, U.S. and Europe

OBSERVATIONS:

Citrus is produced throughout the country; the northern Atlantic region is the area of highest concentration. Oranges account for the greatest volume and are produced mainly for the domestic and Central American markets. Grapefruit and citrus specialties are exported to Europe, while limes are sent to the U.S. and European markets. Honduras has areas with appropriate ecological conditions and with high productive capability. Areas with elevations greater than 600 feet may be used for orange production, while those areas close to sea level are excellent for high quality grapefruit production. The markets for citrus are expanding in Central America, Canada and in Europe. There appear to be opportunities for export to the European and Canadian markets from July through early October.

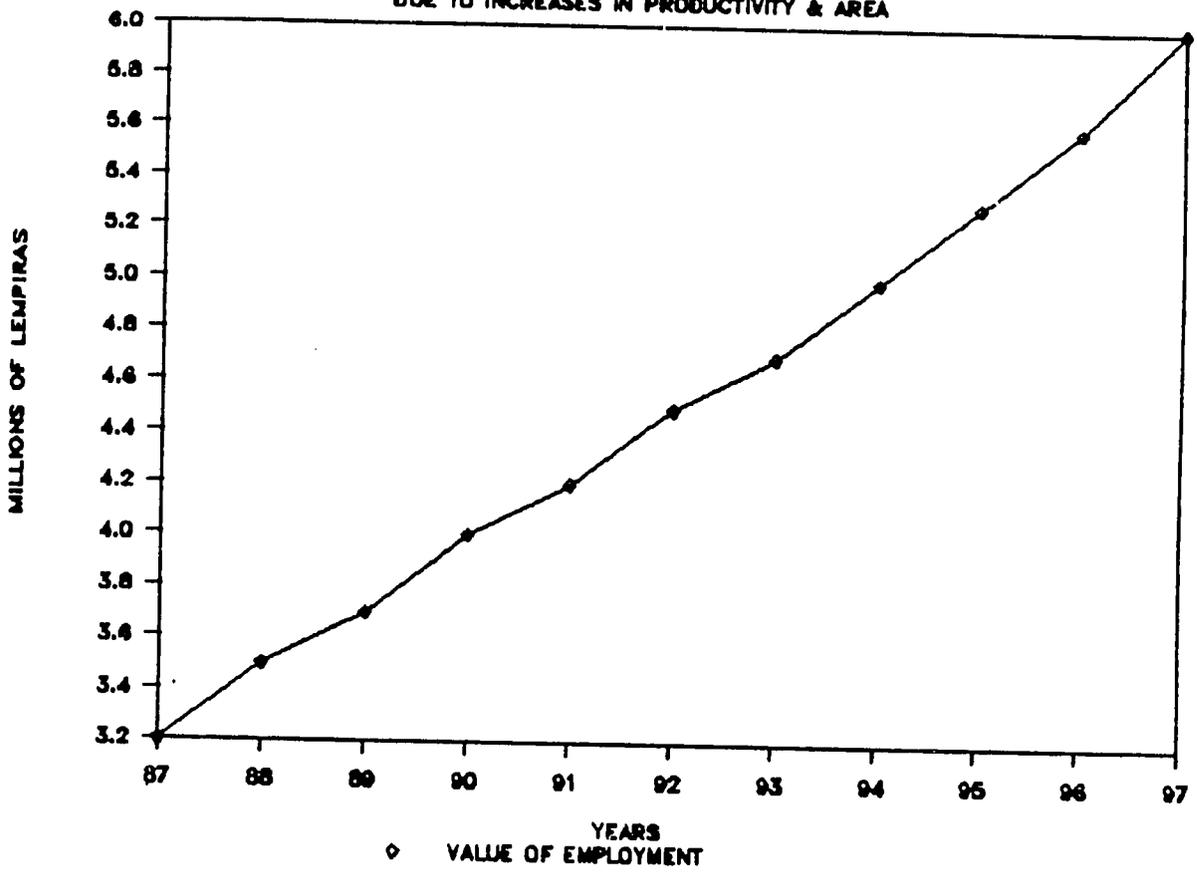
CITRUS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



CITRUS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



CITRUS: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED APEA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	5,300	-	25.0	-	8.1	-	3.2	-	318.0	-
1988	5,900	600	27.7	2.7	9.0	0.9	3.5	0.3	354.0	36.0
1989	6,256	356	30.8	5.8	10.0	1.9	3.7	0.5	375.4	57.4
1990	6,634	378	34.1	9.1	11.1	3.0	4.0	0.8	398.0	80.0
1991	7,035	401	37.9	12.9	12.3	4.2	4.2	1.0	422.1	104.1
1992	7,459	425	42.0	17.0	13.6	5.5	4.5	1.3	447.5	129.5
1993	7,910	450	46.6	21.6	15.1	7.0	4.7	1.5	474.6	156.6
1994	8,387	478	51.8	26.8	16.8	8.7	5.0	1.8	503.2	185.2
1995	8,854	506	57.4	32.4	18.6	10.5	5.3	2.1	533.6	215.6
1996	9,431	537	63.7	38.7	20.6	12.5	5.6	2.4	565.9	247.9
1997	<u>10,000</u>	<u>569</u>	<u>70.7</u>	<u>45.7</u>	<u>22.9</u>	<u>14.8</u>	<u>6.0</u>	<u>2.8</u>	<u>600.0</u>	<u>282.0</u>
	-	4,700	462.9	212.9	149.9	68.9	46.0	14.0	-	-

Note: These totals do not include the 1987 base year.

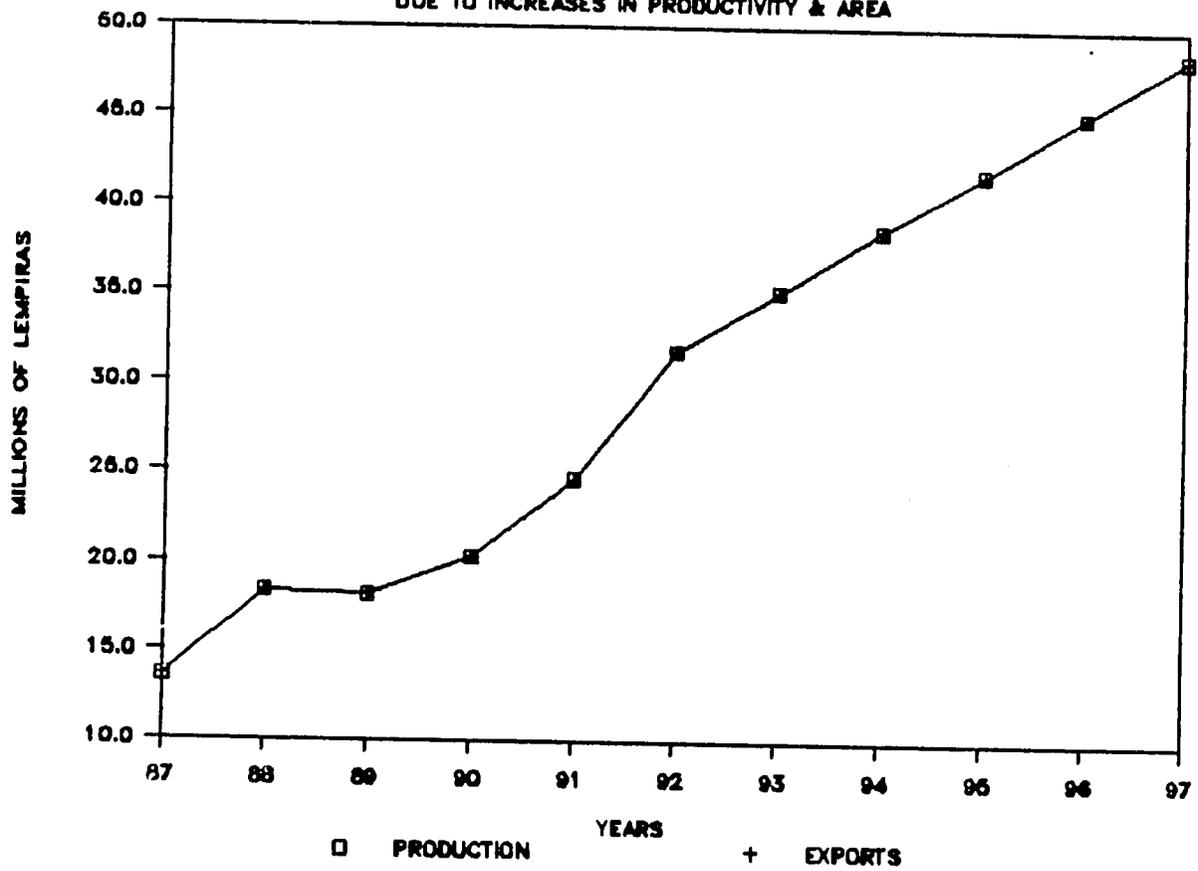
CROP:	VEGETABLES
PRODUCTION AREA (1987):	1,175 ha
PRODUCTION VALUE (1987):	13.6 M Lps
EXPORT VALUE (1987):	13.6 M Lps
EMPLOYMENT VALUE (1987):	4.7 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	74.8%
PRODUCTION AREA (1997):	3,350 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	186.3 M Lps
Due to production area:	106.6 M Lps
Due to productivity:	79.7 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	186.3 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	84.3 M Lps
MARKET(S) OF INTEREST:	U.S.

OBSERVATIONS:

The U.S. continues to be the most important market for fresh produce from Central America and the Caribbean. The best opportunities for exporting to the U.S. are encountered during the window that begins in December and ends in May. Proximity to the U.S., good port facilities, technical expertise, low labor costs, and adequate growing conditions all give Honduras advantages in this key market. "Fruta del Sol" in Comayagua and "CREHSUL" in Choluteca are major cooperative producers. Cucumbers and melons have been the predominant crops and production will likely expand, while new emphasis is being placed on tomato production in the Comayagua Valley. High transportation costs have been a major problem facing the vegetable industry in Honduras.

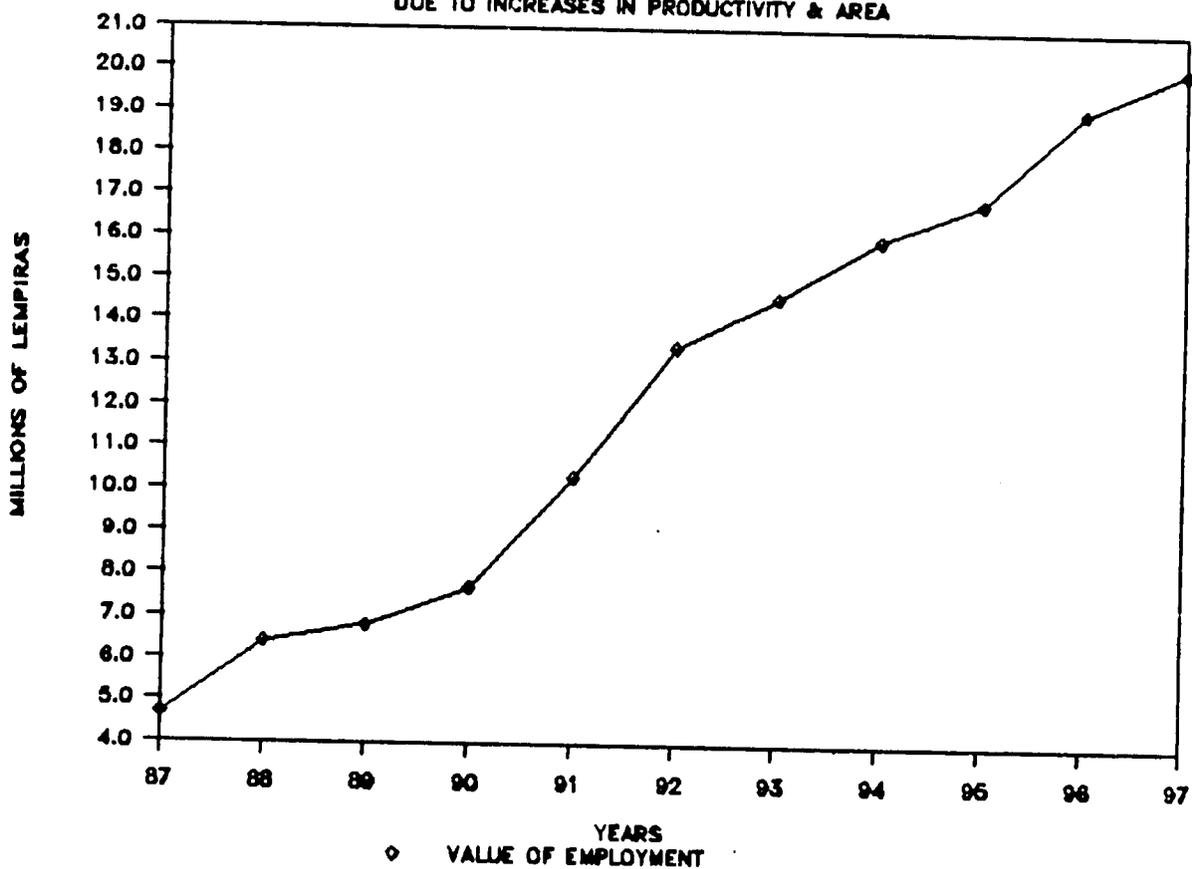
VEGETABLES: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



VEGETABLES: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



VEGETABLES: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	1175	-	13.6	-	13.6	-	4.7	-	470.5	-
1988	1585	410	18.4	4.8	18.4	4.8	6.4	1.7	634.7	164.1
1989	1700	115	18.2	4.6	18.2	4.6	6.8	2.1	680.7	210.2
1990	1800	100	20.3	6.7	20.3	6.7	7.7	3.0	772.2	301.7
1991	2250	450	24.6	11.0	24.6	11.0	10.3	5.6	1,029.6	559.1
1992	2750	500	31.8	18.2	31.8	18.2	13.4	8.7	1,337.0	866.6
1993	3000	250	35.1	21.5	35.1	21.5	14.6	9.9	1,458.6	988.1
1994	3100	100	38.6	25.0	38.6	25.0	16.0	11.3	1,595.9	1,125.4
1995	3100	-	41.8	28.2	41.8	28.2	16.9	12.2	1,684.6	1,214.0
1996	3350	250	45.1	31.5	45.1	31.5	19.1	14.4	1,916.2	1,445.7
1997	<u>3350</u>	-	<u>48.4</u>	<u>34.8</u>	<u>48.4</u>	<u>34.8</u>	<u>20.1</u>	<u>15.4</u>	<u>2,012.0</u>	<u>1,541.5</u>
		2175	322.3	186.3	322.3	186.3	131.3	84.3	-	-

Note: These totals do not include the 1987 base year.

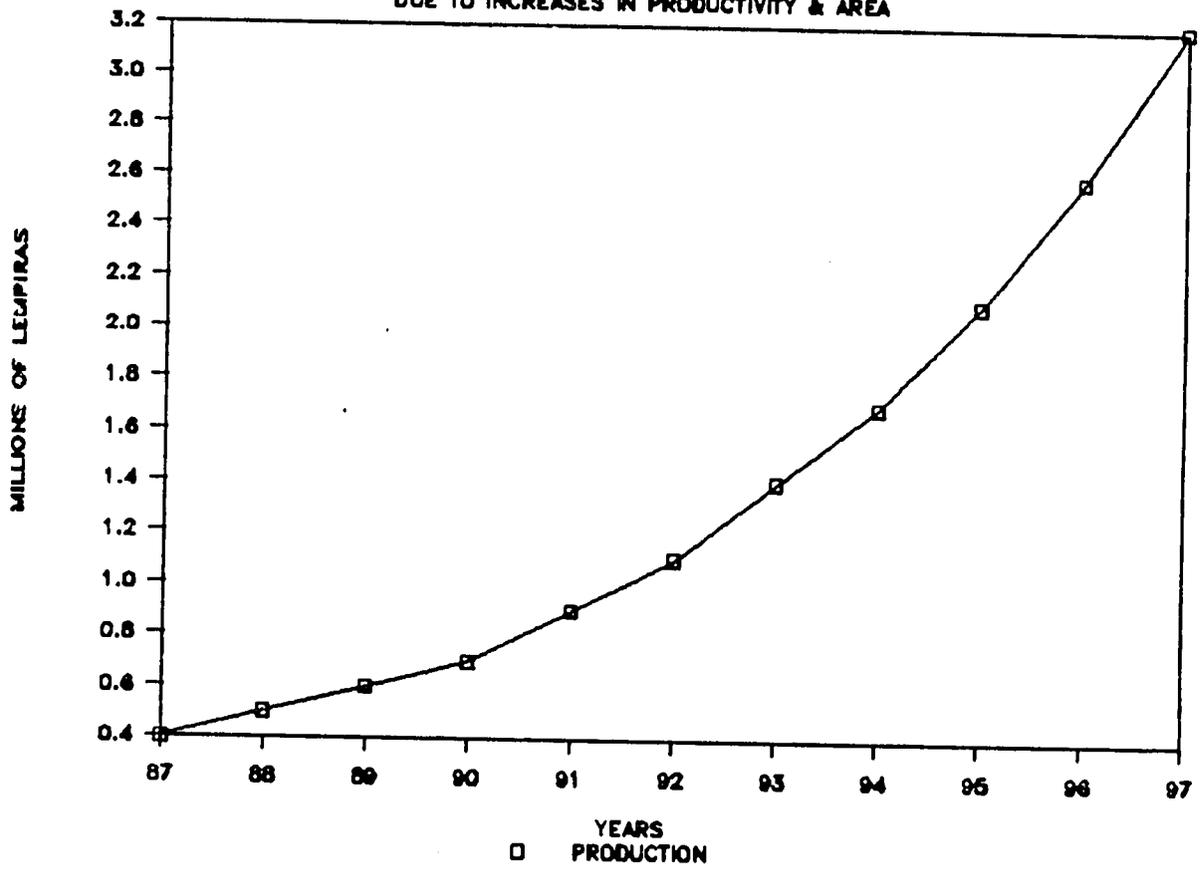
CROP:	SOYBEANS
PRODUCTION AREA (1987):	500 ha
PRODUCTION VALUE (1987):	0.4 M Lps
EXPORT VALUE (1987):	0
EMPLOYMENT VALUE (1987):	0.5 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	100%
PRODUCTION AREA (1997):	2,000 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	10.8 M Lps
Due to production area:	5.3 M Lps
Due to productivity:	5.5 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	0
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	6.6 M Lps
MARKET(S) OF INTEREST:	Domestic

OBSERVATIONS:

Limited domestic production, which has been influenced by a shortage of seed, inoculators, and machinery, is found mostly in the northern, central, and southern regions. Flatlands are available for production, and trials indicate that high yields can be obtained in Honduras. About 8,000 ha are needed to satisfy domestic needs, but expansion should be achieved slowly. Honduras annually imports \$5.0 to \$6.0 million of soybean oil, meal, and flour. Soybeans could be a key source of inexpensive protein for human consumption, but are currently used mainly for animal feed. Soybeans may also be used as a rotation crop.

