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INTERIM EVALUATION OF THE FONDO GANADERO OF HONDURAS

**IQC Contract No. PDC-1406-I-00-7007-00
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PREPARED FOR:

**AGRICULTURE AND RURAL DEVELOPMENT OFFICE
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EXECUTIVE SUMMARY

This report is an interim evaluation of the FONDO GANADERO DE HONDURAS, S.A., de C.V., which is the entity implementing the Small Farmer Livestock Improvement Project (522-0209). The evaluation will be used to: (1) measure the extent to which Project objectives have been and are being met, (2) identify organizational, operational and financial factors which are affecting FONDO functional efficiency, consolidation and growth and (3) make specific recommendations on actions to be taken to enhance the FONDO'S operational efficiency and financial and institutional viability.

The purpose of this project is to increase both the productivity and number of small farm livestock operations. Two major reports, representing the investigative and analytical work done by FONDO personnel prior to the arrival of the evaluation team, are the principal source of information. The field work, which was performed in June and July 1987, included visits to the ranches of cattle companies to observe the work of the extension agents, to interview depositors, to see how liquidations and control visits are conducted and to observe the work of FONDO supervisors. Visits to the FONDO home farms, production and sales facilities included interviews with personnel in charge. In addition, an extensive bibliography and current financial information was utilized by the evaluation team. We interviewed officers and directors of the FONDO, the technical advisors, officers of A.I.D., and other persons who are familiar with FONDO operations and history.

The FONDO GANADERO de HONDURAS, S.A. de C.V. is a properly organized and operating corporate entity, functioning under the Commercial Code of Honduras. The General Manager, Ing. Ivan Madrid, has been in this position since December 1986. During the first Quarter of 1987, he requested his staff and the consulting contractors to prepare a diagnosis of each one of the activities of the FONDO so decisions could be made to correct the precarious financial situation. Actions were taken to reduce costs, but major decisions to increase income are delayed pending consideration of the recommendations of this report.

The Administrative staff is competent. Detailed financial information was available and up-to-date. While there are details to be corrected in the management of the flow of information about the cattle on deposit transactions, for the most part the accountants receive the information they need. Computer systems are in place and people have been trained to use them. Additional programs are being developed by the consultants

so more sophisticated analyses can be made when required.

The technical services staff is professional and well-equipped with vehicles so they can perform the supervision of production contracts, provide technical assistance and on-the-job training for depositors. There is a need for continuous expansion of the ability of the extensionists to perform the beneficiary training function. This can be done concurrently with the regular monthly meetings of the technical services staff. The quality of technical assistance, selection of depositors and effective supervision during the first 18 months was low. The fact that 20% of the contracts had to be cancelled for a wide variety of reasons, mostly bad animal husbandry and over-estimation of carrying capacity, indicates faulty performance. Experience and training can be expected to improve this situation.

The enthusiasm and desire of all the employees to have the FONDC GANADERO succeed is evident. The Directors are actively involved in the business of the FONDC. The President, Francisco Vasquez, is an effective leader of a Board of Directors, which represents a wide range of agricultural production, processing and marketing interests.

Three items in the project design contribute to the existing financial problems:

1. the capitalization plan is not working as projected;
2. the emphasis on milk production complicates the technical assistance, supervision, and accounting functions; and
3. the criteria for selection of depositors to reach the AID target group creates high administrative and technical assistance costs and production enterprises too small to be economically and financially viable.

The cumulative loss of the FONDO at 31 May 1987 was Lps. 2,339,000, compared to a projected loss in the Project Paper of US\$ 1,119,000 (Lps. 2,238,000) at the end of the first two years of operation. The fact that the FONDO is technically bankrupt is primarily due to the fact that the capitalization plan has not produced the projected subscription of capital shares. The cost of General Administration and Technical Services is high in relation to the number of cattle and the number and type of production enterprises established to date.

The following actions could turn the operating loss situation around:

- Significant expansion of the cattle on deposit program,
- Reduced emphasis on the type of production enterprises which provide the least return to the Depositor and the FONDO,
- Increased emphasis on those enterprises which provide cash returns from the sale of animals,
- Expansion of FONDOSAL operations and,
- Management of Puerto Arturo and Santa Cruz to a break-even or profit point

Changes in the contract between the FONDO and the Depositor are suggested to achieve a more equitable and easier to manage arrangement:

- The FONDO provides the mineralized salt, vaccines and parasite control medicines, but the cost should be an expense of the contract, shared proportionally.
- The way in which transportation costs are applied to the contract is not clearly defined in the existing contract. These costs also should be shared proportionally.
- The distribution of income from sales of milk in the existing contract is inequitable for the Depositor and is difficult to administer. We suggest a per cow/per year charge to the Depositor of Lps. 230 in milk production contracts, Lps. 150 in Dual Purpose contracts and Lps. 65 in Cow/Calf contracts where the cows are milked. The latter contract should clearly state that the purpose of a cow/calf contract is to produce a heavy, healthy calf and, therefore, milking cows is not permitted. However, if the Depositor insists on milking cows, other than for use of his own family, the Depositor will be charged Lps. 65 per cow/per year in compensation for the reduced weight of the weaned calf.

It has been a difficult task to balance the need to have production enterprises be sufficiently large to be economically viable for the Depositor and the FONDO with the purpose of the Project to focus assistance on small and medium-scale livestock producers. When the possession of land suitable for cattle production is used as a measure of the economic strength of the owner, we must take into account that the return to investment in cattle production enterprises is so low, 1%-3%, that only a modest cash income is produced, even under efficient management of resources. To determine the minimum number of cattle that would produce acceptable revenues for the FONDO and its

depositors, the team agreed that an acceptable net income for the FONDC per established company would be Lps. 3,000 in order to render a profitable return over the investment in cattle. For the depositor, who should receive an income to cover the cost of any additional labor needed for the operation, the value of that work was estimated at a rate of Lps. 2,160 annually, based on minimum wages. Any revenue over this amount would constitute a profit over the investment in the land, which was assigned a value of Lps. 500 per ha. of pasture. Section III provides the details to support this argument.

Net profit and return to investment varies according to the production enterprise (Cow/calf, Dairy, Dual Purpose, Growing and Fattening) and to the climate/soil regions of the country. Our calculations suggest that the minimum area needed for economic viability is as follows:

ENTERPRISE	MIN. HECT.	COWS	BULLS	ANIMAL UNITS
Cow/calf	100	75	3	100
Dairy	38	25	1	38
Dual purpose	56	40	2	56
Growing (350-750 lbs)	45			45F--87M
Fattening six mo. 650-900 lbs	87			87

The Agrarian Reform Law, Article 25, recognizes the variation in productive capacity of land in various regions of the Country. On that basis, we suggest a coefficient on the number of hectares of 1.2 for Depositors in the Aguan Valley, 2.0 in Guayape, Alto Valle Suia, Costa de Choluteca y Valle, Santa Barbara and Alto Valle Quimistan and 2.8 for the Valle de Patuca.

Subscription of Capital is Lps. 1,763,000 compared to the Lps. 4.5 million anticipated in the Implementation Plan. The detailed plan entitled, "Certificado de Ahorro Ganadero", which would require purchase of shares in FONDO GANADERO and a yet to be formed BANCO GANADERO when Certificates of sale/purchase of cattle are issued at the Municipal level of Government has merit. If the members of the Board of Directors and other leaders in the industry can use their enthusiasm, leadership and influence to achieve enactment of legislation, the necessary capital could be subscribed in an acceptable time.

The plan referred to above would accelerate the purchase of shares in the "B" category. Compliance with pledges from the Agro-industrial class "C" category remains a matter of persuasion and perception that the FONDO GANADERO is capable of earning profits while performing an essential social function.

FONDOSAL is a profit center. There is un-utilized production capacity. Document 27 of the bibliography provides detailed information. The progress of sales to date and a rough estimate of potential demand suggests that sales could be increased. A good study of ways and means to expand sales through advertising, adjustment in pricing, selection of distributors, and promotion is recommended. Expansion of this activity can provide profits and cash flow to offset losses in other areas.

FONDOTIENDAS, the veterinary/farm supply store, as presently operated, is NOT A PROFIT CENTER. Its principal function is to provide the production inputs needed for the cattle- on- deposit program and for the "Home Farms" at reduced cost compared to market cost.

PUERTO ARTURO - SANTA CRUZ

The 'home farms' are production enterprises under direct operation by FONDC. Rehabilitation and development of these units has created an enormous drain on the financial, technical and human resources of FONDC. Suggestions are made to limit the objectives of PUERTO ARTURO to the production of purebred animals. Milk production is expected to cover operating costs. SANTA CRUZ' objective is to produce hybrid cattle and feed reserves. The milking parlor should not be installed because operation of a dairy should not be a major activity. Production of feed reserves of hay and pasture should be a major activity. Objectives to serve as a demonstration center, research, and beneficiary training should not be sought at this time.

I. INTRODUCTION

This report is the result of an interim evaluation of the Small Farmer Improvement Project conducted by Chemonics International Consulting Division at the request of USAID/Honduras under IQC Contract PDC-1406-I-00-7007, Work Order 80. The field work was done during the month of June 1987.

The Project Purposes are:

1. To increase the number of livestock production enterprises,
2. To improve the productivity of livestock production enterprises,
3. To increase the size of the National Herd,
4. To increase the supply of livestock commodities.

The Goals of the Project are:

1. To increase the production of food,
2. To create employment,
3. To increase the income of the rural population.

The mechanism chosen to attain these goals and purposes is to establish a corporate entity with capital from the private and public sectors, controlled by the private sector producers, with the participation of the public sector and the private agro-industrial sector. The FONDO GANADERO DE HONDURAS, S.A. DE C.V. was created 31 August 1984. The Fondo uses the capital and loan funds available to it to form production companies. The FONDO supplies cattle, technical assistance, supervision and a small amount of complementary credit, where needed, to assure the success of the production company. The Depositor provides the land resources, the labor of daily care of the animals and day-to-day management of the ranch. The gross profits and risk of loss are shared 55% by the Depositor and 45% by the FONDO. In addition, the FONDO operates two "home farms" under its direct management, a mineralized salt production and sales unit, and a Veterinary/Farm Supply unit. The purpose of these units is to support the principal activity through provision of breeding stock and production inputs.

The conditions of the Project Agreement require the FONDO to concentrate on the small and medium-sized cattle producers, including the agricultural cooperatives created under the Agrarian Reform legislation of Honduras. Operations of the FONDO are to be conducted in such a way that it will make a profit as a private sector entity and, at the same time, perform the social function of creating economically viable small to medium scale cattle production enterprises.

METHODOLOGY

Preliminary investigative and analytical work was done by the technical advisors of the FONDO (FEDERACION DE FONDOS DE COLOMBIA/WINROCK INTERNATIONAL) (SERVICIOS TECNICOS DEL CARIBE/CLAPP AND MAYNE) with the collaboration and active assistance of officers and personnel of FONDO GANADERO DE HONDURAS. The title of this report is, "Estudio Economico y Financiero del FONDO GANADERO de Honduras a Marzo 31 de 1987. A second report, prepared specifically for the evaluation team, was prepared by Ing. Miguel Angel Bonilla under a USAID/Honduras contract, titled, "Informe sobre el FONDO GANADERO de Honduras", dated 3 June 1987. These two up-to-date reports plus the extensive bibliography provided to us is the foundation of the analysis.

The evaluation team:

1. Visited the ranches of cattle companies to observe the work of the extensionists, to interview depositors, to see how liquidations and control visits are conducted, to observe the work of the FONDO supervisors and "home farm" personnel.
2. Discussed the preliminary observations of the evaluation team with the Officers and Directors of the FONDO, the technical advisors, officers of AID, the evaluation follow-up team, and the Board of Directors. This procedure gave us valuable "feed-back" to test the validity of our preliminary findings.
3. Determined the extent of compliance with the implementation plan and implementation of suggestions of the technical advisors.
4. Conducted a series of formal and informal round table discussions among the members of the evaluation team to share observations and experience and arrive at the consensus which is presented in this report.

II. FINANCIAL STATUS

As of May 31, 1987, The FONDO GANADERO had a negative net worth of L. 302,000. This negative net worth is primarily the result of the failure to attract the projected amount of capital, especially that which was originally pledged from the private sector. In addition, part of the contributed capital from the Government of Honduras was in the form of the farm "Puerto Arturo." While the FONDO GANADERO is technically bankrupt, this situation can be cured and a plan will be presented. Even with a negative net worth, the Fondo can continue to operate as long as it can generate sufficient cashflow to cover operating costs. However, it is first necessary to evaluate the situation to see if the FONDO has any chance of being viable over the long run.

Currently, the FONDO is operating at a loss. This loss is estimated to be about Lps. 1.5 million for 1987 and is primarily due to two factors:

1. There are very high administrative and technical overhead costs which cannot be covered by revenue at the present time.
2. There are excessive operating deficits at the two home farms, Puerto Arturo and Santa Cruz.

The herd is at about two-thirds of its projected size. It should be completed up to 15,000 head as quickly as possible. The expansion should be concentrated to the extent possible in the programs of levante and engorde. These concepts are discussed in further detail in section III, Changes to the Contract.

Much of the remaining A.I.D. loan funds will be used for the herd. Some of the remaining funds will be used to cover operating losses through 1990, by which time it is estimated that L. 17 million of the original L. 20 million fund will be drawn. By that time the FONDO will have to be self-supporting or the availability of the remaining L. 3 million will have to be extended.

Throughout this report many suggestions are made to improve the FONDO operations. All of those will not be repeated here but two should be high-lighted.