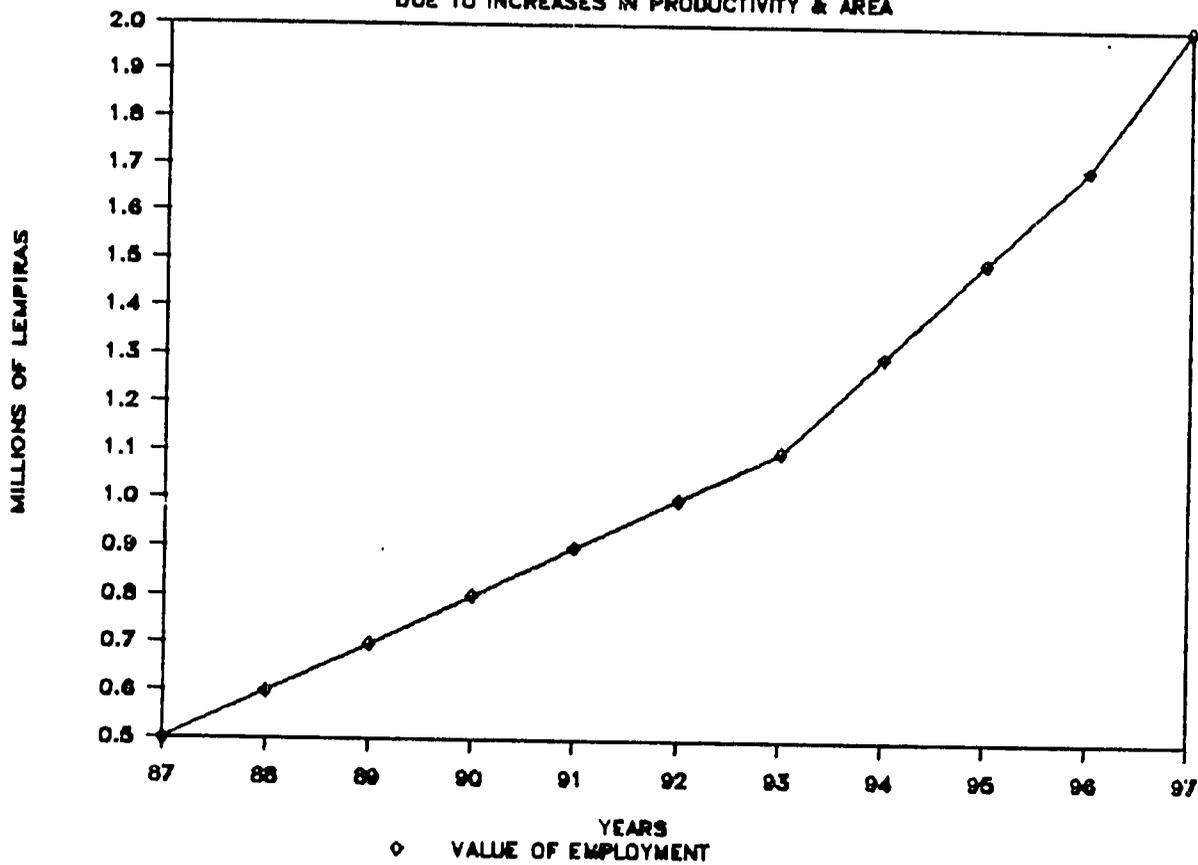
SOYBEANS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



SOYBEANS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



SOYBEANS: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	500.0	-	0.4	-	-	-	0.5	-	51.0	-
1988	574.3	74.3	0.5	0.1	-	-	0.6	0.1	58.6	7.6
1989	659.8	85.5	0.6	0.2	-	-	0.7	0.2	67.3	16.3
1990	757.9	98.1	0.7	0.3	-	-	0.8	0.3	77.3	26.3
1991	870.6	112.7	0.9	0.5	-	-	0.9	0.4	88.8	37.8
1992	1000.0	129.4	1.1	0.7	-	-	1.0	0.5	102.0	51.0
1993	1148.7	148.7	1.4	1.0	-	-	1.1	0.6	117.2	66.2
1994	1319.5	170.8	1.7	1.3	-	-	1.3	0.8	134.6	83.6
1995	1515.7	196.2	2.1	1.7	-	-	1.5	1.0	154.6	103.6
1996	1741.1	225.4	2.6	2.2	-	-	1.7	1.2	177.6	126.6
1997	<u>2000.0</u>	<u>258.9</u>	<u>3.2</u>	<u>2.8</u>	<u>-</u>	<u>-</u>	<u>2.0</u>	<u>1.5</u>	<u>204.0</u>	<u>153.0</u>
	-	1500.0	14.8	10.8	-	-	11.6	6.6	-	-

Note: These totals do not include the 1987 base year.

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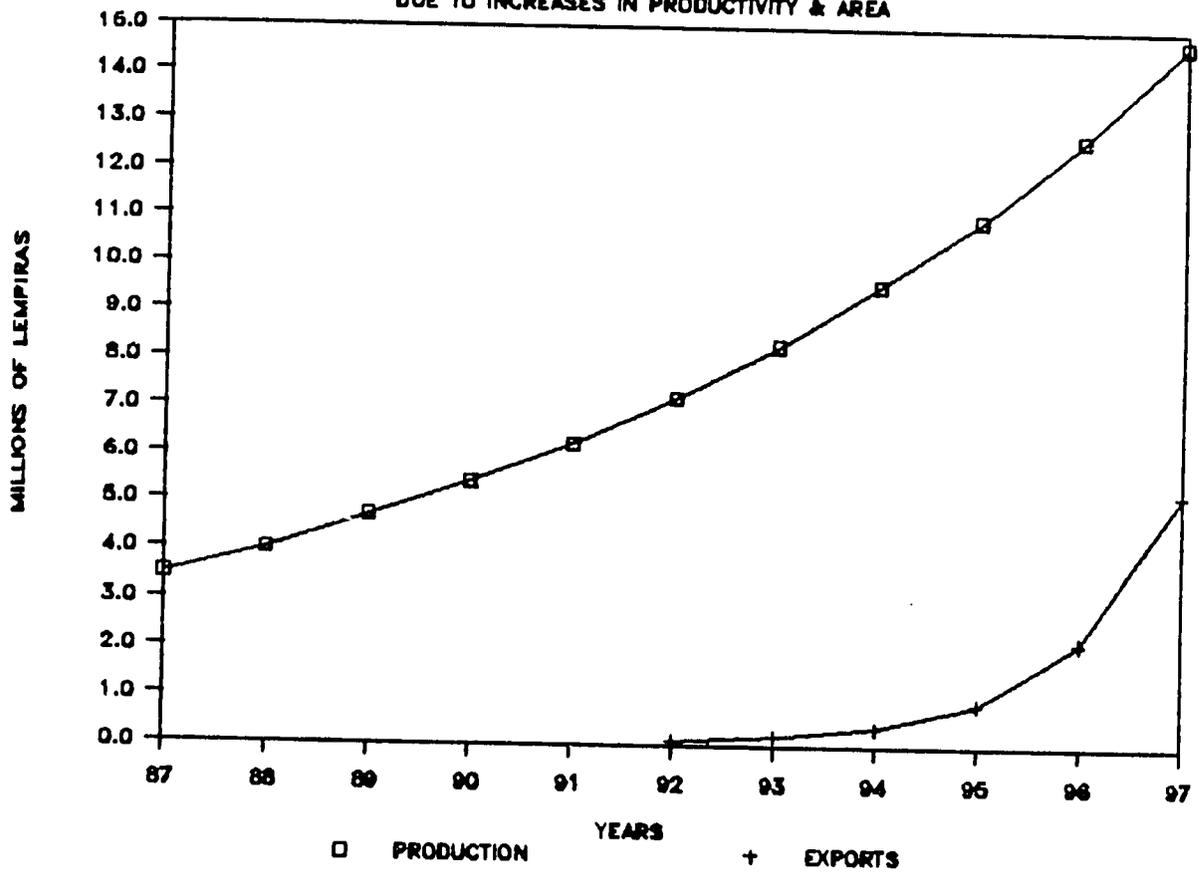
CROP:	MANGO
PRODUCTION AREA (1987):	500 ha
PRODUCTION VALUE (1987):	3.5 M Lps
EXPORT VALUE (1987):	0
EMPLOYMENT VALUE (1987):	0.5 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	40%
PRODUCTION AREA (1997):	1,500 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	48.8 M Lps
Due to production area:	34.8 M Lps
Due to productivity:	14.0 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	9.0 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	4.7 M Lps
MARKET (S) OF INTEREST:	Domestic, Central America, U.S., Europe and Canada

OBSERVATIONS:

Mango cultivation is mainly limited to small plots throughout Honduras, although it has been grown here for many years. Domestic and Central American markets have been the most important. The micro-climate that prevails in the central and southern regions from October to May give Honduras potential seasonal advantages over its competitors. Location gives Honduras transportation advantages in mango shipment. Additionally, Honduras possesses large and suitable areas for mango cultivation. Due to these factors, mango represents an export crop with great potential.

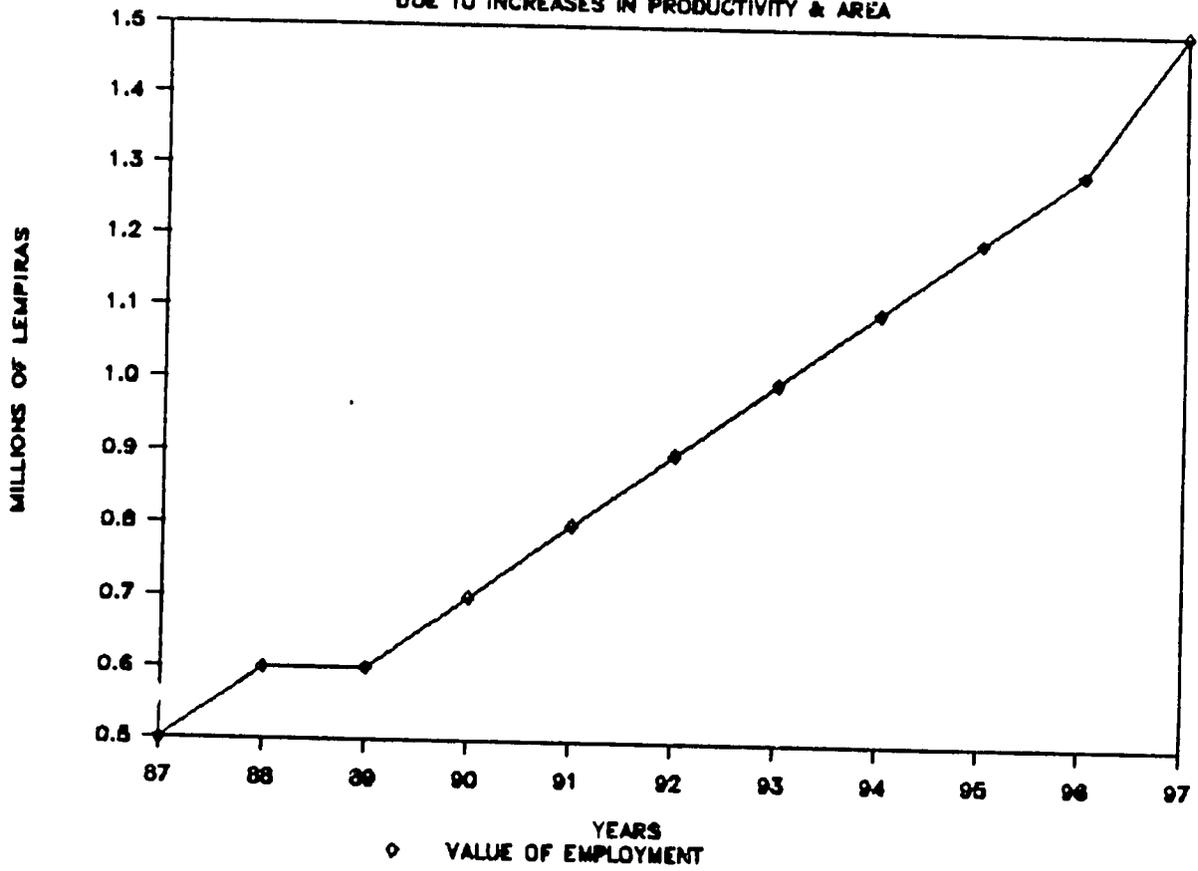
MANGO: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



MANGO: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



MANGO: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	500.0	-	3.5	-	-	-	0.5	-	44.0	-
1988	558.1	58.1	4.0	0.5	-	-	0.6	0.1	49.1	5.1
1989	622.9	64.8	4.7	1.2	-	-	0.6	0.1	54.8	10.8
1990	695.2	72.3	5.4	1.9	-	-	0.7	0.2	61.2	17.2
1991	775.9	80.7	6.2	2.7	-	-	0.8	0.3	68.3	24.3
1992	866.0	90.1	7.2	3.7	0.1	0.1	0.9	0.4	76.2	32.2
1993	966.6	100.6	8.3	4.8	0.2	0.2	1.0	0.5	85.1	41.1
1994	1078.8	112.2	9.6	6.1	0.4	0.4	1.1	0.6	94.9	50.9
1995	1204.1	125.3	11.0	7.5	0.9	0.9	1.2	0.7	106.0	62.0
1996	1343.9	139.8	12.7	9.2	2.2	2.2	1.3	0.8	118.3	74.3
1997	<u>1500.0</u>	<u>156.1</u>	<u>14.7</u>	<u>11.2</u>	<u>5.2</u>	<u>5.2</u>	<u>1.5</u>	<u>1.0</u>	<u>132.0</u>	<u>88.0</u>
	-	1000.0	83.8	48.6	9.0	9.0	9.7	4.7	-	-

Note: These totals do not include the 1987 base year.

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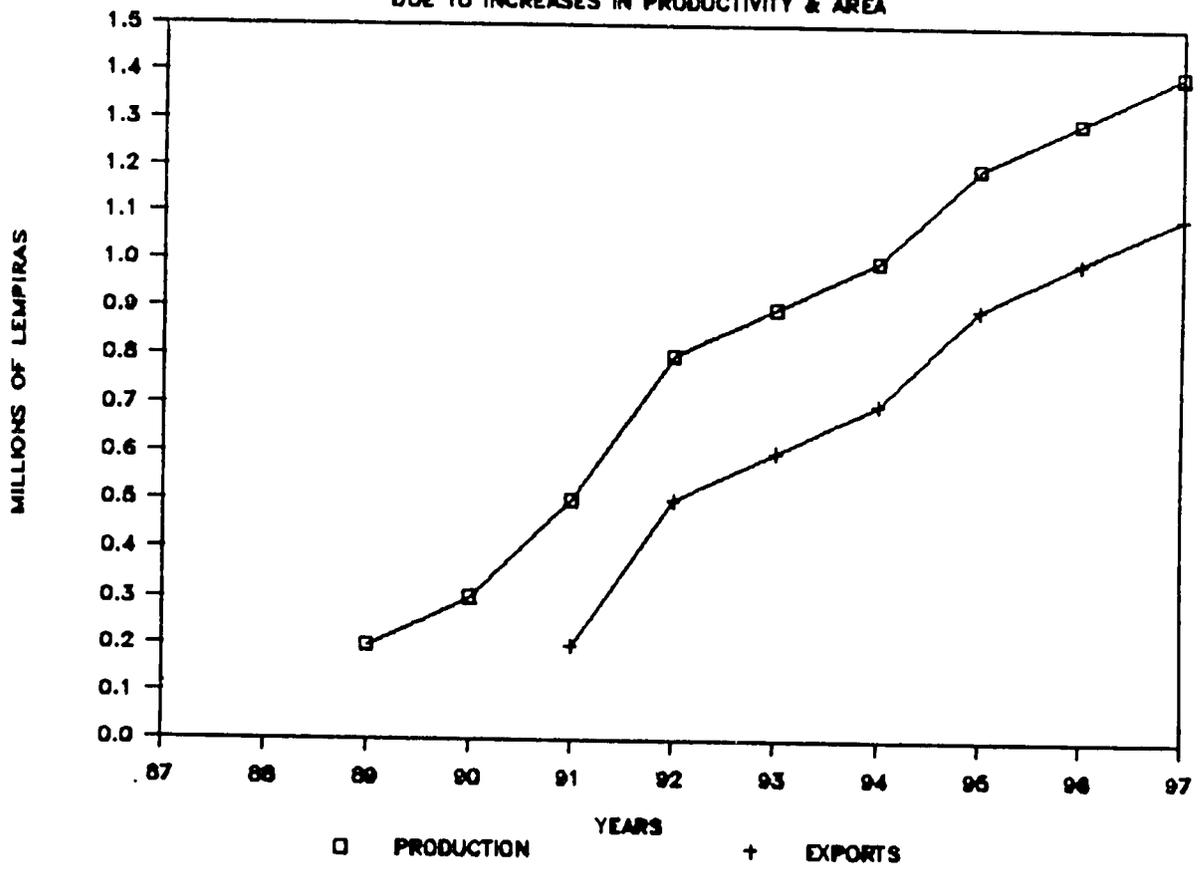
CROP:	BLACK PEPPER
PRODUCTION AREA (1987):	0.5 ha
PRODUCTION VALUE (1987):	0
EXPORT VALUE (1987):	0
EMPLOYMENT VALUE (1987):	0
INCREASE IN PRODUCTIVITY PER HA BY 1997:	0
PRODUCTION AREA (1997):	117.5 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	7.6 M Lps
Due to production area:	7.6 M Lps
Due to productivity:	0
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	5.0 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	3.0 M Lps
MARKET(S) OF INTEREST	U.S.

OBSERVATIONS:

Even though Honduras has potential for the production of black pepper, there are presently no commercial farms dedicated to this activity. The main export markets are the U.S., Singapore, the U.S.S.R., West Germany, and France, which account for two-thirds of the world's imports. Honduras has appropriate ecological conditions, low labor costs, adequate port facilities and proximity to the U.S. market. These factors provide a regional comparative advantage over Brazil, Malaysia, Indonesia, and Madagascar, which supply 95% of the world's total exports of black pepper.