It is important that FONDOSAL sales be expanded. If the salt plant can be producing and selling at capacity by 1990, it could contribute from Lps.300,000 to Lps.400,000 per year to help cover overhead.

The operation of home farms must be brought to break-even. There is a discussion in Section VIII, Review of Farms, as to how this might be done.

If the herd is increased to 15,000, properly distributed and properly developed, by 1990 the FONDO should have annual gross profit of some L. 1.2 million from the sales of cattle, merchandise and milk. This gross profit should cover all but about L. 250,000 of annual operating costs. In order to continue to operate, the FONDO will need access to this amount annually. If the basic economics of the cattle industry do not improve, it may be necessary to extend the Project Agreement Completion Date.

In relation to the L. 1.2 million of projected gross profit, administrative and technical overhead currently amount to L. 1.4 to L. 1.5 million per year. It is felt that this amount can be reduced and such a reduction will have to be made. A possible alternative to this reduction would be the addition of more operating income, such as expanding FONDOSAL with a second plant in San Pedro Sula. However, such a plan is too questionable at this time to warrant projection.

The projections made in the Economic Analysis in attached Appendix F assume that overhead will be reduced but that small amounts of capital or loan infusion will be needed each year after 1990. The IRR of the project based on the assumptions used is 6.7%. If, because of the nature of the project, this is considered an adequate return, the question of what can be done about the capital structure to allow its continuation still exists.

Over the next five years, it is estimated that approximately Lps. 1,750,000 of capital will be obtained from the 5% of the liquidations contributed by depositor. The private sector purchase of shares has stopped and the ability of a company which is losing money to attract private capital voluntarily is virtually nil.

A plan called Certificado de Ahorro Ganadero has been proposed. Document # 26 has complete details. Under this plan there would be an impost levied on each certificate of sale of cattle in the country. The impost would be used to buy shares in the FONDO for the person registering a certificate of sale. After administrative costs, it is estimated that such a plan at Lps. 6 per registration would develop Lps. 7,700,000 over five years. The adoption of such a plan would obviate the need for any other type of additional financing after 1990. See Section

XI. Revision of Goals, Capitalization, for further discussion of this issue.

The accomplishment of such a plan may seem remote. However, a somewhat differently structured plan to require continuing purchase of Colombian FONDO capital shares by the entire cattle industry was in effect in Colombia from 1960 to 1986.

This still leaves the immediate problem of negative net worth. If the Certificado de Ahorro Ganadero can be adopted, the Government could immediately invest Lps. 2 million of the remaining A.I.D. funds in a special class of FONDO stock. This would create a positive net worth which should be sufficient to cover operating losses until Fondo operations can be brought near to break-even.

Then as capital is obtained from the Certificado de Ahorro Ganadero, a like amount of the special Government stock would be retired and the amount transferred to the loan balance. Within two years all of the special stock should be retired and the loan balance would be correct.

The projected Balance Sheet in Appendix D is not based on this plan, because it is expected that it would take until 1990 before it could be enacted and the program put in place administratively. This plan is mentioned here as one possible alternative, but it is probably not the best solution to resolve this problem.

In conclusion, the current financial condition of the FONDO is not good and major steps must be taken to correct it. These steps will not be easy and will demand good planning and close administrative follow-up.

If the corrective actions are not implemented at once and successfully executed, A.I.D. should question the wisdom of putting almost Lps. 5 million of additional funds into a company that will still be bankrupt and unable to fund its operations when the current loan program ends in 1990.

CAPITAL (000 L)

Accumulated Losses to 5/31/87	(2,065)
Est. Losses 5/31/87 - 12/31/90	<u>(2,475)</u>
Est. Accumulated Losses to 12/31/90	(4,570)
Est. Capital Stock - 12/31/90	<u>1,790</u>
Est. Net Worth - 12/31/90	(1,165)
Minimum Capital per Project Agreement	<u>9,000</u>
NEEDED	10,790 =====
From Liquidations (5%) - 5 years	1,750
Program of "Certificate of Live-Stock Savings" @ Lps.6, for 5 years	<u>7,700</u>
	<u>9,540</u>

III. CHANGES TO THE CONTRACT

Under the current contract, the depositor receives 55% of the income and the FONDO receives 45%. Nevertheless, the FONDO has to provide the livestock, mineralized salts, vaccines and parasite control medicines, and 50% of the transportation costs when the FONDO vehicles are used. The depositor pays annually, for technical assistance, 1% of the value of the livestock received. The depositor also contributes the pasture and structures, the care and upkeep of the livestock, and other medicines. The death of any livestock is shared between the depositor and the FONDO. The distribution of 55% and 45% is satisfactory, but for the Fondo to provide mineralized salts and veterinary supplies at no cost to the depositor is an inequitable expense for the FONDO.

The evaluation team recommends that the market value costs of the mineralized salts, veterinary supplies, and transportation be shared in a proportion of 45% for the FONDO and 55% for the depositor. Also, it is necessary for the depositor to manage his own livestock in the same manner as that prescribed by the FONDO for livestock on deposit, including the use of mineralized salt (FONDOSAL).

DISTRIBUTION OF INCOME FROM MILK SALES

Regarding the revenue from milk, the FONDO currently receives Lps. 456.50 annually per registered purebred cow. This amount represents an average sale of 2.5 liters per day, 365 days a year, @ Lps. 0.50 per liter. A non-registered cow generates Lps. 365 which represents 2 liters daily, 365 days a year, @ Lps. 0.50 per liter. A dual purpose cow generates Lps. 182.50 for the FONDO by providing 1 liter per day for 365 days at the same rate.

The evaluation team recommends that the FONDO receive the following income for milk annually from the production companies: for purebred cows, the amount currently received (Lps. 456.50); for non-registered cows, Lps. 230; and for dual purpose cows, Lps. 150. These charges should prevail during the contract period in accordance with the governing stipulations for producing cows, dry cows and calves.

Payment for the milk should be made quarterly. If the depositor fails to do this, the FONDO should charge commercial interest on the amount due until a partial or total payment is made.

Under the current system, cows in the breeding herd do not represent revenues for milk for the FONDO because they are not supposed to be milked. Nevertheless, the evaluation team confirmed that, in all the companies, the breeding cows are milked in to such a degree that it reduces the growth of the calves, and consequently, the profitability of the breeding operation, and does not provide the FONDO with remuneration from the sale of the milk.

The objective of the breeding programs should be the production of a milk-fed calf, raised with all the milk of the mother. The FONDO, in light of its social responsibility, has allowed the breeding companies to partially milk some of the cows to provide enough milk for family consumption. This practice has been abused to the extent that most of the milk is taken from the cows to obtain the maximum amount for sale and the revenues are not shared with the FONDO.

When it is confirmed that the breeding cows are being milked and that the milk is being sold, a charge of Lps. 65 per cow on deposit should be levied. This represents the product of 180 days multiplied by 2.3 liters per day @ Lps 0.50 per liter for a total of Lps. 207. Assuming a calving rate of 70% and allocating 45% for the FONDO, this represents Lps. 65 per cow per year. This payment would compensate the Fondo for the lack of weight gain of the calf.

In summary, the actual and proposed payments would be as follows:

<u>Activity</u>	<u>Actual</u>	<u>Proposed</u>
Purebred cows	L. 456.5/cow on deposit	L.456.5/lactating cow
Unregistered cows	L. 365.5/cow on deposit	L.230.0/lactating cow
Dual purpose cows	L .182.5/cow on deposit	L.150.0/lactating cow
Breeding cow		L. 65.0/cow

ECONOMIC SIZE OF ENTERPRISE

To determine the minimum number of cattle needed to produce adequate revenues for the FONDO and for the depositors, the team established Lps. 3,000 as an acceptable net income for the Fondo per company. This would give a reasonable return on the investment in livestock. The depositor should receive an income to cover his costs for additional labor needed for the operation. The value of that labor was estimated to be Lps. 2,160 annually, based on the minimum wage. Revenue in excess of this amount would constitute a return on the investment in land, which is valued at Lps. 500 per hectare of pasture.

Model 1-A in Appendix E represents a breeding program of 25 cows and 1 bull in an area of 50 ha., providing a return to the depositor for the cost of labor (Lps.2,160) and a return on the value of the land (Lps.25,000) at 1.3%. An income of Lps.2,160 would place the depositor among families who receive more than Lps.1,996 annually and therefore, in the upper third of the economic stratum of rural families in Honduras. At the same time, the FONDO would receive a return of Lps.194.55 on an investment of Lps.25,000 in livestock for a return of only 0.8%.

Model 1-B in Appendix E represents a breeding program of 75 cows and 3 bulls in an area of 100 ha. After a distribution of the revenues and costs in accordance with the recommendations of the team, the depositor is left with Lps.1,842.67 after being paid for his own labor and that of two assistants. This figure represents a return of 3.7% on his investment in the land (Lps.50,000). For the FONDO, the net income is Lps.867.82, which gives it a return of 1.2% on an investment of Lps. 75,000 in livestock.

Cattle breeding programs in Honduras is a marginal operations due to the current regulated price of meat. In view of this, the team determined that a breeding operation of 75 cows and 3 bulls in pasture areas of 100 ha. is the minimum size. This would render an acceptable income for the FONDO and at the same time would be the maximum size that a depositor could handle, given the prevailing conditions in the Sula Valley.

Model 2 represents a dual purpose operation with 50 cows and 2 bulls in a pasture area of 65 ha. With the distribution of revenues and deductions for cost in accordance with the recommendations of the team, the depositor would be left with Lps 945.75 on his investment in the land valued at Lps. 32,000, providing a return of 2.9%. For the FONDO, the net profit is Lps. 3,725.43, which represents a return of 5.3% on the investment value of the livestock. For the FONDO to obtain a profit of Lps. 2,980 from a dual purpose operation, a minimum of 40 cows, 2 bulls and 56 ha. are required.

Model 3 represents a dairy farming operation with non-registered cows, consisting of 25 cows, 1 bull and 38 ha. of pasture. This operation would give the depositor a profit of Lps.3,508.65 on the investment in the land (Lps.19,000), giving him a return of 18%. For the FONDO, the net profit would be Lps.5,301.5, which represents a 10% return on an investment of Lps.53,000. An operation with 25 cows, 1 bull, and pasture area of 38 ha. would be the minimum allowable.

Model 4 represents an annual calf grazing operation with 70 animals in a pasture of 53 ha. The net income for the depositor would be Lps.9,025.15 on an investment in the land of Lps. 26,500 for a return of 34%. For the FONDO to obtain an income of Lps. 3,029 from this type of operation, it requires a minimum of 59 calves and a pasture area of 45 ha. This is the most profitable activity for the depositor as well as for the FONDO.

Model 5 represents a grazing operation to grow young animals from 350 lbs. to 750 lbs. in one year. It was determined that a herd of 115 head on a pasture area of 87 ha. would provide the depositor with a net return of Lps.9,363.85 on an investment in land valued at Lps. 43,500 for a return of 22%. The FONDO would receive a net profit of Lps. 3,048.65 on an investment in livestock of Lps.26,220, which represents a return of 12%. This would be the minimum number of animals which the FONDO should allow in this type of operation.

Model 6 represents an operation designed to fatten animals from 650 lbs. to 900 lbs. in 6 months. A herd of 87 head in a pasture area of 87 ha. was considered. The net income for the depositor would be Lps.3,164 on an investment in land valued at Lps.43,500, which would be a return of 7.3% in six months. For the FONDO, the net profit would be Lps. 3007.59 on an investment in livestock of Lps. 36,757.50, which represents a return of 8.2% for six months or an annual return of 16.4%

In summary, the minimum number of cattle and the amount of land required are shown in the following chart:

Minimum Number of Cattle and Amount of Pasture
per Depositor

<u>Activity</u>	<u>Livestock</u>	<u>Depositor*</u>	<u>FONDO*</u>	<u>Land</u>
Breeding	75 cows+ 3 bulls	L.1,842.67	L. 867.82	100 ha
Dual Purpose	40 cows+ 2 bulls	L. 756.59	L.2,980.34	56 ha
Dairy	25 cows+	L.3,508.65	L.5,301.50	38 ha

Grazing

Calves	59 (1-2 yrs.)	L.6,928.35	L.3,029.65	45 ha
yrlyg bulls	115 (1-2 yrs.)	L.9,363.85	L.3,048.65	87 ha
Fattening	87 (2-3 yrs.)	L.3,164.61***	L.3,007.59***	87 ha

* After deduction for labor for himself and 2 assistants

** After costs, including administrative and Technical assistance.

*** In 6 months.

To achieve the financial and economic feasibility goals of this project the current criteria for the size of enterprise for FONDO production companies needs to be adjusted upwards. Considering the variation in profitability of the various possible enterprises, the "mix" of FONDO companies should include a larger concentration of those which provide the best returns to Depositors and to the FONDO.

According to the Diagnosis Report of the Livestock Industry in Honduras, carried out by Latinoconsult S. A., Agricultural Consultants, March 1984, the livestock producers with 10 to 299 head of cattle represented 75% of the livestock herd in the Country and constituted 55% of the producers. The farms included in this stratum did not demonstrate net profits that would allow their classification as commercial establishments, rather, these are enterprises of a domestic (family farm) nature primarily aimed at providing a subsistence level. Only farms with more than 300 head of cattle could be classified as having improved management and the capacity to accumulate capital. It is clear that the FONDO must work with the former group (under 300 head) to move their orientation toward commercial production.

The maximum amount of livestock which the FONDO should assign to each company depends on the type of activity involved.