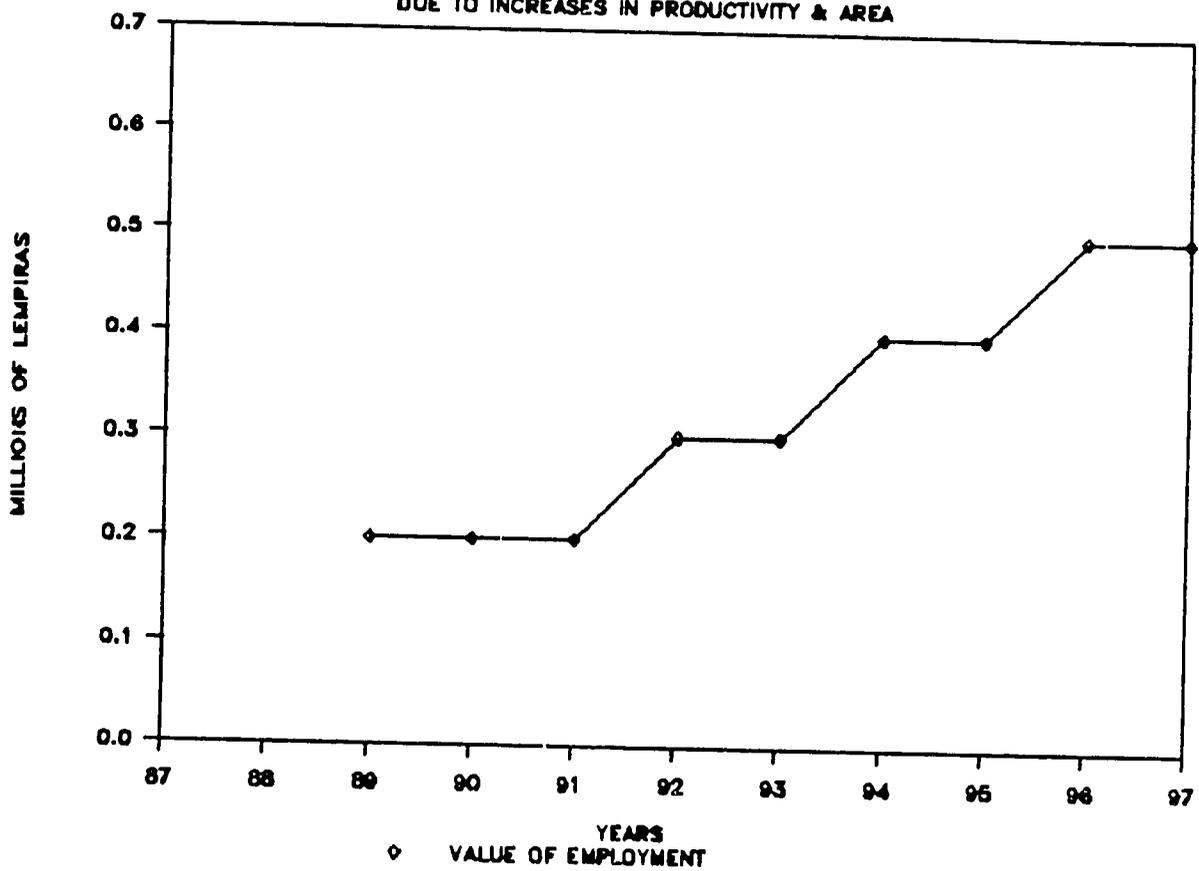
BLACK PEPPER: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



BLACK PEPPER: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



BLACK PEPPER: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	0.5	-	0.0	-	-	-	-	-	-	-
1988	2.5	2.0	0.0	-	-	-	-	-	0.2	-
1989	37.5	35.0	0.2	0.2	-	-	-	-	1.4	0.9
1990	47.5	10.0	0.3	0.3	-	-	0.2	0.2	16.1	15.9
1991	57.5	10.0	0.5	0.5	0.2	0.2	0.2	0.2	20.4	20.2
1992	67.5	10.0	0.8	0.8	0.5	0.5	0.2	0.2	24.7	24.5
1993	77.5	10.0	0.9	0.9	0.6	0.6	0.3	0.3	28.0	28.8
1994	87.5	10.0	1.0	1.0	0.7	0.7	0.3	0.3	33.3	33.1
1995	97.5	10.0	1.2	1.2	0.9	0.9	0.4	0.4	37.6	37.4
1996	107.5	10.0	1.3	1.3	1.0	1.0	0.4	0.4	41.9	41.7
1997	<u>117.5</u>	<u>10.0</u>	<u>1.4</u>	<u>1.4</u>	<u>1.1</u>	<u>1.1</u>	<u>0.5</u>	<u>0.5</u>	<u>46.2</u>	<u>46.0</u>
	-	117.0	7.6	7.6	5.0	5.0	3.0	3.0	-	-

Note: These totals do not include the 1987 base year.

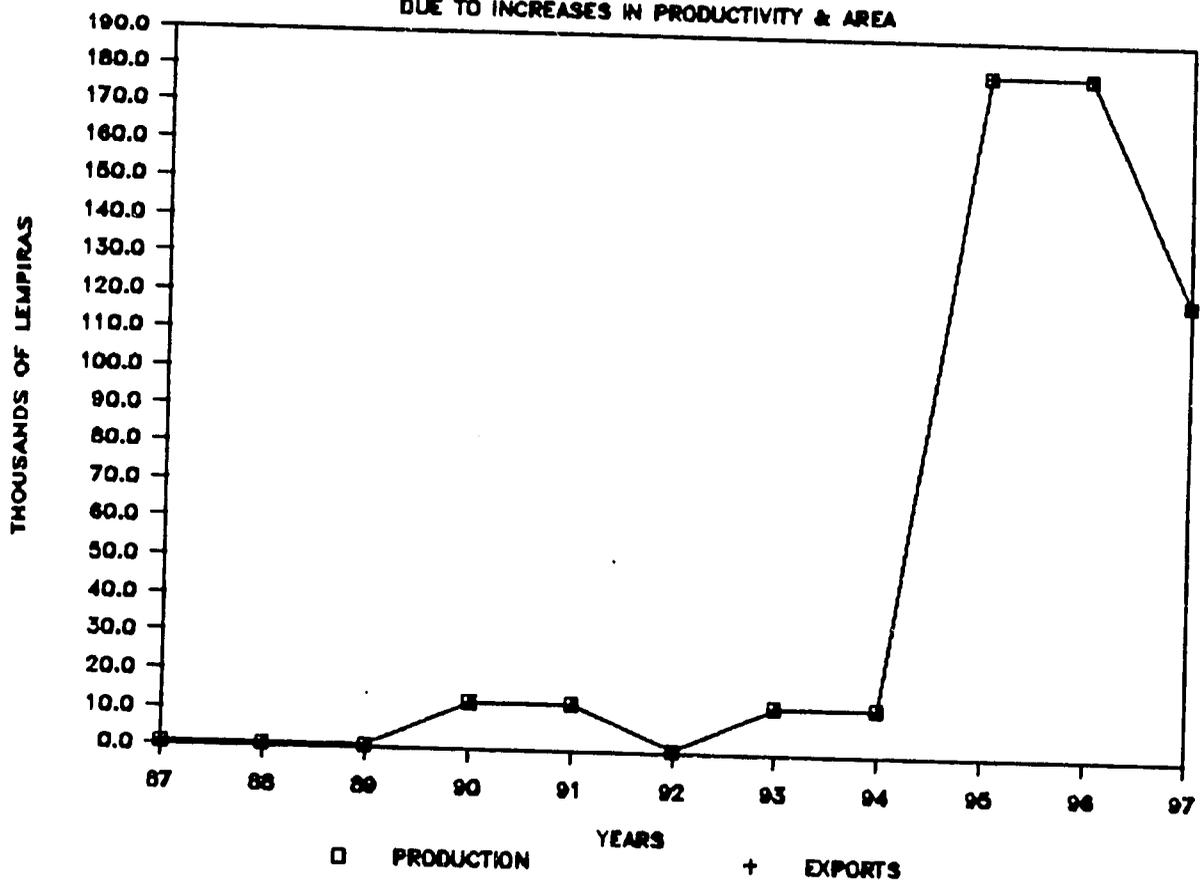
CROP:	PALM HEARTS
PRODUCTION AREA (1987):	0.5 ha
PRODUCTION VALUE (1987):	0.6 K Lps
EXPORT VALUE (1987):	0.6 K Lps
EMPLOYMENT VALUE (1987):	0.3 K Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	855%
PRODUCTION AREA (1997):	10.5 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	0.5 M Lps
Due to production area:	0.1 M Lps
Due to productivity:	0.4 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	0.5 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	59.2 K Lps
MARKET(S) OF INTEREST:	U.S., Canada

OBSERVATIONS:

Even though palm heart is not an important commercial crop in Honduras, the country has great potential for its production. The tropical climate of Honduras is excellent for fast-growing palms such as coconut, african palm, and coyol. Honduras has large natural stands of coyol, land available for palm tree production, low labor costs, and adequate port facilities that allow it to compete effectively in the U.S. fresh sweet flavor palm heart market. This market is currently being supplied by the Philippines, Indonesia, and Malaysia; it is estimated to be \$3.5 million per year and is growing.

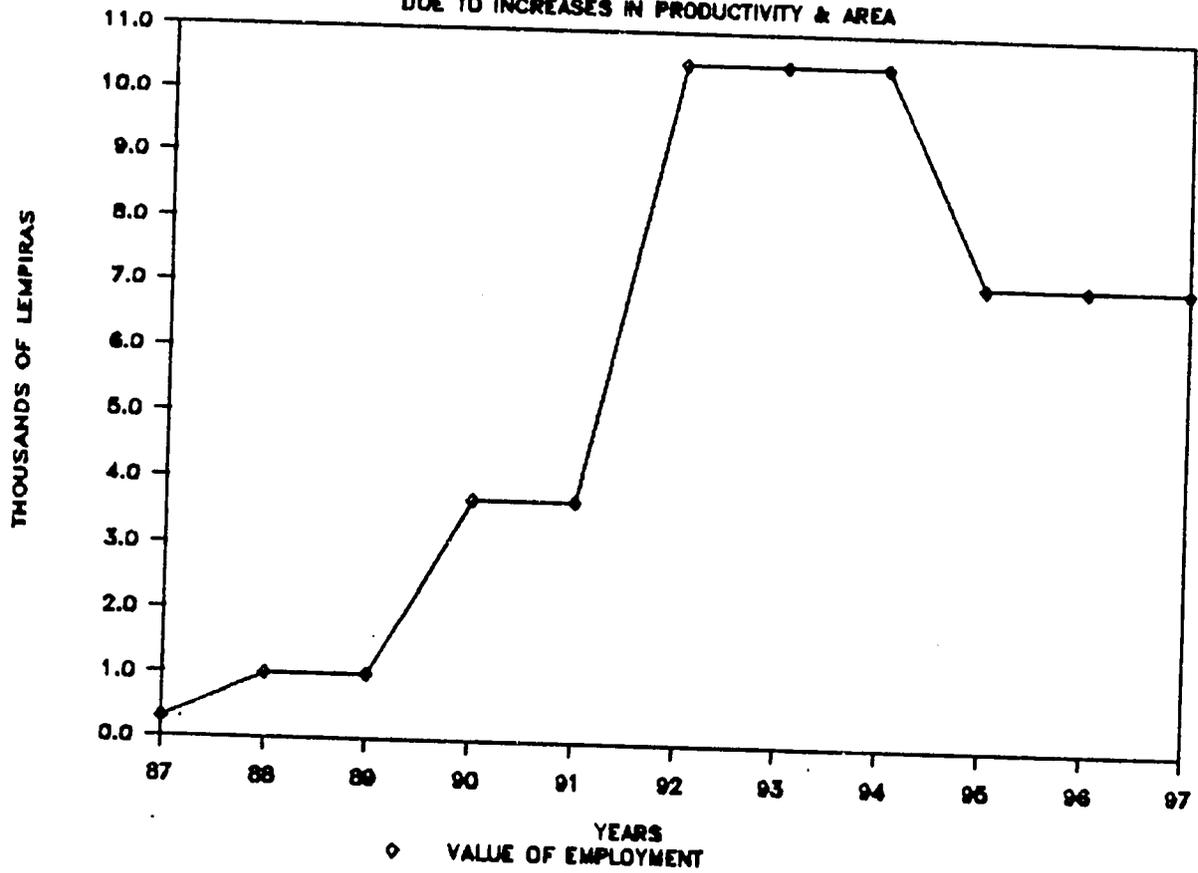
HEART OF PALM: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



HEART OF PALM: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



**PALM OF HEARTS: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN
PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997**

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Thousands Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Thousands Lps)	VALUE OF EXPORTS (Thousands Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Thousands Lps)	VALUE OF GENERATED EMPLOYMENT (Thousands Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Thousands Lps)	EMPLOYMENT IN MAN-DAYS	INCREASE IN EMPLOYMENT IN MAN-DAYS OVER 1987
1987	0.5	-	0.6	-	0.6	-	0.3	-	34	-
1988	1.5	1.0	0.6	-	0.6	-	1.0	0.7	102	68
1989	1.5	-	0.6	-	0.6	-	1.0	0.7	102	68
1990	5.5	4.0	12.6	12.0	12.6	12.0	3.7	3.4	374	340
1991	5.5	-	12.6	12.0	12.6	12.0	3.7	3.4	374	340
1992	15.5	10.0	0.6	-	0.6	-	10.5	10.2	1,054	1,020
1993	15.5	-	12.6	12.0	12.6	12.0	10.5	10.2	1,054	1,020
1994	15.5	-	12.6	12.0	12.6	12.0	10.5	10.2	1,054	1,020
1995	10.5	-	180.6	180.0	180.6	180.0	7.1	6.8	714	680
1996	10.5	-	180.6	180.0	180.6	180.0	7.1	6.8	714	680
1997	<u>10.5</u>	<u>-</u>	<u>120.6</u>	<u>120.0</u>	<u>120.6</u>	<u>120.0</u>	<u>7.1</u>	<u>6.8</u>	<u>714</u>	<u>680</u>
	-	15.0	534.0	528.0	534.0	528.0	62.2	59.2	-	-

Note: These totals do not include the 1987 base year.

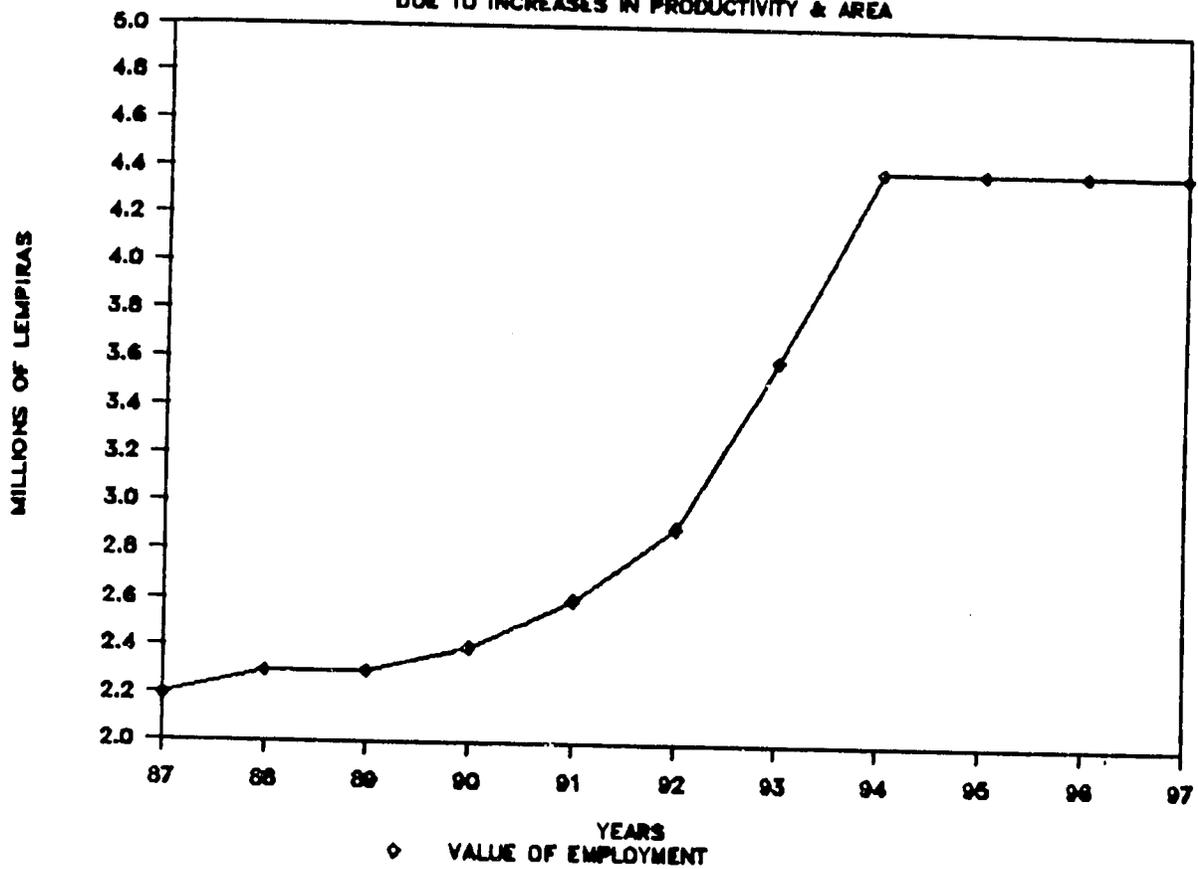
CROP:	PINEAPPLE
PRODUCTION AREA (1987):	3,000 ha
PRODUCTION VALUE (1987):	12.0 M Lps
EXPORT VALUE (1987):	11.0 M Lps
EMPLOYMENT VALUE (1987):	2.2 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	150%
PRODUCTION AREA (1997):	6,000 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	155.2 M Lps
Due to production area:	62.1 M Lps
Due to productivity:	93.1 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	142.3 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	11.7 M Lps
MARKET(S) OF INTEREST:	U.S.

OBSERVATIONS:

Pineapple production is concentrated on the north coast, primarily in the La Ceiba region and Yojoa area. International consultants are currently assisting FHIA in the evaluation of the potential for expanding production near Lake Yojoa. The U.S. is the major market for pineapple produced in Central America, South America, and the Caribbean. Per capita consumption of fresh pineapple has increased in the past ten years. Consumption of processed pineapple has also increased due to improved coring and shelling equipment. During 1984-1985, the total amount of pineapple imported in the U.S. was approximately 57,000 metric tons. It is important to mention that, between 1984 and 1985, Honduras was the major exporter of fresh pineapple to the U.S.