The maximum number of breeding cattle that the FONDO should assign to a depositor should be 150 cows and 6 bulls. These should be placed with producers who have sufficient pasture and have demonstrated management ability which would allow the operation to be successful. It must be kept in mind that, if the depositor does not sell milk, as this enterprise should be conducted, it will not be profitable for the FONDO unless the number of technical assistance and control visits per year is reduced.

For dual purpose operations, the maximum should be 100 cows and 4 bulls. The depositor in this case must also be an entrepreneur of recognized administrative ability.

For dairy operations, the maximum number would be 75 cows and 3 bulls. Those to be included in this program should be farms which have the necessary infrastructure and where the depositor has already proven that he has the experience to efficiently produce and market milk.

For grazing operations they should select operators with experience and sufficient pasture to allow for the proper growth and development of the cattle. For growing operations, which call for increasing the weight of the young animals from 350 lbs. to 750 lbs. in a year, the maximum number should be 300. In operations which call for fattening the young bulls from 650 lbs. to 1,000 lbs. in 6 months, the maximum number would also be 300.

Assuming the same structure for revenues and costs as in the models developed for illustration, the net income that would be received by the depositors and the FONDO would be as follows:

Maximum Number of Cattle per Depositor

<u>Activity</u>	<u>Livestock</u>	<u>Depositor*</u>	<u>FONDO</u>
Breeding	150 cows/6 bulls	L. 3,685.	L. 1,736.
Dual Purpose	100 cows/4 bulls	L. 1,891.	L. 7,451.
Dairy	75 cows/3 bulls	L. 10,526.	L. 15,905.
Grazing calves	300	L. 38,679	L. 15,405.
Graz yrl bulls	300	L. 24,426.	L. 7,953.
Fatten yrl bulls	300	L. 10,920.	L. 10,371.

* After reduction for labor by himself and 2 assistants.

In summary, it is suggested that there should be a "maturing" of depositors, by starting out at a minimum level with the least complicated enterprises, building experience, establishing the carrying capacity of the depositor's land, constructing the necessary structures and eventually arriving at the point where there is an economically and financially viable enterprise which will have access to financial resources other than the FONDO.

IV. TECHNICAL ASSISTANCE PROGRAM

After a tour through the regions of Choluteca, Olancho, Cortes, Yoro and Atlantida, the evaluation team concluded that the FONDO'S livestock which has been on deposit is not being adequately supervised. During its tour, the teams observed that the breeding cows are being milked, the calves are thin, and the livestock is infested with ticks and parasitic worms. An explanation for this could be that the extension agents make the necessary recommendations during their visits, but do not determine in subsequent visit if the recommendations have been carried out. The team observed breeding stock with insecticide burns as a result of the improper use of highly concentrated parasite medicine.

Maybe the above occurs because the extension agents put too much importance on carrying out the physical control of the livestock and fail to pay attention to the health and physical condition of the animals. Further, they do not address matters related to the management of the farm, which is what has the most direct affect on eventual profits for both the FONDO and the depositor. This was discussed in Document #37. It was observed that in spite of good pasture on the farms, the cows and calves were not found to be in better than average condition, which suggests that the inefficient operation of the farm prevents optimal use of the available resources. The emphasis given to seeding and mowing of improved pastures in order to provide the livestock with adequate nutrition has not produced the anticipated results due to a lack of farm management knowledge about how best to use the available resources.

From a total of 172 participating companies, 34 (21%) have been cancelled. In the case of the cancelled companies, the livestock were hungry and in deplorable condition, having lost a great deal of weight due to the depletion of feed reserves on the farms. This situation did not come about overnight but had come about over a long period of time. If the extension agents and depositors had given proper attention to the cattle, this at problem would not have occurred.

The transfer of technology is not taking place sufficiently to enable the farms to become profitable production units. The implementation plan details the technological package that must be executed to provide technical assistance to the depositor. This includes aspects of animal nutrition, management, breeding, health, genetic improvement, and farm management, which if adopted by the depositors, would yield a positive effect on production and productivity.

The team observed that there is great resistance among the depositors to maintain an up to date register of the livestock. This may be because some depositors do not know how to read or write and need to take advantage of the extension agent's visit to have this task performed for him. In addition, many of the depositors persist in milking the breeding cows, usually with detrimental effects on the calves. This is done because the milk is easily sold and provides needed income for the depositors.

The technological package is still in its implementation phase, so its impact on the depositors cannot be measured yet with any degree of certainty. The preliminary results from the FONDO'S depositors indicate that the calving percentages and the mortality rate for calves and cows are approximately equal to the National average as registered for 1985.

The Technical Assistance Department of the FONDO is comprised of 10 persons, including a Director, 7 extension agents, an assistant agricultural engineer, and a secretary. The head of the department resides in San Pedro Sula, has responsibility for the administration of Puerto Arturo and Santa Cruz, supervises the work of the extension agents, determines all livestock purchases and sales, and participates in the meetings of the executive committee and the technical assistance committee. It would appear that the department head has been assigned too many responsibilities. He should only be responsible for supervising the extension agents, overseeing the management of Puerto Arturo and Santa Cruz, and participating in the meeting of the executive and technical assistance committees. This would allow him enough time to develop annual, monthly and weekly plans for his activities. Currently, he does not have time for activity planning or for carrying out a year-end evaluation.

The extension agents have University degrees and most of them possess a sense of professional pride. Each has access to a vehicle and is provided with a good salary as well as a per diem and gasoline allowance. It is estimated that the number of extension agents is sufficient to cover the needs of the FONDO until 1990.

The extension agents must be made aware of the objectives of the FONDO as well as the concept that the companies must be profitable. In order for the Fondo to develop and consolidate, the cattle on deposit must be profitable for the participants and the FONDO.

Following the previous comments, the Technical Assistance Department is not providing effective selection of future

depositors, which is confirmed by the number of companies whose contracts had to be cancelled (21%).

The centralization of livestock purchases under the technical department head reduces the efficiency of those purchases and prevents the extension agents from gaining experience in that operation.

For some reason, the extension agents have not succeeded in gaining the confidence of the depositors. There should be a shared responsibility between the extension agent and the depositor in the resolution of problems. When a problem arises, the extension agent should be responsible for recommending solutions and the depositor should be responsible for implementing them. The agent should then confirm in his next visit that the recommendations have been implemented.

It may be that the depositor's apprehension and lack of cooperation arises from the dual role performed by the extension agent. During a visit, when confirming the physical status of the livestock, the agent assumes the role of a livestock controller and appraiser. Once this task is finished, the agent assumes the role of "friend" and provides the depositor with advice on the best way to improve the operation. In addition, the depositor may also be influenced by the fact that the extension agent lacks authority to act on problems that should fall within his scope of responsibility, such as disposing of unproductive animals. This situation could be dealt with by assigning the tasks of verification and branding of the livestock to an appraiser so that the extension agent can limit his services exclusively to technical assistance in the administration and management of the farm. This approach was considered in the implementation plan. It is also necessary to give the agent the authority to eliminate animals that are not productive.

As previously mentioned, the Technical Assistance Department is not yet effectively helping the depositors to resolve individual operational and managerial problems. The evaluation team recommends that the following changes be implemented in the organization and operation of this department:

1. The department head must carry out the annual planning of the department's activities. The main objective is to make effective use of the time and technical capacity of the extension agents so that they can provide assistance to a greater number of depositors. Advance planning of other activities should be done in such a manner that an annual evaluation is possible based on degree of completion of the

plan. The department head should allocate the majority of his time to the supervision and training of the extension agents. Part of the time allocated for the monthly agents meetings should be used for extension training. Emphasis should be placed on explanations of what needs to be done on individual farms and why so that the agents may in turn, do the same for the depositors.

2. The department head should delegate the administration of Puerro Arturo and Santa Cruz to two administrators, one for each farm. The purchase, sale, appraisal and branding of livestock for sale should be carried out by an appraiser who has been hired specifically to carry out those tasks. The department head should authorize the extension agents to sell unproductive animals.

3. When visiting farms, the extension agents should devote their time to teaching the depositors improved practices and explaining the reasons for adopting them. They should explain the operational FONDO contract to current and potential depositors and should also design a development plan for each farm. The selection of depositors should take into consideration the proximity of the farm to already established routes, the capabilities of the depositor and the type of activity which the FONDO needs to promote.

4. The extension agents should implement the guidelines of Document #43 in terms of the initial visits, control visits, and methods for improving the quality of those visits.

5. Likewise, the extension agents, under the supervision of the head of the technical department, should prepare a calendar of activities for the farms according to the zone in which they are located: the humid zone (9 or more months of rain), the intermediate zone (6 to 9 months of rain) and the dry zone (6 months or less of rain). This calendar will indicate the designation of times for breeding, calving, weaning, etc, for the farms of a given zone.

6. The Technical Assistance Department should submit to management a training plan for the extension agents, covering matters related to public relations and business management. The Dale Carnegie Courses and the Central American Institute for Business Management might be considered.

7. The extension agents should give priority to requests for participation from those located near the established routes and have proven business expertise and experience in

the management of livestock, until each extension agent serves 40 depositors.

8. The Technical Assistance Department should then classify the depositors in order to program the visits. There will be class A depositors who will need sporadic supervision, class B depositors who will need little supervision and class C depositors who will need continuous supervision. Based on this classification, the visits can be organized so that each agent can serve increasing numbers of depositors.

9. The Technical Assistance Department need not increase the number of extension agents because the current number is sufficient to cover the needs of the FONDO until 1990.

V. COMMERCIALIZATION

The purchase and sale of livestock is an important aspect of any livestock operation. Often the difference between profit and loss is more dependent upon these two related activities than upon efficiency of production. FONDO GANADERO is more involved in buying and selling cattle than in any other single activity. Cattle are purchased from outside sources to be placed in cattle on deposit programs. In addition, each liquidation, whether it is partial or total, involves buying and selling FONDO cattle. Essentially, a liquidation is the purchase by the FONDO of the depositor's vested interest in the cattle. That interest is then resold to the depositor, to another depositor or marketed through channels on the open market.

At the present time, commercialization is the responsibility of the chief of technical services. Considering the many responsibilities and demands upon the director's time and the number of commercialization transactions required, establishing a separate position to handle this important function is certainly indicated. It is the opinion of the team that proper administration of the technical services requires the full attention of the head of that division. The position of marketing agent would be within the technical division and under the direction of the head of that division. This would free the division director from many of the travel demands which are associated with commercialization. The marketing agent would also be responsible for scheduling and dispatching the FONDO trucks. This would eliminate possible conflict between cattle movement and other uses such as the delivery of Fondosal.

A person experienced in livestock production and marketing can protect the interests of the FONDO and, at the same time, assist the depositors. It is imperative that cattle be well purchased but it is equally important that fair and equitable values be established for the liquidations. One must bear in mind that liquidations are not only one of the major drains upon FONDO funds but that they have a great bearing upon eventual profits.

In addition to buying and selling cattle and establishing values at the time of liquidations, he can also provide training for the extension agents. The agent is always present at the time of liquidations. This is an ideal time for explanations of why and how to arrive at values and

discussions about contributing factors such as market conditions and type, size, and condition of the cattle.

There are always instances when, in the interest of herd management, an animal or animals should be disposed of. The decision to do so, and by which channels, should be made by the extension agents. Generally speaking, the sooner that sick or unproductive animals are removed from the herd, the better the production performance will be. To have these decisions wait until the head of the division visits the farm and assesses the situation often creates lengthy delays which are counter-productive.

There is a need for livestock scales to be used in the purchasing and selling of cattle as well as for establishing the basis for liquidations. In the liquidations of growing and feeding programs especially, the depositor receives payment on the basis of increased weight. A small miscalculation of the weight can make a considerable difference when large numbers of cattle are involved. Unless one has the opportunity to see cattle weighed often and on a regular basis, accurate estimates of weight are difficult. In the interest of fairness to both parties and to avoid differences of opinion which can lead to serious disagreements, scales should be used to determine weights. This holds true for the buying and selling operations as well. It is recommended that portable livestock scales be established in each zone and the extension agent be instructed in proper use and maintenance. One drawback with this type of scale is that the instructions for transporting must be followed precisely to avoid mechanical problems which can give inaccurate results. This must be stressed to the agents and periodic inspections made to insure that the scales are properly taken care of.

VI. COMPLEMENTARY CREDIT

A review of the complementary credit program indicates that it is functioning as had been projected but at a somewhat lower level of total loans than had been anticipated. At May 31, 1987, the amount of loans outstanding was L. 109,309. Of the 65 loans outstanding at that date, 37% were to cooperative groups and 63% to individuals. Since the ratio of total value of loans was 36% - 64%, neither group of potential borrowers appears to have been favored.

Interviews with the depositors who have cattle on deposit indicated that they were all aware of the program. In addition, there appeared to be no reluctance to use the credit when it was needed.

The terms of the use of the complementary credit program as set out in the implementation plan are somewhat strict. However, there is a provision at the end of this section of the plan which allows the terms to be altered in practice if experience proves such alteration to be necessary. A spot check review of loan files indicates that FONDO management has used good judgment in "bending" the loan provision rules but staying at all times within the original intention of the program. It does not appear that any changes in the administration of the program are required.

	<u>1985</u>	<u>1986</u>	<u>To 5/31 1987</u>
Balance-Beg. of year	L. -0-	L. 28,464	L. 58,546
Disbursed	28,464	38,582	53,288
Collected	-0-	8,500	2,525
Balance-End of year	28,464	58,546	109,309

- Notes: 1. Accrued interest included in balances.
 2. At May 31, 1987, loans amounting to L. 5,124 were in arrears.