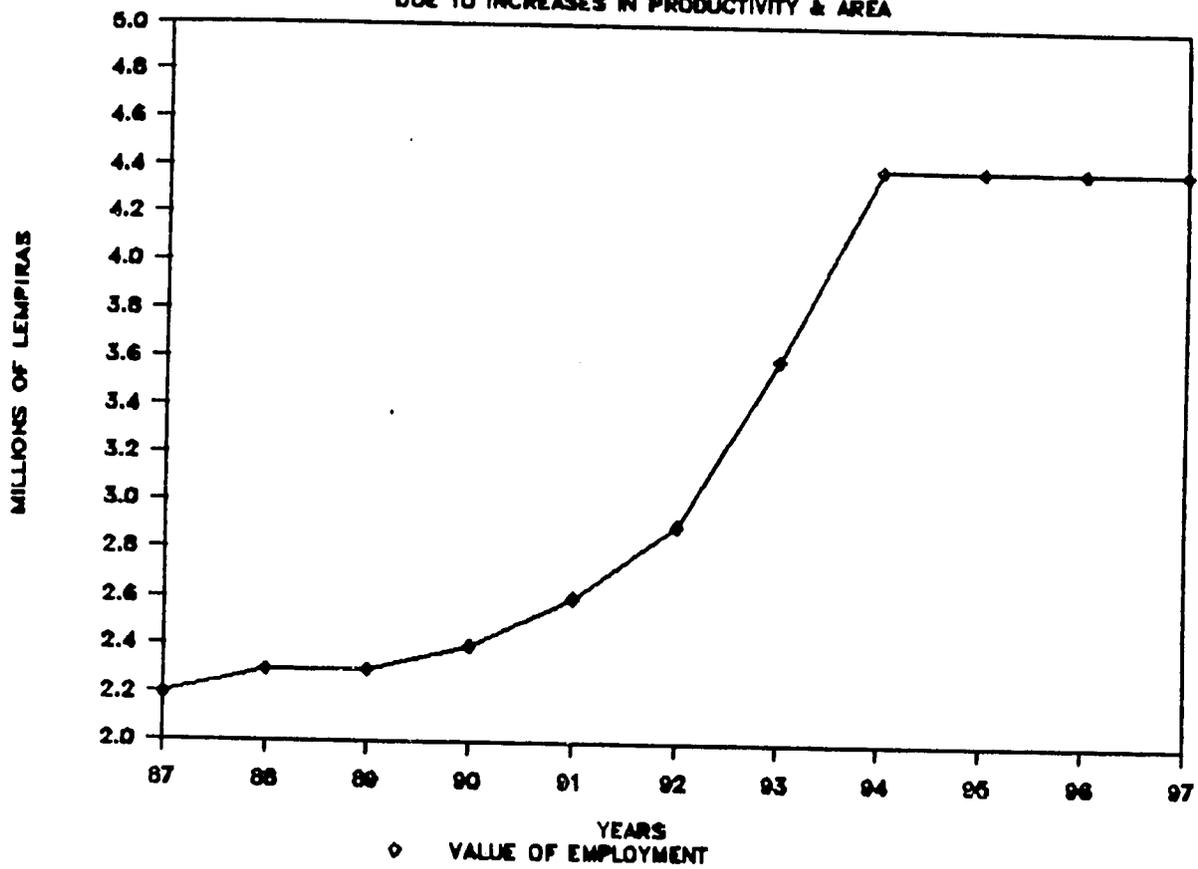
PINEAPPLES: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



PINEAPPLES: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



**PINEAPPLE: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN
PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997**

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	3,000	-	12.0	-	11.0	-	2.2	-	219.0	-
1988	3,100	100	12.0	-	11.0	-	2.3	0.1	226.3	7.3
1989	3,100	-	13.6	1.6	12.5	1.5	2.3	0.1	226.3	7.3
1990	3,300	200	12.0	-	11.0	-	2.4	0.2	240.9	21.9
1991	3,600	300	16.8	4.8	15.4	4.4	2.6	0.4	262.8	43.8
1992	4,000	400	16.8	4.8	15.4	4.4	2.9	0.7	292.0	73.0
1993	5,000	1,000	28.0	16.0	25.7	14.7	3.6	1.4	365.0	146.0
1994	6,000	1,000	28.0	16.0	25.7	14.7	4.4	2.2	438.0	219.0
1995	6,000	-	44.0	32.0	40.3	29.3	4.4	2.2	438.0	219.0
1996	6,000	-	44.0	32.0	40.3	29.3	4.4	2.2	438.0	219.0
1997	<u>6,000</u>	<u>-</u>	<u>60.0</u>	<u>48.0</u>	<u>55.0</u>	<u>44.0</u>	<u>4.4</u>	<u>2.2</u>	<u>438.0</u>	<u>219.0</u>
		3,000	275.2	155.2	252.3	142.3	33.7	11.7		

Note: These totals do not include the 1987 base year.

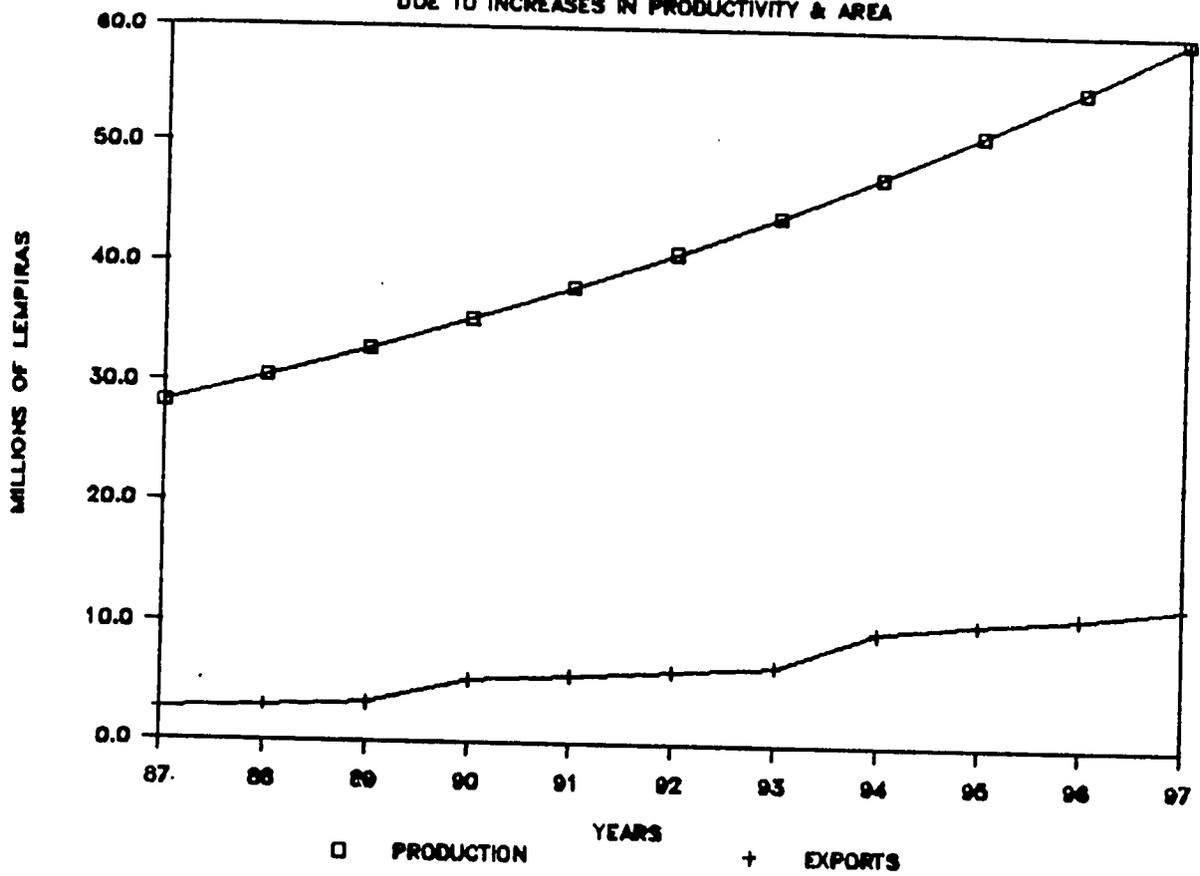
CROP:	PLANTAIN
PRODUCTION AREA (1987):	10,500 ha
PRODUCTION VALUE (1987):	28.3 M Lps
EXPORT VALUE (1987):	2.8 M Lps
EMPLOYMENT VALUE (1987):	12.7 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	50%
PRODUCTION AREA (1997):	15,000 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	152.6 M Lps
Due to production area:	101.6 M Lps
Due to productivity:	51.0 M Lps
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	44.7 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	28.6 M Lps
MARKET(S) OF INTEREST:	Central America, U.S.

OBSERVATIONS:

Plantain is grown within a large area along the Atlantic coast during the entire year. Current production is low, due to reduced yield, lack of drainage, and Black Sigatoka. Most of the plantain produced is consumed in the domestic market; Honduras exports about 10% of its plantain to the U.S. and El Salvador. In 1985, 10% of U.S. imports of plantains came from Honduras, and the U.S. market is expanding rapidly (57.8 K metric tons in 1975, 70.4 in 1980, and 97.8 in 1985). The Honduran plantain industry possesses comparative advantages in terms of proximity to the U.S., the recent spread of Black Sigatoka to competing countries (Ecuador, Colombia, and Venezuela), and seasonal windows.

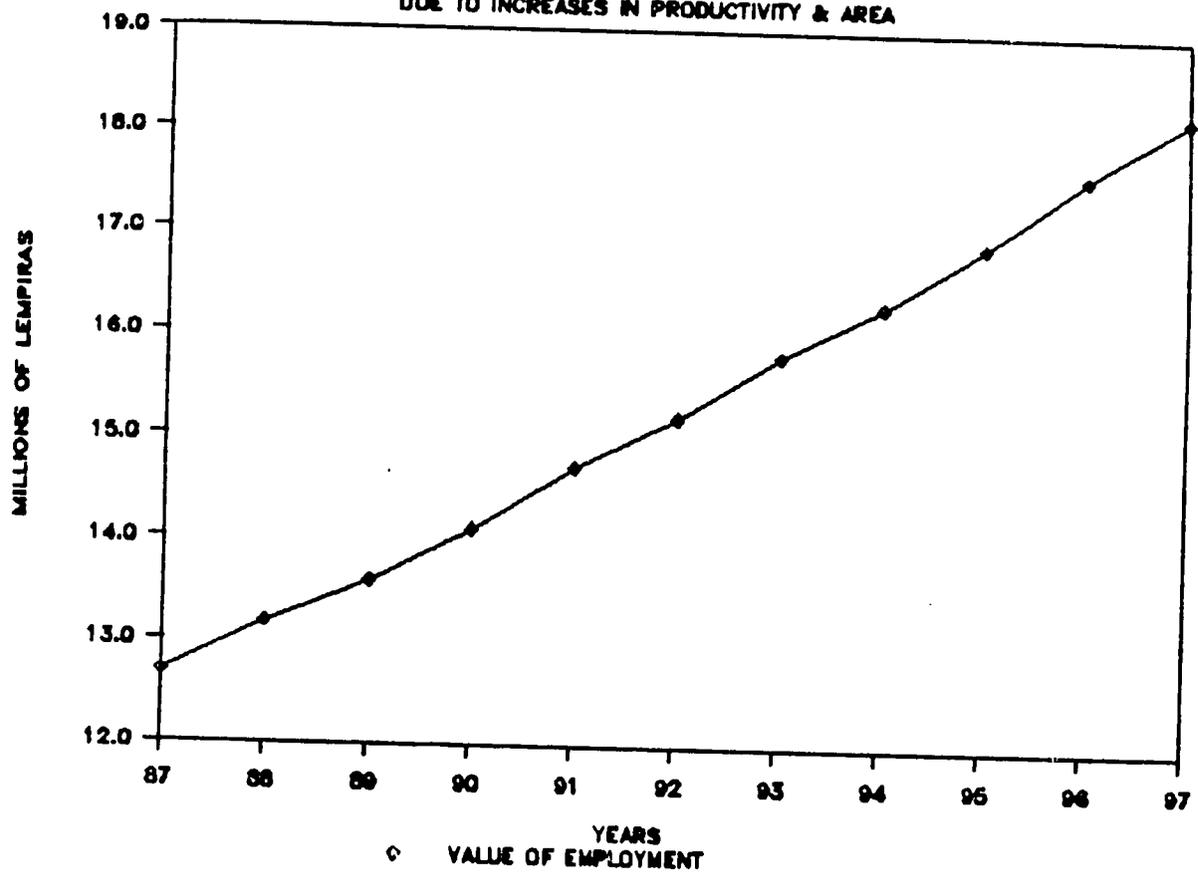
PLANTAINS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



PLANTAINS: ECONOMIC PROJECTIONS

DUE TO INCREASES IN PRODUCTIVITY & AREA



**PLANTAINS: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN
PRODUCTIVITY AND AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997**

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	10 500	-	28.3	-	2.8	-	12.7	-	1270.5	-
1988	10 881	381	30.5	2.2	3.0	0.2	13.2	0.5	1316.6	46.1
1989	11 276	395	32.8	4.5	3.3	0.5	13.6	0.9	1364.4	93.9
1990	11 686	409	35.4	7.1	5.3	2.5	14.1	1.4	1414.0	143.5
1991	12 110	424	38.1	9.8	5.7	2.9	14.7	2.0	1465.3	194.8
1992	12 550	440	41.0	12.7	6.1	3.3	15.2	2.5	1518.5	248.0
1993	13 006	456	44.2	15.9	6.6	3.8	15.8	3.1	1573.7	303.2
1994	13 478	472	47.6	19.3	9.5	6.7	16.3	3.6	1630.8	360.3
1995	13 967	489	51.3	23.0	10.3	7.5	16.9	4.2	1690.0	419.5
1996	14 474	507	55.2	26.9	11.0	8.2	17.6	4.9	1751.4	480.9
1997	<u>15 000</u>	<u>526</u>	<u>59.5</u>	<u>31.2</u>	<u>11.9</u>	<u>9.1</u>	<u>18.2</u>	<u>5.5</u>	<u>1815.0</u>	<u>544.5</u>
	-	4500	435.6	152.6	72.8	44.7	155.6	28.6		

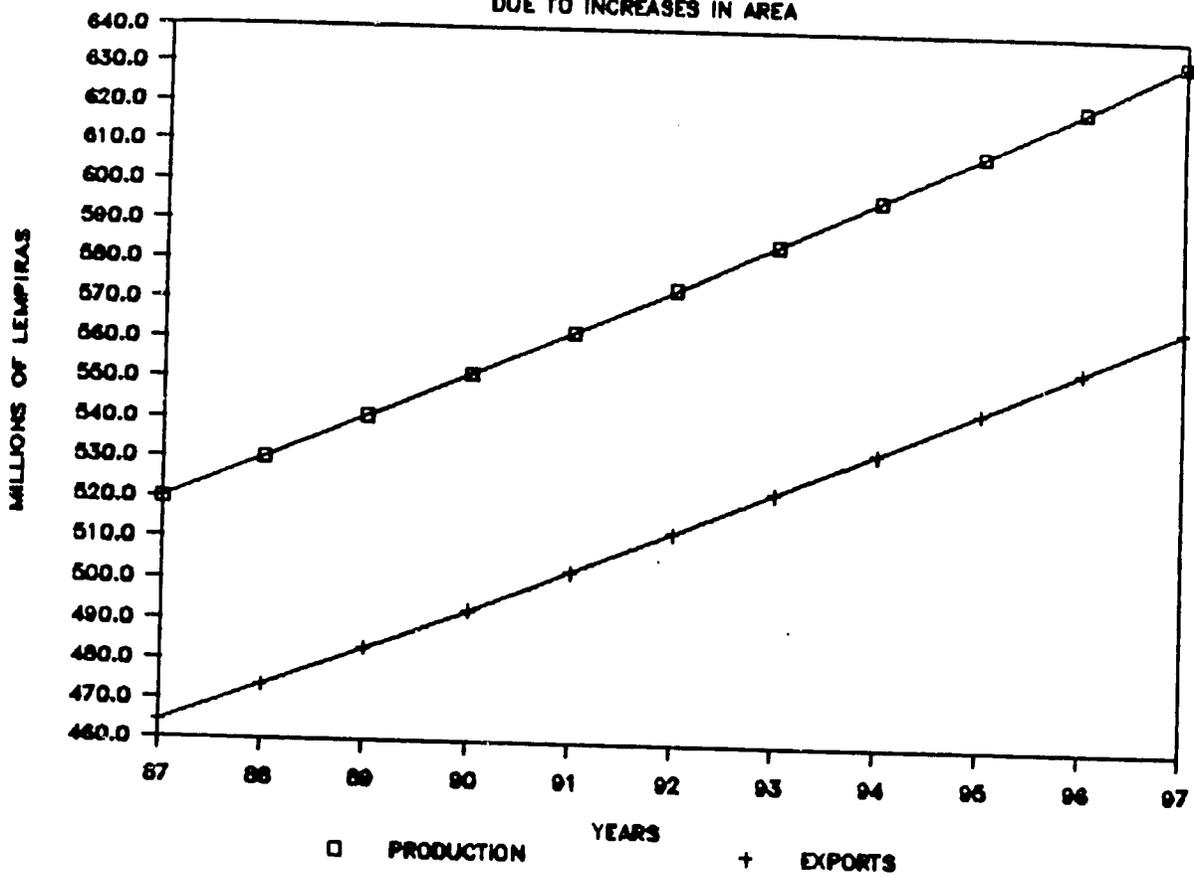
Note: These totals do not include the 1987 base year.