VII. BENEFICIARY TRAINING

Basic Principles and Policies

The implementation plan includes a training plan for the period 1985 through 1989. It states that the objectives of the training plan are to:

1. Assure that present and potential depositors have the information and skills to manage the cattle production companies.
2. Promote the use of improved animal husbandry practices in the production enterprises associated with the FONDO.
3. Maintain and improve the professional capabilities of the technical assistance staff of the FONDO.

The purpose of beneficiary training from the FONDO GANADERO'S point of view is to assure the economic success of the production companies. The constraints to meeting these training needs are the following:

1. Travel away from the farms to attend technology transfer courses is difficult for most of the depositors.
2. Many of the depositors do not have a high level of reading and writing skills.
3. The level of knowledge of basic animal husbandry practices is highly variable among the depositors.
4. The animal husbandry practices which depositors need to know vary according to the type of production enterprise.

These constraints and the narrowly-defined interest of the FONDO GANADERO argue in favor of a heavy concentration of training in an informal environment on an individual basis. The extension agent of the Technical Assistance Division is the FONDO employee in the best position to conduct the on-the-job training.

Since the principal trainers will be the extension agents, the training plan must include a provision to "train the trainers". The most cost-effective manner would be to plan training to coincide with the regular monthly meetings of the Technical Assistance staff.

Content of Training

Technology transfer has two major elements; one is that the Depositor needs to understand WHY something should be done, the other is to be physically able to do it. This combination of theory and practice is essential to the adoption of improved animal husbandry practices.

As an example, if the extension agent explains carefully WHY cattle need salt to metabolize the forage and the way the mineral mixture helps to build bones, milk and calves, there is a better chance that the depositor will be certain to keep the mixture available to all the cattle, all the time.

This principle of combining the "Why" and the "How" of cattle and farm management routines for all the basic management of breeding control, pasture management, care of milk and utensils, animal disease control and parasite control should govern the content and presentation of the subjects. The consulting companies have prepared a series of documents which present the details of many of the animal husbandry practices which should be used as the initial technical guidance.

For example: "Plan/Sanitario", "Manejo y Alimentacion de Terneros", "Manejo y Alimentacion de Animales de Levante", "Manejo y Alimentacion de Vacas Lecheras", Programa de Capacitacion y Transferencia de Tecnologia", "Esquema de Asistencia Tecnica en Reproduccion", "Esquema General para Evaluacion de la Aptitud Reproductiva de Sementales", "Planeacion y Desarrollo de Granjas", and more. These documents should be used as the principal source of technical guidance in the training plan.

Additional Comments:

The extension agents should make a special effort to explain and interpret the production contract (Contrato para el Fomento de Produccion Pecuaria) to the depositor to assure a complete understanding of the rights and responsibilities of both parties to the agreement. The explanation should be repeated on various occasions to be certain that understanding is mutual.

A farm plan should be developed by the extension agent and the depositor which sets the goal for future years and describes the present situation. The initial status of the farm is shown on the visit which responds to an application for participation.

The budget for training in the implementation plan is Lps. 380,000 over the five years, an average of Lps. 76,000 per year.

Considering the present distribution of the various production enterprises, the weighted average income for the FONDO per year per animal is L. 41.60. Thus, it would take the income from 1,735 animals to implement the approved training plan.

A training plan which depends on the extension agent, using his presence on the farm for other reasons, to provide instruction in the context of the individual ranch operations would not have a high additional cost. A training plan and budget which provides instruction for the extension agents while they are at headquarters for the regular monthly meeting should cost significantly less than the present plan.

VIII. REVIEW OF FARMS OPERATED BY FONDO GANADERO

The visits to the farms of FONDO GANADERO provided some insight into certain problem areas which exist and allow one to draw some conclusions as to why and how they came about.

Although the farms are widely separated geographically and have dissimilar soils and rainfall patterns, both Puerto Arturo and Santa Cruz have experienced similar problems. They have both been abused through over-stocking and have tried to implement programs before being prepared to handle them. A case in point is the lack of germination of the *Brachiaria* seed which was imported from Australia. When first presented with the results of the seeding programs, it would seem that perhaps the seed had not been good. Upon review of the situation, it seems that this could have been a contributing factor but could not have been totally responsible. *Brachiaria humidicola* prefers a fairly high degree of relative humidity. However, none of the seed germinated at Puerto Arturo where the humidity is fairly high, and some of the seed germinated at Santa Cruz. This fact plus an examination of the ground leads to the conclusion that neither farm was physically prepared to handle a seed replication program.

Both farms have been burdened with greater numbers of cattle than they were prepared to handle and have suffered badly as a result. As soon as practical, both should reduce the numbers of cattle in residence to types and levels which they can handle efficiently. Even though this may have a deleterious effect in the near term on the ability of the farms to contribute to the income of FONDO GANADERO, it will pay dividends in the long term.

The European breeds of cattle, Holstein, Brown Swiss and Shorthorn, do not easily adapt to the humid tropics. Careful animal husbandry to overcome the adverse effects of heat, humidity and coarse grasses is needed to realize a significant proportion of the genetic ability of these cattle to produce milk. To import these animals so early in the development of the capacity of the FONDO GANADERO de HONDURAS seems to have been in error. The capacity of the FONDO to choose its participants, to construct on the depositor's farms the basic infrastructure of fences, water supplies, feed troughs, salt feeders, chutes, corrals and shelters needed to be developed first. It would have been advisable to accustom the small and medium-sized ranchers to maintain records, observe heat periods, control breeding and maintain herd health with rustic cattle before taking the step forward to managing cattle less adapted to the conditions but with higher genetic potential.

PUERTO ARTURO

OBJECTIVES:

1. To provide a source of purebred female cattle with a high genetic potential for milk production.
2. To provide bulls of high quality to maintain the purebred herd and to provide hybrids in the cattle companies.
3. To introduce pasture and animal husbandry technology.
4. To operate as a profit center.
5. To hold cattle temporarily as they are moved from one company to another.

The farm "Puerto Arturo" is situated on the North Coast of Honduras near the town of Tela. It consists of 193 ha. of which 150 are used to produce pasture for the cattle. At the present time, approximately 12 ha are planted to sorghum and there is an area of 23 ha reserved for use as a quarantine area for cattle in transit. The balance is taken up with improvements such as corrals, sheds, a milking parlor, roads, buildings and a soccer field.

Operations started in the second quarter of 1985. Cattle were imported from the United States and from Costa Rica in August and September of that year. The importations were:

150 head from the USA	Lps.	687,063.55
232 head from Costa Rica	<u>Lps.</u>	<u>524,638.51</u>
TOTAL	Lps.	1,211,702.06

COMMENTS:

Taking into consideration the time, effort and expense which FONDO GANADERO has already expended on the farm and the potential for it to make a contribution to the program, the request for the Government of Honduras to take the farm back should be rescinded. A review of these conditions and circumstances make it clear that the farm should continue to be used within the structure of FONDO GANADERO. The farm has already made a contribution to the operation by providing a means of recovery for the cattle from a

number of companies which were liquidated under emergency conditions. If the FONDO had been forced to sell the cattle at the time of liquidation, the loss could have been substantial.