CROP:	BANANAS
PRODUCTION AREA (1987):	20,300 ha
PRODUCTION VALUE (1987):	520 M Lps
EXPORT VALUE (1987):	454.5 M Lps
EMPLOYMENT VALUE (1987):	62.9 M Lps
INCREASE IN PRODUCTIVITY PER HA BY 1997:	0
PRODUCTION AREA (1997):	24,744 ha
ACCUMULATED ADDITIONAL PRODUCTION VALUE BY 1997:	607.4 M Lps
Due to production area:	607.4 M Lps
Due to productivity:	0
ACCUMULATED ADDITIONAL EXPORT VALUE BY 1997:	542.5 M Lps
ACCUMULATED ADDITIONAL EMPLOYMENT VALUE BY 1997:	73.8 M Lps
MARKET(S) OF INTEREST:	U.S. and Europe

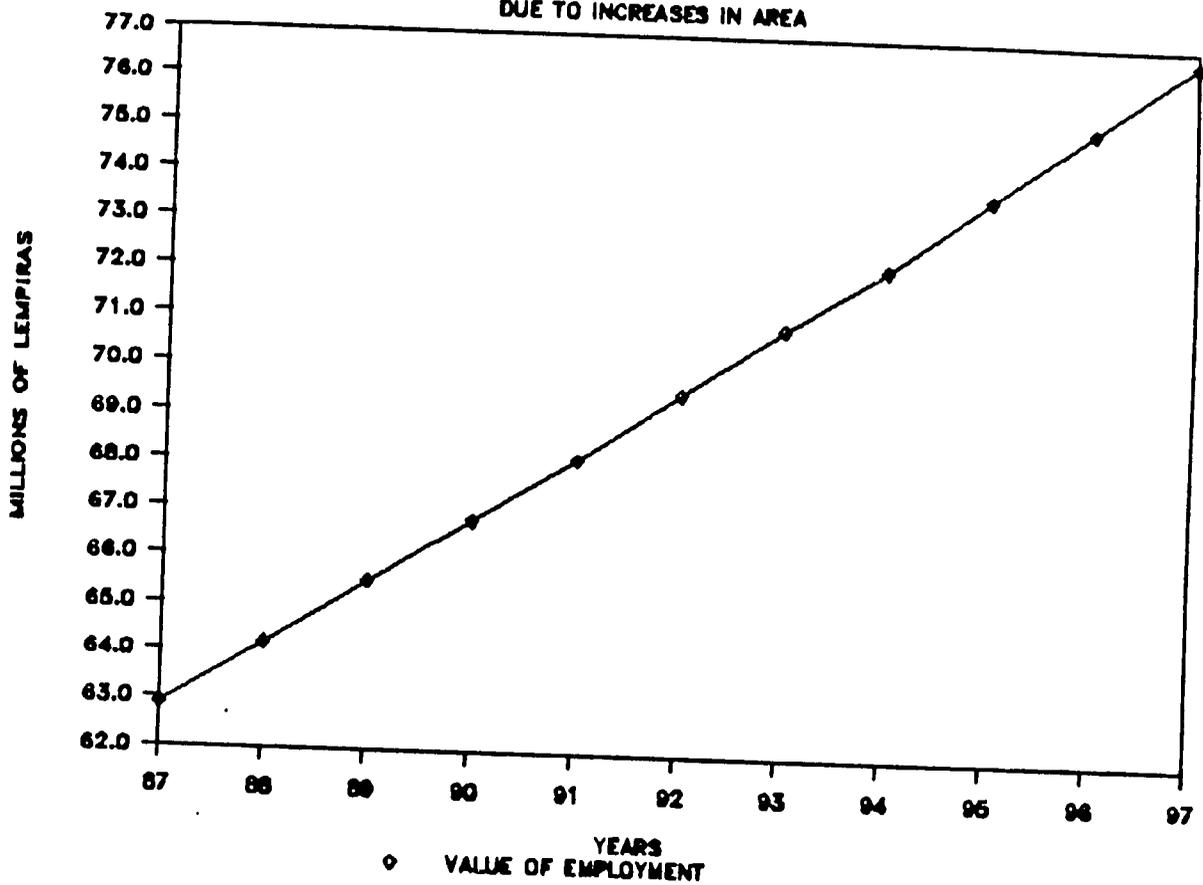
OBSERVATIONS:

Bananas is the country's most important crop and accounts for approximately 25% of the value of the nation's total exports. Based upon historical patterns of production and marketing of bananas, it is expected that United Brands, Standard Fruit Company, and Del Monte will continue to be the dominant forces behind the management, transportation, marketing, and financial aspects of the banana industry in Honduras. Revenues from bananas will represent a large portion of Honduran agricultural exports during the foreseeable future.

BANANAS: ECONOMIC PROJECTIONS DUE TO INCREASES IN AREA



BANANAS: ECONOMIC PROJECTIONS DUE TO INCREASES IN AREA



BANANAS: PROJECTIONS OF THE ECONOMIC AND SOCIAL BENEFITS IN HONDURAS INCLUDING INCREASES IN AREAS UNDER CULTIVATION ATTRIBUTABLE TO FHIA'S PARTICIPATION, 1988-1997

Years	CULTIVATED AREA (ha)	ANNUAL INCREASE IN CULTIVATED AREA (ha)	GROSS VALUE OF PRODUCTION (Millions of Lps)	INCREASE IN THE GROSS VALUE OF PRODUCTION OVER 1987 (Millions of Lps)	VALUE OF EXPORTS (Millions of Lps)	INCREASE IN THE VALUE OF EXPORTS OVER 1987 (Millions of Lps)	VALUE OF GENERATED EMPLOYMENT (Millions of Lps)	INCREASE IN THE VALUE OF GENERATED EMPLOYMENT OVER 1987 (Millions of Lps)	EMPLOYMENT IN THOUSANDS OF MAN-DAYS	INCREASE IN EMPLOYMENT IN THOUSANDS OF MAN-DAYS OVER 1987
1987	20300	-	520.0	-	464.5	-	62.9	-	6293.0	-
1988	20706	406	530.4	10.4	473.8	9.3	64.2	1.3	6418.9	125.9
1989	21120	414	541.0	21.0	483.3	18.8	65.5	2.6	6547.2	254.2
1990	21542	422	551.8	31.8	492.9	28.4	66.6	3.9	6678.0	385.0
1991	21973	431	562.8	42.8	502.7	38.2	68.1	5.2	6811.6	518.6
1992	22412	439	574.1	54.1	512.8	48.3	69.5	6.6	6947.7	654.7
1993	22860	448	585.6	65.6	523.1	58.6	70.9	8.0	7086.6	793.6
1994	23317	457	597.3	77.3	533.5	69.0	72.2	9.3	7228.3	935.3
1995	23783	466	609.2	89.2	544.2	79.7	73.7	10.8	7372.7	1079.7
1996	24259	476	621.4	101.4	555.1	90.6	75.2	12.3	7520.3	1227.3
1997	<u>24744</u>	<u>485</u>	<u>633.8</u>	<u>113.8</u>	<u>566.1</u>	<u>101.6</u>	<u>76.7</u>	<u>13.8</u>	<u>7670.6</u>	<u>1377.6</u>
		4444	5807.4	607.4	5187.5	542.5	702.8	73.8		

Note: These totals do not include the 1987 base year.

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IV. Research Programs and Communication Activities

Different from academic institutes of research, FHIA is a highly pragmatic organization that focuses efforts in identifying and resolving constraints to the expansion of production increase in productivity, improvement of quality and practicability of marketing of selected agricultural crops for food and export.

Research Programs

Research at this Foundation is of a very applied nature. Furthermore, FHIA intends, in some cases, to bring into Honduras (when available from other countries) technological innovations developed elsewhere for testing and adaptation under growing conditions in Honduras (ex. cultural practices in cacao). In other cases, production systems and their components will be developed locally to best suit the local circumstances (e.j. cropping systems in plantain) and resolve local problems. In other few occasions it may be necessary to conduct a limited amount of in-depth research to deal with a specific problem (e.j. isolation of toxins of black Sigatoka) that is essential to resolving a production problem.

In special cases, it will be necessary to contract out or enter into cooperative agreements with universities or research institutes in developed countries to deal with a special problem that requires more basic research (e.j. genetic mechanisms of inheritance of resistance to black Sigatoka).

Additional detail regarding FHIA's research philosophy and plans for the next five years on a program basis, are given in the document of the "Plan Estratégico Quinquenal 88-92".

Communication Activities

The ultimate clientele of FHIA are the producers themselves to whom the research results must be made available for their application to increase productivity and quality of their products for export. As much as limited resources allow, FHIA will make direct transfer contract with producers. Furthermore, other audiences are very important to FHIA and these include: extension personnel of other organizations, leaders of farmer's associations, businessmen and industrialists and decision-makers in the public and private sector.

To reach these audiences, FHIA has included a Communication Division that will produce printed, visual and audio information materials, will organize and conduct training courses and conferences of various kinds, operate a library and documentation service, and offer to visitors and to the general public, information about FHIA, its services and the technology it has available.

This communication division is intended to work closely with the research programs and departments involving the active participation of the scientific staff of the Foundation and to draw upon them for information as well as to assist and support them to channel information to the audiences of FHIA.

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Further details on the communication activities philosophy and plans are given in the Communication Strategy Document and in the "Plan Quinquenal 88-93".

V. Financial Needs, Budget and Future Projection

The financial needs of a research organization are necessarily a function of the magnitude of the task given to in her mandate. This magnitude in FHIA's case was not really known when the original plans were made. Presently, the experience of the first three years has allowed FHIA's management to assess the cost of its research responsibilities with closer certainty. The table in the following page shows the budget costs in the first three years and a projection of need from 1988 to 1993. Also shown are the amounts of secured funds available (so far from AID, the government of Honduras and smaller grants from UPEB, Government of Ecuador, IDRC-Canada and few others). The differences are the amounts of additional funding to be obtained.

Basal funds were appropriated by AID in the order of twenty million dollars over a ten-year period and a contribution of the government of Honduras was added in the order of US\$100,000 per year. Figure 1 shows how the real value of these funds is affected by inflation (7%

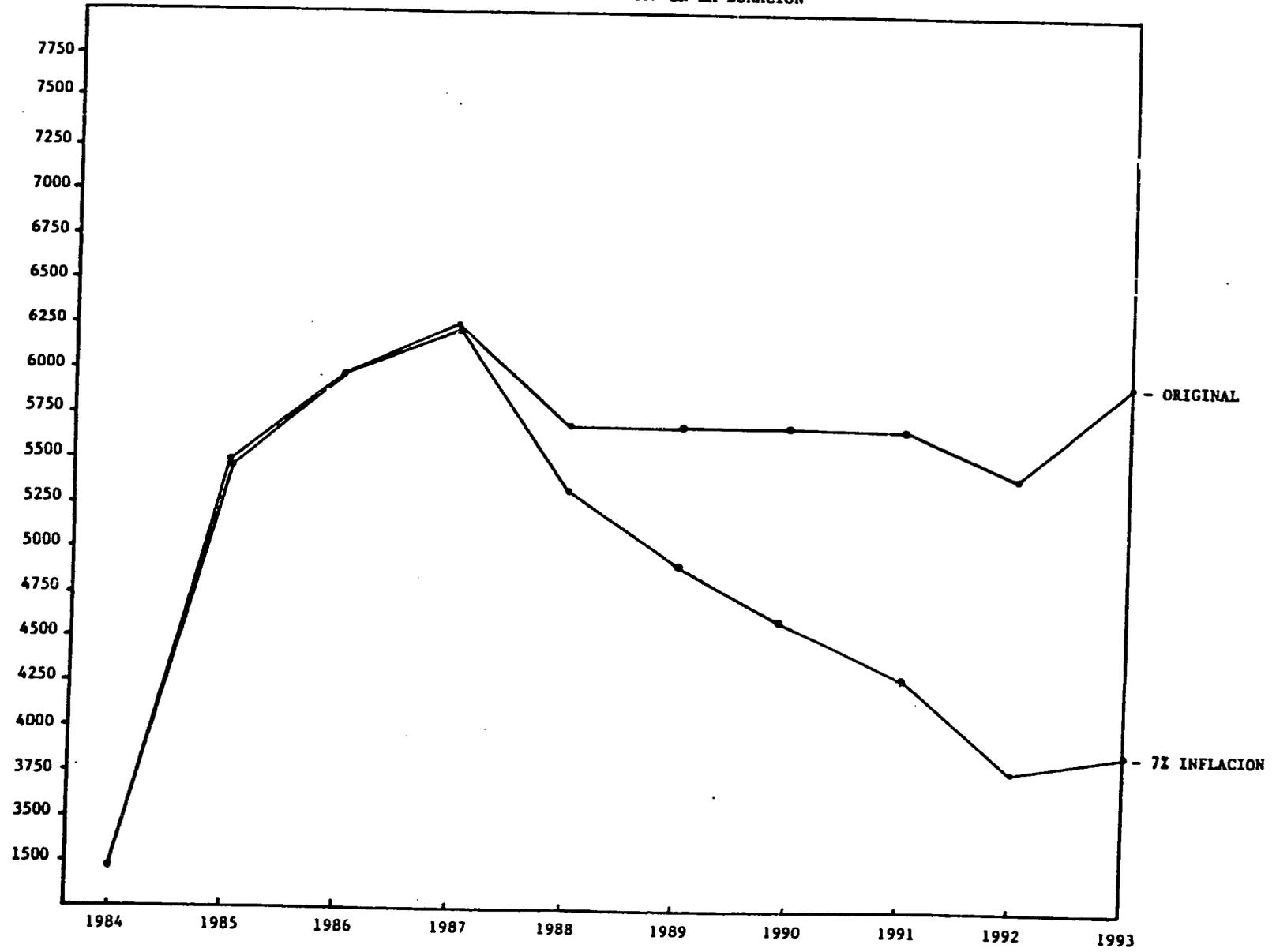
FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA

Table No. _____ Secured income (on September 1987: donations AID, GOH, sales technical services, others) actual and projected expenditures and difference to be raised period 1984-1993.

(In 000's Lempiras)

<u>YEAR</u>	<u>INCOME</u>	<u>EXPENDITURES</u>	<u>DIFFERENCE</u>
1984	1460	---	(1460)
1985	5465	3131	(2334)
1986	5965	7214	(1249)
1987	6385	8848	(2463)
1988	5700	10400	(4700)
1989	5700	11940	(6240)
1990	5700	13630	(7930)
1991	5700	15995	(10295)
1992	5400	17650	(12250)
1993	5940	19420	(13480)

FIG.1. EFECTO DE LA INFLACION EN LA DONACION



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per year) from the present until the 10th year of the project.

Those funds for the first two years, while the Foundation initiated its organization, staffing and operations, were ample and, in fact, allowed for a surplus that constituted a reserve until 1985 that is now being used up in 1987 and as Figure 2 shows leaves a short fall of funds for 1988 on.

It may be argued that FHIA could budget its resources staying within funds available that is in the order of 2.5 million dollars per year this indeed is an alternative. However, doing so would result in a collection of weak programs at FHIA given the fact that its commodity mandate had been fixed from the start.

Departing from the fact that FHIA's mandate had been fixed in the project document and in the assembly of founders budgeting for 1986 and 1987 was based on the question: What financial resources are needed to comply with the mandate at a minimum level and at an acceptable level? The budget exercise for 1987 turned out a requirement of six million dollars at the acceptable level which were reduced to eight million at the minimum level. These figures were based on previous characterization surveys on each commodity conducted during 1985 and 1986 that allowed the identification of researchable problems that constitute serious constraints to production for export. Documentation on these problems is available.

The tables in the next four pages show the current (1987) budget and the following two pages show the preliminary budget figures for 1988 and 1989. These budget totals are shown in Figure 2 contrasting with a curve showing the projected needs of FHIA through the end of the century and the funds secured until 1984.

It may be contended that FHIA has grown too much too fast in its first three years since its budget expenditures exceed basal funding in 1987 and show a short fall in 1988 and beyond. On the other hand, by measure of "what is needed to accomplish the mandate task", it may be concluded that FHIA is grossly underfunded (remember that the funding requirement was not shown during the planning stage). A look at the figures of the table on distribution of personnel, reveals that the numbers of professional and support staff are not only minimal but in fact, below sufficiency for an adequate job of the mandated tasks. Also, the proportion of the budget spend in administration (21% vs. research and communication) shows a very efficient operation with no waste of funds.

The only way FHIA could operate with a lesser budget would be to reduce the number of commodity programs to perhaps four instead of the present six. The alternatives imply increasing the funding.

FUNDACION HONDURENA DE INVESTIGACION AGRICOLA
Presupuesto Operacion y Capital
1986-1987
(En Miles de Lempiras)

	OPERACION		CAPITAL		1986	TOTAL		%
	1986	1987	1986	1987		1986	1987	
DIV. INVESTIGACION								
Dirección		262	1	10	1	272		3.1
Programas								
Cítricos	191	212	38	0	229	212		2.4
Cacao	202	204	43	22	245	226		2.6
Platano	214	258	55	24	269	282		3.2
Hortalizas	99	143	19	32	117	175		2.0
Diversificación	249	280	29	20	278	300		3.4
Genética Banano/Plat	539	580	17	0	556	580		6.6
Total Programas	1,494	1,678	201	98	1,695	1,775		20.1
Departamentos								
Agronomía	569	445	128	20	697	465		5.3
Patología	316	387	97	40	413	427		4.8
Entomología	375	371	89	17	464	388		4.4
Economía Agrícola	162	264	36	23	198	287		3.2
Fisiología	8	20	0	68	8	88		1.0
Biometría	5	228	0	75	5	303		3.4
Ing. Agrícola	136	366	96	13	232	379		4.3
Total Depto.	1,571	2,081	447	256	2,017	2,337		26.4
Servicios Análiticos								
Lab. Químico Agrícola	341	346	56	76	397	422		4.8
Lab. Análisis Residual	106	73	221	4	328	78		0.9
Lab. Bajo Aguan	8	20	0	30	8	50		0.6
Total Serv. Anál.	455	440	277	110	732	550		6.2
Total DIV. INV.	3,520	4,461	925	474	4,445	4,934		55.8
DIVISION DE COMUNICACION								
Dirección	139	29	0	20	139	49		0.6
Producción	0	264	37	15	37	279		3.2
Capacitación y Redes	0	117	0	30	0	147		1.7
Biblioteca	44	162	2	10	46	172		1.9
Asistencia Técnica	307	671	0	522	307	1,193		13.5
Total DIV. COM.	489	1,243	39	597	528	1,840		20.8
DESARROLLO	0	146	0	0	0	146		1.7
ADMINISTRACION								
Dirección	1,836	533	329	27	2,165	560		6.3
Finanzas	0	211	0	13	0	223		2.5
Personal	0	122	36	7	36	129		1.5
Mantenimiento	40	337	0	40	40	377		4.3
Serv. y Suministros	0	359	0	20	0	379		4.3
Asesoría y Evaluación	0	260	0	0	0	260		2.9
Total ADMON.	1,875	1,821	366	106	2,241	1,927		21.8
GRAN TOTAL	5,884	7,671	1,329	1,177	7,214	8,848		100.0

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA
FHIA

Distribución de Personal
Agosto 31, 1987

	Personal Profesional	Personal de apoyo	Aspirantes	Total
Dirección General	1	2	-	3
Dirección Div. de Investigación	1	2	-	3
Departamentos:				
Agronomía	3	4	6	13
Patología	3	7	6	16
Entomología	3	4	6	13
Economía Agrícola	5	2	-	7
Ingeniería Agrícola	4	2	9	15
Biometría y Computo	2	1	-	3
Programas:				
Citricos	2	1	1	4
Cacao	3	-	18	21
Plátano	2	3	18	23
Hortalizas	2	2	-	4
Diversificación	2	3	3	8
Genética	2	5	19	26
Proyectos:				
Horticultura	3	5	-	8
Servicios Auxiliares:				
Lab. Químico Agrícola	1	10	-	11
Lab. Análisis Residual	1	1	-	2
División de Coordinación:				
	4	8	-	12
División de Control:				
	1	2	-	3
Administración:				
	3	19	12	34
GRAN TOTAL	48	83	98	129

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA
FHIA

Distribución de Personal
Agosto 31, 1987

	Doctorados	Maestrías	Lic. Ing. o. B.S.	Agrónomos	Personal Administrativo	Personal Técnico	Jornaleros Permanentes	Gran Total
Dirección General	1				2			3
Dirección Div. de Investigación	1				2			3
Departamentos:								
Fitopatología	1	2		2	1	1	6	13
Patología	2	1		1		6	6	16
Entomología	1	2			1	3	6	13
Consejería Agrícola	1	3	1		2			7
Ingeniería Agrícola		1	3	1		1	9	15
Biometría y Cómputo	1	1			1			3
Programas:								
Fitotécnicos		2						4
Cacao		1	2			1	1	4
Plátano			2				18	21
Fertilizantes		1	1			3	18	23
Diversificación	1	1		1		1		4
Genética	2			1	1	1	3	8
						5	19	26
Proyectos:								
Portícola	1	1	1	2	3			8
Servicios Analíticos:								
Lab. Químico Agrícola			1			10		11
Lab. Análisis Residual		1				1		2
División de Comunicación:								
	1	1	2		5	3		12
División de Desarrollo:								
		1			2			3
Administración:								
		1	2		17	2	11	34
Gran Total:	13	20	15	8	37	38	98	229

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA

DISTRIBUCION DE PERSONAL PRESUPUESTADO

1986
(Años-persona)

	1986				1987			
	JEFATURA	TECNICO	APOYO	TOTAL	JEFATURA	TECNICO	APOYO	TOTAL
División de Investigación	9.2	21.8	85.2	116.2	13.9	30.3	110.3	154.5
Dirección	1.0	-	1.3	2.3	1.0	-	2.0	3.0
Programas								
Cítricos	.8	.8	1.2	2.8	1.0	1.0	2.0	4.0
Cacao	1.0	2.0	-	3.0	1.0	2.0	-	3.0
Plátano	1.0	1.0	12.0	14.0	1.0	1.0	10.0	12.0
Hortalizas	-	1.9	1.0	2.9	-	2.0	4.0	6.0
Diversificación	1.0	1.0	5.0	7.0	1.0	1.5	7.8	10.3
Mejoramiento de Banano y Plátano	1.0	.5	27.0	28.5	1.0	1.0	27.0	29.0
Departamentos								
Agronomía	1.0	4.0	8.7	13.7	1.0	4.0	9.0	14.0
Patología	.4	1.8	4.7	6.9	1.0	3.0	12.0	16.0
Entomología	1.0	3.2	8.6	12.8	1.0	6.0	8.0	15.0
Economía Agrícola	1.0	1.2	1.0	3.2	1.0	2.8	2.8	6.6
Biometría	-	-	-	-	.9	-	2.8	3.7
Ingeniería Agrícola	1.0	3.4	3.1	7.5	1.0	5.0	10.0	16.0
Servicios Analíticos								
Lab. Químico-Agrícola	1.0	1.0	11.6	13.6	1.0	1.0	12.9	14.9
Lab. Análisis Residual	1.0	-	-	1.0	1.0	-	-	1.0
División de Comunicación	.9	.6	2.9	4.4	4.5	4.7	11.9	21.1
Dirección	.3	-	.5	.8	1.0	-	1.0	2.0
Producción	.4	.6	-	1.0	1.0	4.2	2.5	7.7
Capacitación y Redes	-	-	-	-	.5	-	2.8	3.3
Biblioteca	.2	-	2.4	2.6	1.0	-	4.8	5.8
Desarrollo	.3	-	-	.3	1.0	.5	.8	2.3
Administración	5.0	2.2	25.8	33.0	1.0	4.9	45.5	56.4
Dirección General	1.0	-	1.0	2.0	1.0	-	1.0	2.0
Administración General	1.0	-	3.9	4.9	1.0	-	4.0	5.0
Personal	1.0	.6	3.7	5.3	1.0	1.0	2.0	4.0
Finanzas	1.0	1.0	2.6	4.6	1.0	1.0	5.0	7.0
Servicios y Suministros	1.0	.6	14.6	16.2	1.0	1.0	23.0	25.0
Mantenimiento	-	-	-	-	1.0	1.9	10.5	13.4
Total	15.4	24.6	113.9	153.9	25.4	40.4	168.5	234.3

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FUNDACION HONDURENA DE INVESTIGACION AGRICOLA

Presupuesto 1987 Por Concepto de Gastos

(En Miles de Lempiras)

GASTOS DE OPERACION	<u>1986</u>	<u>%</u>	<u>1987</u>	<u>%</u>	<u>%</u>
Sueldos	3,017		3,668		
13Avo. Mes	136		307		
Total Salarios	3,153	43.7	3,975	44.9	
INFOP	24		42		
Seguro Social	18		30		
Sub-Total	42		72		
Prestaciones Sociales	6		0		
Ayuda Educacional	76		142	1.6	
Seguro Medico/Vida	193		291	3.3	
Plan de Retiro	117		278	3.1	
Asist. Medica Empl.	12		0		
Ayuda Vivienda	74		176	2.0	
Capacit. Empleados	11		33	0.4	
Relocaliz. Empleados	140		45	0.5	
Total Beneficios	671	9.3	1,037	11.7	
Total Sueldos y Beneficios	3,824	53.0	5,012		56.7
Papeleria	118		73	0.8	
Materiales	248		267	3.0	
Combustibles y Lubr.	90		126	1.4	
Gastos de Viaje	224		363	4.1	
Depreciacion	234		0	0.0	
Honorarios Profesionales	46		31	0.4	
Reactivos Quimicos	65		45	0.5	
Literatura Profesional	37		10	0.1	
Electricidad	93		101	1.1	
Telex, Telefono, Correo	64		61	0.7	
Seguros	31		148	1.7	
Gastos de Representacion	45		22	0.2	
Asistencia Tecnica	312		997	11.3	
Reparaciones	207		111	1.3	
Vidreria	1		0	0.0	
Manteni. Edificios	52		27	0.3	
Servicios de Terceros	24		215	2.4	
Varios	169		61	0.7	
Total Otros Gastos	2,060	28.6	2,658		30.0
Total Gastos de Operacion	5,884	81.6	7,670		86.7
Inversiones de Capital	1,329	18.4	1,177		13.3
Total Presupuesto	7,213	100.0	8,847	100.0	100.0

FUNDACION HONDURENA DE INVESTIGACION AGRICOLA

Presupuesto 1987

**CAPITAL
(En Miles de Lempiras)**

Maquinaria y Equipo

	Muebles y Enseres	Vehículos	Equipo de Comm.	Equipo de Agricultura	Equipo de Lab.	Otros Equipos	Total Maq/Equipo
Dir. Inv.	10.0						10.0
Cacao	1.7	20.0					21.7
Platano	3.8	20.0					23.8
Hortalizas	2.0	20.0		10.0			32.0
Diversificación		20.0					20.0
Patología		28.0		6.5	5.6		40.1
Agronomía						20.0	20.0
Economía	3.0	20.0					23.0
Entomología					16.7		16.7
Fisiología	7.9				60.0		67.9
Biometría	15.0					60.0	75.0
Ing. Agrícola						13.2	13.2
Lab. Químico					55.0	20.7	75.7
Lab. Pesticidas					4.3		4.3
Lab. Agua					30.0		30.0
Dir./Admón.	12.0					15.0	27.0
Finanzas	12.6						12.6
Personal	7.0						7.0
Serv. y Sum.	6.8					13.0	19.8
Mantenimiento	10.0					30.0	40.0
Comunicación	20.0		532.0			45.0	597.0
Total	111.8	128.0	532.0	16.5	171.6	216.9	1176.8

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FUNDACION HONDURENA DE INVESTIGACION AGRICOLA

Presupuesto 1987

CONSTRUCCION DE INFRAESTRUCTURA

Fondos PL 480
(En Miles de Lempiras)

	<u>1986</u>	<u>1987</u>	<u>Total</u>
Adquisición Finca Cacao	L. 175	-	L. 175
Desarrollo Finca de Cacao	110	425	535
Adquisición Finca de Plátano	100	-	100
Desarrollo Finca de Plátano	57	250	307
Adquisición y Desarrollo Finca Cítricos	25	390	415
Equipo Fincas Experimentales	168	315	483
Adquisición Desarrollo Fincas Diver.	-	230	230
Desarrollo Finca Experimental Guaruma	20	70	90
Operación Fincas Experimentales	-	250	250
Remodelación Edificio Investigación	100	35	135
Adquisición Casa de Huéspedes	182	-	182
Adquisición Club Sula	608	-	608
Adecuación Ed. Lab. Químico Agrícola	-	60	60
Adecuación Oficinas de Administración	-	55	55
Adecuación Sede Programa Internacional			
Genética Banano/Plátano	-	200	200
Adecuación Edificio Comunicación	-	900	900
Renovación Planta Telefónica	-	100	100
Adecuación Talleres y Bodegas	-	225	225
Reparación Facilidades Post-Cosecha	-	40	40
Adecuación Casa de Huéspedes	-	135	135
Adecuaciones del campus de la Sede FHIA	-	55	55
	L.1545	3735	5280

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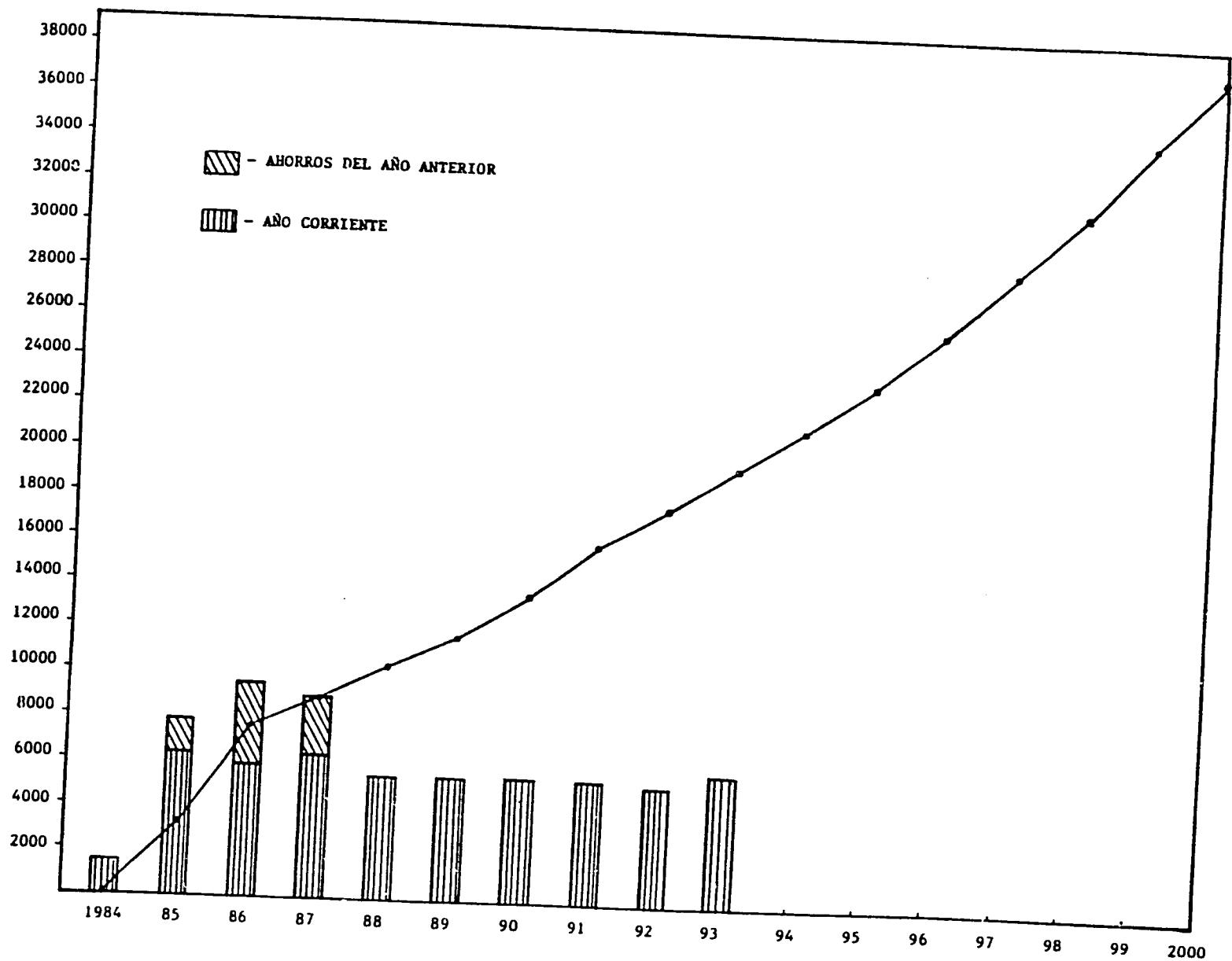
FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA
PRESUPUESTO DE OPERACIONES Y CAPITAL

UNIDAD	1988			%	1989			%
	OPER.	CAPITAL	TOTAL		OPER.	CAPITAL	TOTAL	
DIV. DE INVESTIGACION								
DIRECCION	280		280	2.7	290		290	2.4
PROGRAMAS								
CITRICOS	227	33	260		265	63	328	
CACAO	430	115	545		613	75	688	
PLATANO	420	28	448		490	28	518	
HORTALIZAS	192		192		287		287	
DIVERSIFICACION	299	194	493		405	132	537	
GENETICA	862	235	1,097		1,067	25	1,092	
TOT. PROGRAMAS	2,430	605	3,035	29.2	3,127	323	3,450	28.9
DEPARTAMENTOS								
AGRONOMIA	482	3	485		509	33	542	
PATOLOGIA	410	20	430		467	45	512	
ENTOMOLOGIA	397	16	413		410	46	456	
ECONOMIA AGRICOLA	318	25	343		374	3	377	
FISIOLOGIA	185	65	250		251	65	316	
BIOMETRIA	251	31	282		281	16	297	
ING. AGRICOLA	419	34	453		445		445	
TOT. DEPTOS.	2,462	194	2,656	25.5	2,737	208	2,945	24.7
LABORATORIOS								
LAB. QUIMICO AGRICOLA	295	20	315		304	20	324	
LAB. ANALISIS RESIDUAL	90		90		100		100	
LAB. BAJD AGUAN			0				0	
TOT. LABORATORIOS	385	20	405	3.9	404	20	424	3.6
TOTAL INVESTIGACION	5,557	819	6,376	61.3	6,558	551	7,109	59.5
DIV. DE COMUNICACION								
DIRECCION	94		94		120	50	170	
PRODUCCION	444	50	494		655	50	705	
CAPACITACION Y REDES	223	50	273		358	50	408	
BIBLIOTECA	158	50	208		209	50	259	
ASISTENCIA TECNICA	500		500		500		500	
TOT. COMUNICACION	1,419	150	1,569	15.1	1,842	200	2,042	17.1
DIV. DE DESARROLLO								
DESARRROLLO	447	30	477	4.6	535	40	575	4.8
ADMINISTRACION								
DIRECCION Y ADMINISTRACION	663	18	681		735	15	750	
FINANZAS	293	32	325		395	37	432	
PERSONAL	105	7	112		110		110	
MANTENIMIENTO	306	152	458		396	34	430	
SERV. Y SUMINISTROS	398	4	402		486	6	492	
ASESORIA Y EVALUACION			0				0	
TOT. ADMINISTRACION	1,765	213	1,978	19.0	2,122	92	2,214	18.5
TOTAL OPERACION	9,188		9,188	88.3	11,057		11,057	92.6
CAPITAL	1,212	1,212	1,212	11.7	883	883	883	7.4
GRAN TOTAL	10,400		10,400	100.0	11,940		11,940	100.0

FUNDACION HONDURENA DE INVESTIGACION AGRICOLA
PRESUPUESTO DE OPERACIONES

RUBROS	1988	%	1989	%
SUELDOS Y BENEFICIOS	6,049,547	65.8	7,406,212	67.0
MATERIALES				
PAPELERIA	145,544	1.6	176,400	1.6
MATERIALES	318,230	3.5	393,461	3.6
COMBUST.Y LUB.	167,490	1.8	221,466	2.0
REACTIVOS	42,520	0.5	47,700	0.4
LITERATURA	127,000	1.4	142,000	1.3
VIDRIERIA	24,000	0.3	23,000	0.2
SUB TOTAL	824,784	9.0	1,004,027	9.1
SERVICIOS				
HONORARIOS PROF.	254,900	2.8	302,640	2.7
ELECTRICIDAD	138,800	1.5	156,480	1.4
TEL.TEL. CORREO	76,625	0.8	91,914	0.8
SEGUROS	120,328	1.3	130,072	1.2
ASIST. TECNICA	582,000	6.3	604,600	5.5
REPARACIONES	118,015	1.3	128,550	1.2
MANT. EDIFICIOS	53,498	0.6	66,564	0.6
SERV. DE TERCEROS	233,716	2.5	271,496	2.5
SUB TOTAL	1,577,882	17.2	1,752,316	15.8
OTROS				
GASTOS DE VIAJE	433,390	4.7	512,454	4.6
DEPRECIACION	0	0.0	0	0.0
GASTOS ASAMBLEA	28,000	0.3	35,635	0.3
GTOS. REPRESENTACION	52,400	0.6	63,430	0.6
VARIOS	223,100	2.4	283,340	2.6
SUB TOTAL	736,890	8.0	894,859	8.1
TOT. GTOS DE OPERACION	9,189,103	100.0	11,057,414	100.0

FIG.2. GASTOS VS. DONACION COMPROMETIDA.
(EN MILES DE LEMPIRAS)



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Fundraising

True, it was conceived from the start of the Foundation that additional resources would be raised to support growth and to assure sustainability after the two-year period of the AID project funding. The fundraising efforts started immediately in 1985 and have yielded US\$475,000 for 1987 with a longer-term commitment the next five years of US\$400,000. Efforts to raise money have been intensified since January 1987 with the appointment of the new Director of Development. However, fundraising is a slow process and it will be about two more years before results are ostensible and either from private or non-US public sources.

More detail on FHIA's fundraising strategy are given in sections VI and VII of this document.

Alternatives for Funding

The needs for additional funds are to finance operation in current programs. While funds can be obtained with less difficulty for new projects rather than for those programs, that does not resolve the problem of funding current programs, except if some of these are projectized.

Alternatives for resolving the funding shortfall of the near and intermediate future, while the fundraising campaign yields results follows:

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First alternative is that AID allows FHIA a front loading to 1988, 1989 and 1990 funds for the last two years of the project as shown in Figure 3. This would satisfy close to minimum needs through 1989 allowing time for fundraising proceeds to come in at a realistic rate in 1988, 1989 and beyond.

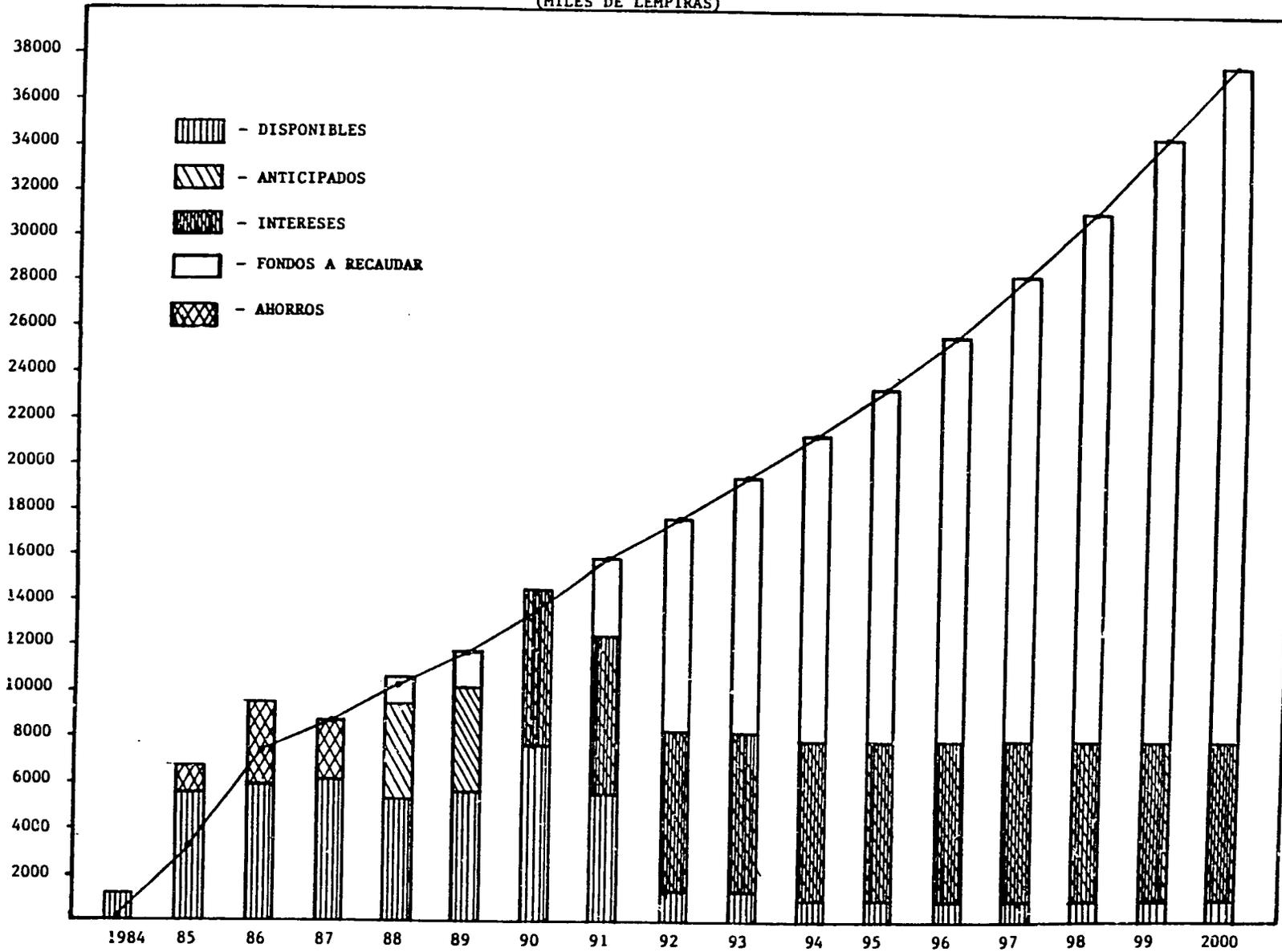
Second alternative, illustrated in figure 4 of a longer term effect in providing sustainability is that in addition to the above front loading, AID provides an endowment in the order of US\$ 50 million that would yield a revenue of about six million dollars to be applied to finance the shortfall in operation funds.

A third alternative would be to reduce "core" operations to the long term "secured funding" that is the assured funds over the ten years of the project plus the endowment fund and consider any other research and communication as special projects that would be implemented and carried on only as funding is obtained. This would imply reduction of the number of commodity programs to those allowed with adequate funding from the "secured funds" or "core"

VI. Expansion - Projects

Special project funds are the easiest to obtain, but have the disadvantage that they are available normally for three to five years,

FIG.4. GASTOS PROYECTADOS VS. DONACIONES, INTERESES Y FONDOS A RECAUDAR.
(MILES DE LEMPIRAS)



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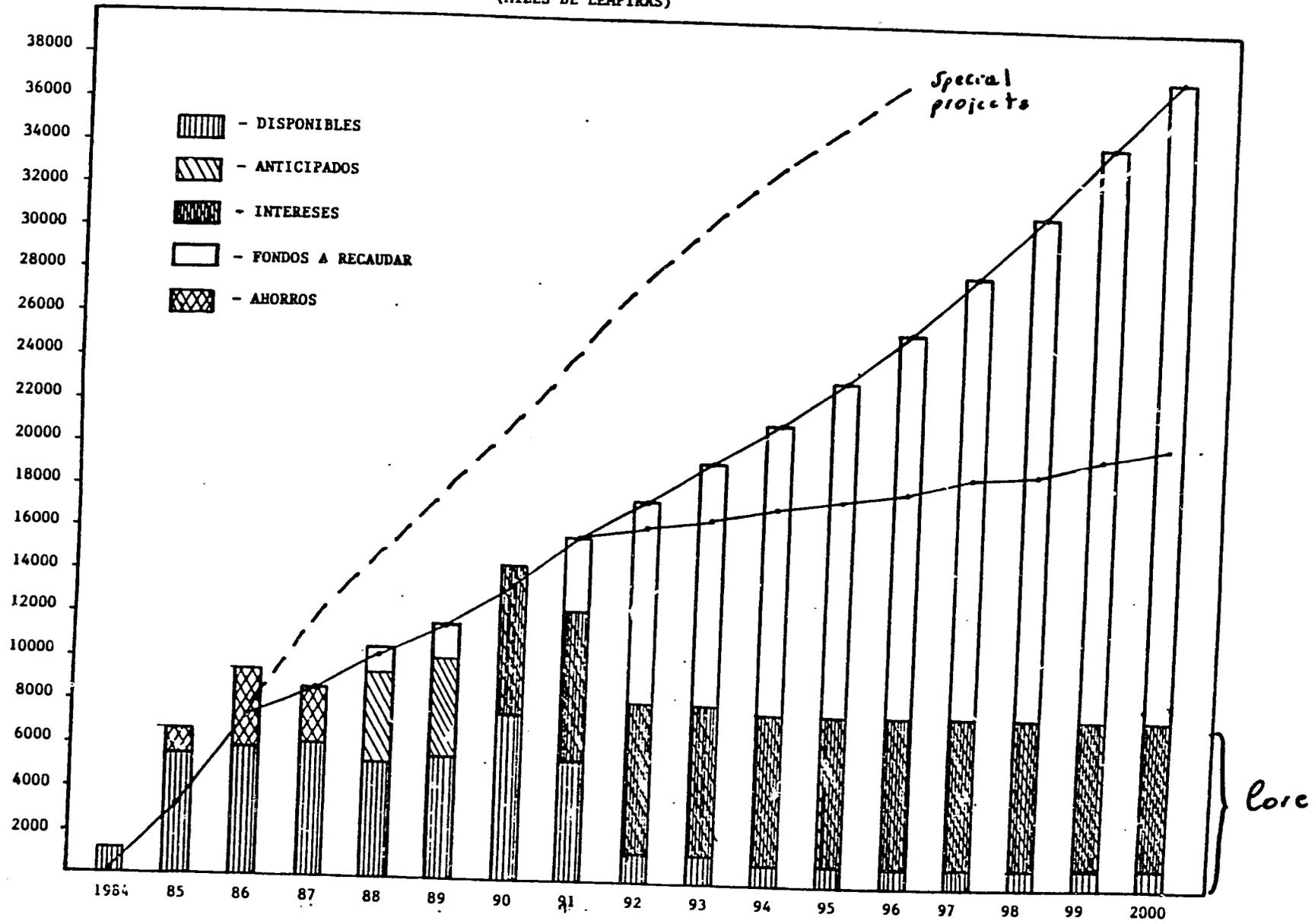
which in the case of research, do not assure sustainability. It would be risky to have to depend on special projects for more than 30% of the funding of all operations of FHIA. Figure 5 shows graphically how special projects would allow for expansion of programs or to take up projects that are additional to the core programs.

Beyond the base core programs there is a need that FHIA should be able to evaluate potential crops, thus broadening the opportunities into commodities that can fit and be compatible with the various climate and growing conditions throughout the country.

In most cases, little is known regarding the possible success of these potential crop commodities when applied to conditions in this country. A good example is the case for the development of a new pineapple industry in the Yojoa and Copan regions. Although pineapples are exported from Honduras through the plantains controlled by Standard Fruit Company near La Ceiba, it is believed that opportunities exist for not only the expansion of the industry in Honduras, but also to provide a pineapple source that will be superior in quality to existing supplies due to the utilization of better growing conditions that will promote a higher quality standard. This opportunity also opens doors to wider social benefits through an industry that would involve a spectrum of independent growers from small cooperatives to the larger land holders which could form the 'family base' of the potential industry.

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FIG. 5. EFECTO INFLACION EN GASTOS
(MILES DE LEMPIRAS)



The above describes briefly a typical case where, it appears, considerable economic and social benefit potential exists, but the physical and economic evidence is not available for progressive action to be taken. This development can only be accomplished through "special projects" that are designed to fully evaluate the potential opportunity of hitherto new agricultural industries.

FHIA's role in the pioneer work required by these special projects is first to develop the basic technical, economic and social rationale. Once the document has been prepared and is appraised as being potentially viable, special project funds are sought to cover the cost for the duration of the study.

Funding for special projects are designed to place no demands of FHIA's core budget to the contrary, not only must the special projects be independently financed but they should be permitted to contribute to the maintenance of the core and to FHIA's fund reserves. These "reserves" are used by FHIA for the development of other special projects.

Since the key to the development of new agricultural industries (diversification) will be to a large extent dependent on FHIA and its ability to identify and present the projects in a professional manner, it is vital that FHIA does not become totally dependent on the fund

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support derived from special projects. It is for this reason that a solid fund base for core operations be established for the long term, beyond the grant period provided by A.I.D.

VII. Fundraising Strategy

Providing FHIA conducts its financial management in a professional manner, it is anticipated that long term support from a number of institutions will be forthcoming as FHIA's credibility with time and evidence of its ability to provide impact take place. That type of evidence will require time and accurate documentation.

Progress with fund raising since FHIA's fund raising efforts were initiated over 6 months ago have concentrated in establishing contacts and recognition of FHIA as a unique institution with a clear mandate directed toward the development and diversification of Honduran agricultural exports.

A Honduran volunteer fund raising team has been initiated under the direction of its leader, Dr. Jorge Euseo Arias. Under this extraordinary leadership it is anticipated that we will reach many Honduran institutions and private individuals who will be willing to support the development of their country through FHIA.

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A wide range and variety of contacts have been made with national and international entities and private individuals upon which a sound long term fund raising strategy is being built (see Annex).

Despite any opinions to the contrary, it is considered that the major source of funding for FHIA will originate from public funds rather than private. Perhaps in later years the proportion of private sourced support will increase, but this will not be to a substantial amount in comparison with public support.

By 1989, FHIA will have more than five years since it was established and, although in terms of other institutions involved in agricultural research and development this is not a long period, it will undoubtedly have established a solid reputation by that time that will warrant substantial independent support that will enable it to continue its functions and develop according to the demands described in FHIA's mandate even if economic conditions permitted, a commitment of long term support should not originate from the government of Honduras although good arguments might raise in favor of such support. As part of its long term policy, FHIA should warrant the consideration of an endowment from A.I.D. of \$50 million as a first step toward assisting FHIA to establish long term financial stability at the core level upon which the thrust of FHIA's programs will depend and to which the special projects, just described, will be attached.

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One of the priorities in FHIA's long term financial plan will be concerned with methods of sustaining the endowment and augmenting it in order to keep pace with inflation and demands that are placed on FHIA to incorporate its scope of work and development. Despite the considerable demands that are and will be placed on FHIA, the vital balance between expansion and development and the financial resources to sustain the institution will require close vigilance at all times.

Development Division Strategy for Obtaining Financial Resources

Approximately three years after initiating its operations, the Honduran Foundation for Agricultural Research (FHIA) created on May 15th, 1984 -- has rapidly become a dynamic scientific research through the six consolidated programs and the Communication Division.

During 1986 and part of 1987, FHIA has hired most of its necessary personnel and has increased the number of employees by 78% (from December 1985 with 156 employees to May 1987 with 265 employees). Also, during 1986-1987 the FHIA doubled the extension of its land and installations that include three new experimental stations -- two in the Northern Coast and one in Comayagua, as well as in the leased demonstration and experimental farm that is also located in the Comayagua Valley.

The growth mentioned above has resulted in the FHIA having to expend more than its guaranteed resources of Lps. 7.0, and in 1987 this amount will exceed Lps. 2.0 million, that will have to be covered from reserve funds. In perspective, this means that in order to continue the budgeted operations for 1987, the FHIA will have to make efforts to obtain this amount or re-structure its finances in order to obtain in 1988 at least 2.0 million additional lempiras. Once the FHIA has consolidated the basic programs for 1987 such as Cacao, Citrus, Horticulture, Plantain and Diversification -- in addition to the International Banana and Plantain Breeding Program -- the principal activities of the Institution will reach a balanced operational point with an increase of 10% to 15% annually for the established programs, as well as the other special short- and medium-term projects that will be established such as the Horticultural Project in Comayagua and other future projects for pineapple, tropical flowers and specific programs in post-harvesting -- financed separately with the purpose of developing new opportunities that are not presently included in the budget for our basic resources.

In this scheme the Banana and Plantain Breeding Program is separated from the others, it being a national and international program the financing of which comes from national and international sources.

PROJECTION OF NEEDS

It is difficult to anticipate exactly the financial demands that FHIA will incur during the next five to ten years. New opportunities arise unexpectantly, and in order for the FHIA to be able to meet its commitment with agricultural research and the Honduran economy it is necessary to accept and assume responsibility for meeting the demands for research, technical assistance, and the development of new projects that arise. It is expected that some of these demands

will be financially self-supported, but this does not always happen. Therefore, it is necessary to establish a five-year budget that can be at regular intervals. This budget will provide details of the resources available and the additional resources required. It is the responsibility of the Executive Director and the Director of Development to concentrate their efforts on acquiring the necessary resources.

The five-year budget that covers the basic operations of the FHIA will be sufficiently detailed to enable the persons responsible for obtaining the resources to identify the areas where additional funding is needed. Special emphasis will be given to the Department or Program that requires additional financial assistance. These financial needs should be well-defined in order to provide a quick identification for the potential donor.

The following budget estimate for the basic operations and capital expenditures of the FHIA, long-term resources, and sums of money to be collected during the period of 1988-1992.

IN THOUSANDS OF LEMPIRAS

<u>YEAR</u>	<u>BUDGETED</u>	<u>AVAILABLE RESOURCES</u>	<u>NEEDED</u>
1988	9780	5000	4780
1989	10 280	5000	5280
1990	11 300	5000	6300
1991	12 470	5000	7470
1992	12 180	5000	7890

The above-mentioned figures obviously show the need for an active and effective effort to obtain financial resources and it is possible that with time certain revisions will be required caused by the future demands and costs during that period. However, the person responsible for obtaining the funds should adopt from the beginning a positive and optimistic point of view, since a vague or pessimistic attitude at best would only produce mediocre results.

FUND-RAISING TECHNIQUES

In recent years ample experience has been accumulated in the development of effective techniques for ensuring that donations, bequests, and other types of benefits are obtainable for institutions and organizations that deserve them. The field has become increasingly competitive as the demands surpass the available funds.

There are many prestigious institutions that have been successfully operating for many years who will continue to actively seek new resources. The FHIA's history is brief; it is known only in certain

circles, and in comparison with other institutions it is small. However, the FHIA has the advantage of being different and very special with a proud record, in addition to being located in the right place and the right time and with plans and programs that are easy to describe and comprehend.

The creation of FHIA was very fast because the installations and the initial funding were available almost spontaneously. The demands also are increasing at a rapid pace, and it has been necessary to develop on the job the necessary experience for successfully obtaining funds. Fortunately, there is assistance available through consultants. One well-selected consultant who is interested in the objectives of the FHIA could direct the Division of Development of this Foundation quickly toward better methods of strategy, effective approaches, and promising contacts.

Consultants

In view of the above, it is planned to make use of the external available consultants and to concentrate efforts therefore particularly during 1987 and 1988. The consultants include persons such as Mr. Ted Williams of Winrock International, who is familiar with the FHIA having been associated with it since the beginning and who is also a professional with vast experience in the area of development, with varied contacts resulting from his many years of experience in this field. Other sources will undoubtedly come from Cornell University through the Cornell/CTTA contract. This University has a well organized office for development and has available considerable resources for research.

Also, in order to qualify for the tax-exempt status required for receiving donations made in the United States of America to the FHIA, a separate foundation, "Amigos de la Fundación Agrícola Centroamericana" (FCAAF), has been created in Washington through Attorney Arthur Queen. Tax-exempt status has been approved. The FCAAF can now collect and channel the donations for the FHIA proceeding from North America.

Strategy for Collecting Funds

In order to develop an effective fund-raising strategy, it was necessary to classify the funds needed into seven categories.

Categories of Needed Funds

1. Long-term operational funds for the programs included in the basic structure of the FHIA:

This is the type of funding that provided for the creation of FHIA and which enabled it to begin operations; it consists of donations guaranteed for a determined extent of time. Example: The donation by AID for a 10-year period. Its function is to provide working capital

for covering long-term operations during the initiation and evolution of the FHIA. The FHIA has 2.5 to 3 million dollars a year for the first 10 years from this kind of funding.

2. Special funds designated specifically for capital investment (non-operational):

The purpose of this category is to contribute to the improvement of lands, installations, and equipment used by the programs of the FHIA. During the first two years of the FHIA, its donors have provided the equivalent of \$ 6.0 million dollars in fixed assets and approximately another \$ 3.0 million are still available for capital investments already planned, mainly for the development of experimental stations and the habilitation of the Communication Division. These funds cannot be utilized as part of the basic resources of the FHIA. Example: Resources obtained by way of the ESF (Economic Support Funding) and PL-480, proceeding from AID through the Honduran Government.

3. Funds not designated for specific operations:

These resources can be applied without distinction to all the existing programs or to long-term programs that could be established in the future.

4. Requests or endowments (Funds for Investment) that produce constant income for the FHIA to be used in operations:

This is the type of funding most favorable to the FHIA because it can produce a constant financial flow; but, unfortunately, it is the most difficult to obtain, particularly from private institutions. At present, the FHIA completely lacks this kind of funding.

5. Funds destined specifically for special short-term projects (from 1 to 5 years), for the development of well-defined research, training, or communication activities:

These funds should be used in projects that are closely related to the commission of FHIA and at the same time reinforce and complement its basic programs.

6. Funds for supporting projects to be executed by another institution in conjunction with the FHIA:

In accordance with its (Articles of Incorporation) the FHIA can promote and patronize agricultural research and training; it has the legal capacity to receive funds for administering and supporting this type of external activity. Example: The integrated project for pest control that is currently taking place in the Pan-American Agricultural School at Zamorano financed by the FHIA with funds proceeding from AID.

7. Private Donations, Individual or Institutional -- in kind or monetary -- that are not restricted to any project and which can be used according to needs:

These funds can be used in short- or medium-term projects or can be added on to the capital of the FHIA to generate income. Example: The donation of CADELGA which is in the form of fertilizers and chemical projects.

In conclusion, the Division of Development should concentrate its efforts to obtaining funding as described under each of these categories thereby enabling the FHIA progress and attain its institutional objectives.

APPROACHES TO FUND RAISING

The strategy should be oriented mainly toward the local scene (Honduras), for any international success depends greatly on the capacity that Honduras and Hondurans have for contributing to their own well-being and survival. The capacity to demonstrate a strong national endorsement is the first step toward interesting international donors in the agricultural development of Honduras, as well as an interest and concern for the rest of the region.

For both strategies, national and international, there are two approaches that should be continuously maintained in the process of fund raising; they are: direct and indirect.

Direct approach: Implies the participation of the executive group of the FHIA, personnel in the Divisions of Development and Communication, in addition to Program Leaders, Heads of Department, etc., in the initial contacts, presentations by the FHIA, and formal requests to similar businesses, organizations, or persons that are considered to be interested (and that have the resources) in investing in the FHIA.

The presentations made by the FHIA executives, will always be correlated with the aspirations and interests of the potential donors. In seeking funds we shall always keep in mind the expression: "Person to Person". The personal contacts and the ability to transmit to the potential donor the disposition and determination of the FHIA to succeed in attaining its objectives should not be overlooked. A sophisticated presentation can, at times, give a superficial impression; so the personal and human aspect should be preserved and considered as priorities.

Indirect approach: With this strategy we shall always try to use phrases and key words that are not only clear and exact but which will have an effect upon the listener, placing such emphasis on certain points or needs as will not be easily forgotten. These expressions and key words will be constantly updated. In the FHIA we should look for ways to be different in order to kindle a special interest.

An indirect approach also requires the support of an independent person, well known, and respected who could ask his friends and associates to form a "working team" to represent and act in the name of FHIA. If appropriately selected and disposed to donate time and resources to the FHIA, this "working team" could be very effective, not only for opening doors for the FHIA executives, but also they could directly solicit contributions in the FHIA's name.

An independent "working team" will require the co-operation and guidance of the Director of Development, since the leader of the team as well as its associates should be provided with current information about the progress of the FHIA and about other pertinent matters. "Working team" is a term that implies short but active duration; therefore it will be more acceptable to businessmen who have many other obligations. This team should not be active for more than a year; then it should be replaced by another team of collaborators.

Once the team is formed, it should be provided with pertinent material and a precise calendar of meetings with selected persons and businesses; also it should have a calendar of activities to follow and objectives to be reached.

Also, it is necessary to establish a program of meetings, probably every two weeks, providing adequate publicity, distinctions, and acknowledgements. In this function the Division of Communication should co-operate in order to enlarge the promotion of the importance of the FHIA's mission.

Most of the fund-raising activities will be directed by the Executive Director and the Development Director. In some circumstances the presence of both officials will be necessary, while in others, the efforts of any one official will be sufficient and appropriate. It is estimated that probably in the first year, 1987, both officials mentioned above should act together during the most important presentations.

An "International Working Team" could also be created with the leadership of a person with ample influence, respect, and experience in the business world, such as Mr. Seymour Milstein, who as President of the United Brands Company, authorized the donation of that firm's research installations and equipment to help found the FHIA. With this kind of leadership, contributions from individuals could be obtained that otherwise would only be possible through close contacts or friends.

Materials of Support: It will be necessary to always have available printed information that can be offered to the visitors, wherein the history of the FHIA is briefly related. This material has been printed and is currently being distributed; nevertheless, for 1988 and the following years new publications and slides will be prepared in accordance with the demand for them.

The 1985 Annual Report is considered appropriate material for 1987, since it not only covers the financial position of the FHIA but also chronicles the initial years of the Foundation as well as its relevant history. This annual report points out important activities and figures, and will also have an attractive cover that will interest the reader.

In 1987, under the supervision of the Division of Communication and with the support of executives and consultants, a prospectus document about the FHIA will be created to be used for various years. It will be printed using the best quality printing technology available in the United States.

A supporting document will be prepared describing the aims, future projections, and financial needs of FHIA (case statement); complementary slides will also be prepared. Suggestions from Leaders of the Programs and Heads of Departments will be requested continually, so that the presentations do not become obsolete. Each package of slides to be presented will be of high quality, not necessarily extensive, but with human focus, clearly identifiable with the beneficiaries, who in this case are the people of Honduras.

FHIA's program for the acquisition of funds is a process that requires tactful aggressiveness, patience and constancy, even when there is little prospect for success when apparently there is no immediate acquisition. Success will begin to show around 1989, when the constancy of our efforts begins to produce, and when the public and private contributions begin to materialize.

PERSONNEL AND ORGANIZATION

A well co-ordinated fund-raising program cannot be successful without a well organized Office of Development that supports the needs of the Directors. This office should be adequately equipped in a way to maintain the process acting with the accuracy of a clock and with the capacity to investigate the best way to collect resources, maintaining routine contacts with active and potential donors and, at all times, having the records in order.

The atmosphere of the Office of Development should always cause an agreeable and personal impression, but at the same time showing the fundamental efficiency.

At present, the Development Division has the following personnel:

- 1 Director
- 1 Assistant to the Director

Later on the following personnel might be added:

- 1 Secretary
- 1 Associate Director

In order to accommodate these employees an additional office will be needed for the Associate Director appropriately furnished and equipped.

Potential Sources for Obtaining Resources.

The fund-raising efforts would be more productive if they are directed to various potential donors, in Honduras as well as internationally. Relevant information indicates that in most cases donors have been specific in the areas where their contributions should be invested. Some restrict their bequests in favor of a certain place or to well determined areas e.j., education, medicine, investigation. There are also other donor whose selection of beneficiaries is very broad. In the case of FHIA it is very important to have donations from inside Honduras in order to show potential donors outside the country that there are businessmen and citizens interested in improving the future of their country and its people.

One of the most important intentions in our program for obtaining financial resources is to create two endowments -- One of support the of approach and selection of potential organizations and persons, and in particular the choosing of persons with excellent contacts who can basic operations of the FHIA and the other to finance the International Banana and Plantain Breeding Program.

The FHIA's fund-raising program has been divided into two different areas of concentration: Local and International. Each one has its own methods influence at a particular moment other candidates disposed to making donations and later on promote their interest in the FHIA. Among the potential donors in Honduras are the following:

Governmental organizations, subsidiaries of transnational companies, manufacturing companies of agricultural chemicals that have representations in the country, retail companies that supply agro-chemicals and fertilizers, national banks, producers' associations, private industry in general, governmental agencies of the developed countries, international organizations, and also the members of FHIA's General Assembly.

A modest but significant amount of financial resources has been allocated to the FHIA by some governmental institutions such as: the Secretariat of Natural Resources, Secretariat of Economy, the Central Bank and the Agrarian National Institute. It is important that the FHIA maintain the interest of these institutions so that they may continue, and if possible increase, their contributions.

Additionally, the Honduran National Congress granted the FHIA a contribution of one cent (Lempira) proceeding from the tax collected for each box of bananas exported.

The local subsidiaries of the transnational companies are also donors of modest contributions; among them are the three banana-producing companies: Tela Railroad, Standard Fruit, and Del Monte. The independent producers are also potential prospects for smaller donations, as well as oil companies like Texaco, Esso, and Shell. In addition, manufacturers of agriculture chemicals who have representations in the country like ICI, Bayer Hoescht, and Ciba-Geigy through their local distributors could also be considered as potential donors to the FHIA.

The associations of producers could be logical contributors to FHIA's research efforts for they themselves would benefit. However, these groups are not traditionally financial contributors to research, for they largely depend on free imported technology, which is not always very productive. They would only become probable donors when they understood the benefits they would receive in return.

Some of the private industries, particularly the most developed ones, are potential donors because their Boards of Directors and Administrators understand the pressing need to support the economic progress of Honduras. They understand that a developed agricultural exportation system is basic for obtaining the foreign exchange necessary to import machinery and other products.

In the international panorama, as an essential part of the strategy, the principal sources for obtaining financial contributions are identified as only those that have a political interest in supporting Honduras. First are the Governments of United States of America and Canada, who want to strengthen the development and economic stability of Honduras because of their proximity as well as their political and socio-economic interest in the country.

Second, there is the European Economic Community which has a special social-economic interest for the Caribbean; therefore should be willing to support the development of Honduras.

In addition, there exists Japan a country that maintains more of an economic than political interest in this region; its main concern is to create market sources for future generations of this continent, specially in Central America therefore, Honduras.

In addition, attention should be focused in the international companies with financial interests in Honduras; for they would tend to contribute to the FHIA as an investment, because the aims of the FHIA will contribute to providing stability and equity in the country.

Other donors outside Honduras could be: International organizations, private foundations in the United States of America and Europe, religious institutions, private business in the United States, Europe, and Japan and individual donors.

It was reported in 1986 that in the United States 82% of contributions received by philanthropic associations were from individual donors. As a possible example we can mention Mr. Seymour Milstein who represents a group of active businessmen in the United States. We anticipate that this will not be the case in Honduras; nevertheless, it is considered important to try to contact persons in this category hoping to promote a deeper interest in the progress of Honduras. Although this is the situation in the United States, it is not expected that the same contributions will be accessible for a Honduran institution, since the individual donors in the United States would be inclined to make donations to causes inside their country or communities instead of contributing to causes outside the United States, be it Honduras or any other country in the world.

Other Donors Outside Honduras

1. Governmental Agencies of industrialized countries, especially those working in the areas of credit, development, and technical assistance. Among these are the USAID, CIDA-Canada, IDRC-Canada, GTZ-Federal Republic of Germany, CONUDE-Switzerland, JICA-Japan, and the governments of Korea, Taiwan, Belgium and France, among others. Some of them could be interested in providing scientific personnel, while others could contribute with operational resources. In both cases this support would be directed to specific projects in or related to the Research Programs at the FHIA. As an example it can be mentioned that currently the AID is supporting a project for testing horticultural products for exportation.

This help would be normally channelled through the Honduran Secretariat of Natural Resources, who would formally solicit the donation to the other government and who would propose the project to be conducted by the FHIA.

2. Inter-governmental international organizations: these include a) the United Nations, in some cases directly through financing by FAO for specific projects, and b) the European Economic Community -- CEE.

The IDB might express interest in the International Breeding Program for Banana and Plantain, and another possible donor for this program, although not too probable, would be the World Bank.

3. Private foundations in the United States and Europe: Among these are the Kellogg, Kregel, and Carnegie Foundations, all of whom have supported agricultural and social projects. But, there also exists a larger number of smaller donors that could be explored as possible contributors to the FHIA, among which the great religious philanthropic groups in the United States.

4. Private companies in the United States, Europe, and Japan, that maintain commercial relations or have subsidiaries in Honduras, particularly those that are related to the products mentioned in the Articles of Incorporation of the FHIA, for example the ones dedicated to the chocolate, horticulture and fruit business.

In the following section of this document are presented additional details of the strategy proposed by the FHIA and which should be incorporated into the approaches applicable to the different categories of organizations.

INTERNATIONAL ORGANIZATIONS

The institutions that have programs to promote or advance economic development are attractive to the international organizations who provide funds. That is why it is expected that some of them will wish to contribute to the FHIA's program. The Foundation, then, should approach these international donor organizations with project proposals. Some of them, if they have the support of the Honduran government, could be very broad in their focus national as well as regional.

Regional projects are more attractive to the principal development banks, such as the Program of the United Nations for Development, the Inter-American Development Bank, or the World Bank. The FHIA could present to these financial organizations regional-scope projects for supporting the International Program for Banana and Plantain Breeding. The support and collaboration by the nations of the region (Latin America), those who would most benefit from the project, is necessary; and therefore visits to these countries to seek additional financing should be made.

At the present time, the FHIA has obtained contributions from the UPEB for the Banana and Plantain Breeding Program. This organization has signed an agreement to provide a contribution for five years.

Actually, FHIA is in the process of preparing of a new project to obtaining funds through the FAO for establishing a Regional Center for the acquisition and distribution of Citrus Germplasm to be located at the FHIA.

Even though it is difficult for the Honduran Government to obtain loans from international credit agencies, it is still more difficult to obtain subventions from them. Nevertheless, the FHIA with support of the Secretariats of Natural Resources and Treasury will look for assistance for the specific projects of the Cacao, Plantain, Horticulture, Citrus fruits, and Crop Diversification Programs.

Private Foundations of an International Nature

A number of private foundations in the United States -- especially the Rockefeller, Ford, Kellogg and Kresge Foundations are well known for financing international agricultural projects. The Rockefeller and Ford Foundations have recently changed their focus, emphasizing now projects related to medicine, humanities and social aid/ The Kellogg and Kresge Foundations are still potential donors, but their focus is limited to projects for education, training, and transferring technology. The FHIA will prepare projects to be

presented to these foundations for the purpose of financing the operations for 1988 of the Communication Division, including training courses, conferences, field trips' publications, preparation of audio-visual aids, and documentation services for the Library.

The FHIA will also explore, identify, and make contact with other, non-traditional, philanthropic foundations in the United States and Europe in order to obtain additional contributions.

ORGANIZATION AND STRUCTURE FOR OBTAINING AND USING EXTERNAL RESOURCES

In order to obtain and utilize in the best possible way the resources obtained, the FHIA is structured in four principal administrative divisions:

- a) Research
- b) Communication
- c) Development
- d) Administration

Each division has a Director.

A) Division of Research. At present, there are six consolidated programs; one of them -- Banana and Plantain Breeding -- is international in projection. Seven Departments -- five scientific and two each for agricultural Engineering and Agricultural Economics -- that provide necessary support to research and field operations. A team of 46 professionals at scientific and technical levels (including 10 PhD's, 18 MS,s and 25 specialists with a BS) perform the research functions.

B) Communication Division. Assists the Research Division in transferring the technology produced by them or channeled from another source. This is done through publications, audio-visual media, training courses, seminars and conferences of different types. There is also a library that assists the technical staff and keeps them well-informed in their fields.

C) Division of Development. Operates closely with the Executive Director in obtaining financial resources for the FHIA, assisted by the external consultant Mr. Edward L. Williams, a professional with ample experience in this field.

D) Administration Division. Its role is to support the three above-mentioned divisions. It provides efficient logistical and administrative services to the FHIA in general.

The personnel of the FHIA have been and will continue to be selectively recruited among Honduran and international scientists, who form a strong and efficient team, with extraordinary performance and efficiency.

The structure described above is appropriate for attracting donors, since it guarantees the donors an effective utilization of the donations received.

Also, the FHIA should maintain well, improve, and refurbish installations at its site and experimental stations, so that without ostentation or opulence, the FHIA can project an image of quality, energy, and discipline.

BUDGET

(in '000 Lempiras)

	1988*	1989	1990	1991	1992
<u>Operations</u>					
Salaries	103.0	159.0	172.0	185.0	199.0
Benefits	66.0	55.0	60.0	65.0	70.0
Total Sal. & Benefits	169.0	214.0	232.0	250.0	269.0
Supplies & Equipment	10.0	12.0	14.0	14.0	14.0
Services	22.0	24.0	26.0	28.0	28.0
Consultants	136.0	100.0	100.0	60.0	60.0
Travel**	60.0	65.0	70.0	70.0	70.0
Total Operations	397.0	415.0	422.0	422.0	441.0
<u>Capital Expenditures</u>					
***Furniture & Equipment	25.0	10.0	10.0	10.0	10.0

*The cost of printing of the FHIA Fund-Raising prospectus is not included.

**Includes the costs for the trips made by Dr. F. Fernandez for obtaining resources.

***Conditioning of the new offices.

FUNDACION HONDUREÑA DE INVESTIGACION AGRICOLA

DEVELOPMENT

Important Visitors and Potential Donor Contacts Accomplished

HONDURAS

President of Honduras
President of Ecuador
Minister of Natural Resources
Ministers of Government
President of Congress
Presidential Candidates
Members of Congress (Banana Commission)
Municipal Representatives
Representatives of the Honduran Military
Representatives of Government of Guatemala
British Ambassador
British Belize Ambassador (British High Commissioner)
Canadian Ambassador
Ecuadorian Ambassador
German Ambassador
Italian Ambassador
Japanese Ambassador
Mr. Jorge Bueso Arias
Mr. Jorge Jaar
Mr. Boris Goldstein
Ing. Yamal Yibrin
AID Honduras
Chamber of Commerce - SPS
Citrus Development Corporation
FAO
FIDE - Director
FUNADEH
I.N.A.
International Development Bank
Peace Corps, Honduras
Rotary Club
Shell
Standard Fruit Company
Tabacalera Hondureña
Tela Railroad Company
Texaco
United Nations

UNITED STATES

ACDI
AID, Washington
Ambassador John D. Negroponte
American Transportation Corp.
Blue Bird Corporation
CARE
Catholic Relief Service
Counsel of the Americas
Dole Fresh Fruit Company
Dupont
FCAAF
Mr. Harry Knight
Mr. Seymour Milstein
Partners of the Americas
Peace Corps, New York
PDNU
Rohm and Hass
Winrock International
United Brands Company

CANADA

CIDA
IDRC

CARIBBEAN

WINBAN

COLOMBIA

UNIBAN

COSTA RICA

ASABANA
AUGURA

EUROPE

INIBAP

GUATEMALA

ROCAP

PANAMA

UPEB

UNITED KINGDOM

FYFFES
ICI
ODA

Brazil
Jamaica
Guadelupe
South Africa
Taiwan

Banana and Plantain Breeding
"
"
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Banana and Plantain Breeding

GRANTS AND DONATIONS

AID

\$20,000,000 (Over 10 years)

Government of Honduras
Government of Honduras

\$6,500,000 (Over 10 years)
Lps. 400,000 p.a. (Banana
Plantain Breeding Program)

Government of Ecuador

\$60,000 - 100,000 p.a.
(Banana/Plantain Breeding)

ACDI

Vehicle 4x4 1985 Nissan
Pick-Up

Asgrow
Banco de Occidente
Cadelga
FAO

\$5,000 Seed Donation
Special Interest Rate
Lps. 22,000 1985/86 in kind
Lps. 415,000 (Banana
Plantain Breeding Program)

IDRC

\$C 190,000 Two years
(Banana/Plantain Breeding)

Boris Goldstein
Jorge Jaar
Dr. Pablo Soto
Others
Tabacalera Hondureña
Tela Railroad

Lps. 20,000 1985 1986 1987
Lps. 5,000
Hybrid Seed
Lps. 1,000
3 used veh. special price
1 used vehicle

United Brands Company

Research Facilities Land &
Ban/Plantain Breeding Prog.
\$150,000 p.a. (Banana
Plantain Breeding Program)

UPEB