Due to the lack of available forage production capacity, the farm should NOT be used as a demonstration unit or as a training center. It must be made into a self-supporting operating unit, the primary purpose of which is to produce breeding stock for distribution to depositor companies as well as for sale into the private sector. The sale of milk from the cow herd, especially if the herd is increased, should supply sufficient income to make the farm self-supporting.

In addition to the identification of problems and recommended solutions in the report by Wm. H. Mark, (Document 42), there are other changes which should be made in the management and operation of the farm.

First and foremost, the operation should be completely autonomous. Whenever cattle are transferred from the farm to other phases of the FONDO operation, they should be liquidated in the same prescribed manner as when cattle are liquidated at the depositor level. By the same token, when cattle come to the farm they should come in under the same guide lines and with an evaluation consistent with the market.

There are several ways that the carrying capacity of the farm can be increased to allow for an increase in the production herd. To carry out the work and projects needed to improve the carrying capacity, an increase in the labor force will be required. It is recommended that the number of employees be increased to 12 until improvement programs are completed. This includes a resident foreman who is capable of carrying out a plan of execution for short term goals as well as managing the labor force and daily operation of the farm. It will be incumbent upon the administration to provide planning, goals and strong supervision of farm management to attain these goals. One phase of this farm management plan must be a land use plan which provides for pasture improvement, development and utilization. Again, the report of Wm. H. Mark has detailed information about pasture improvement methods, costs, and management.

At the time of the team visit to the farm in mid July, there had been enough rainfall to make the grass grow vigorously, but not so much that the low-lying pastures were flooded. However, the wet-dry cycle that affects this farm was clearly evident, suggesting that, as soon as practical, the male calves should be moved from the farm out to the companies. This would permit a better utilization of available forage and allow for an increase

of income-producing cattle on the farm. It would, at the same time, enable the FONDO to increase the number of cattle on deposit. At the end of the growing program, decisions concerning utilization and distribution of the males can be made. The superior animals can be retained for eventual distribution to participating companies and those not suitable as breeding stock can go into fattening programs. At the present time it is not recommended that the males retained for the growing programs be castrated. The potential for screw worm problems combined with the lack of experience of a large proportion of the participating companies make castration inadvisable. There does not seem to be any evidence of discrimination between bulls and steers by meat processors so that the greater weight/age ratio for bulls also favors leaving the animals intact.

If forage is available, the female calves should continue to be raised on the farm up to breeding age and bred on the farm before being placed with companies. This will ensure that they are bred properly and could be available as replacement cows for the production herd as needed or sold as purebred production cows. There is also the possibility of selling bred, purebred heifers if they are not needed as cattle on deposit.

The pasture improvement and management practices which can be incorporated into the over-all farm management plan are the basis for increasing the carrying capacity of the farm. One phase which should be given immediate attention is the use of land which becomes inundated during the rainy season. It must be handled in such a manner so as to obtain the maximum use of the production capability of that area. This will mean proper pasture division and rotation and placement of cattle whether it is calves, heifers or cows, during the time that the area can be used.

It was observed during the team visit to the farm that electric fences are in use but the maintenance of some which were not in use at that moment left much to be desired. In addition to routine cleanup and maintenance which are required for general good housekeeping, the proper planning and use of permanent fences and movable electric fences are important tools in farm management. The farm administrator, in conjunction with the resident manager, should make a detailed study of the terrain and design the pasture rotation. Such a plan must arrive at a balance between best use, highest production and least cost for material and labor.

A program to increase production of sorghum for silage should be undertaken. The climatic conditions do not favor hay-making in this area, yet feed for the production herd must be available

during the dry season and as a safeguard against emergencies. It is likely that there will be other occasions of adverse circumstances when cattle will have to be brought from companies to the farm. Such an eventuality makes it imperative that the FONDO have reserves of feed available at some location to avoid a forced sale and subsequent loss. A logical alternative is to produce sufficient silage to provide for the production herd and to build these reserves. Silage can be made despite rains during the harvest, can be stored for long periods and contributes to milk production. The decisions as to area and location of sorghum production can and should be made by the farm administrator and the resident manager. Soil analyses have been made by the technical assistance team and are available in the archives of the FONDO.

As will be stressed in another section of the report, general animal husbandry is an important consideration in any livestock program. It becomes even more important in the two major activities of this particular project. The breeding and care of a purebred herd as well as milk production from high producing cows both require strong emphasis on the basic principles of animal husbandry. It is imperative that a great deal of attention be paid to this subject in the future operation of the farm.

The improvements on the farm are more than adequate for an operation of this size. The only point which may need attention in this regard is that there are neither loading facilities nor corrals on the area designated for cattle in transit. The effect of this is to negate to a large degree, the ability of the farm to protect resident cattle from contamination by transit cattle.

"SANTA CRUZ"

OBJECTIVES:

1. To provide a source of good quality crossbred female cattle suitable for use in this zone of Honduras and which have a high production index for both meat and milk.
2. To provide bulls of high quality for back-crossing within the production herd.
3. To provide bulls for use on FONDO cows on deposit.

4. To operate as a profit center.
5. To provide hay for use on the farm and for sale.
6. To hold cattle temporarily as they are moved from one company to another.
7. To be used as a holding area in case of emergency liquidations.

The Santa Cruz farm is situated in the south of Honduras near the coast of the Pacific ocean. It contains 294 ha, most of which is good soil, however some of the pastures do have arroyos and some are quite rocky.

As has been stated frequently, the area does have a long dry season which greatly affects forage production. Forage production, or the lack thereof, is the main deterrent to profitable operation of this farm. There is no need to re-enumerate all of the problem areas found at the Santa Cruz farm which have already been identified by the technical assistance. There are however a number of serious problems which have not been brought to the attention of the administration and which should be mentioned.

Although a plan of execution for the farm does exist at the level of the administration, the manager does not have a copy nor is he versed on the plan. Without communication or direction from the administration, the farm manager does not have programs in progress and seems to operate on two levels. The first is handle day to day demands as situations arise and the second is to recognize the ultimate goals of land development and hope that, in some manner, they can all be achieved in one fell swoop.

The farm manager does not have any authority other than in directing the daily activity of the labor force to handle situations which arise. He does not make any decisions about pasture improvement, cattle movement onto or off of the farm, cattle purchases and sales or type of programs and activities for the farm.

To further complicate the situation, the manager of the farm is also the manager of the operation of the FONDOSAL plant, the extension agent for FONDO GANADERO supervising 14 farms, operates a private veterinary practice, and has a private farm in the area of Choluteca.

At the present time there are several small cattle programs in operation on the farm. The milking herd consists of 61

producing cows, 32 dry cows, 60 calves, 67 yearlings, 35 bred heifers and 26 cattle being fed. It is imperative that the carrying capacity of the farm be increased and that the increased capacity be utilized with specific production goals if the farm is to become a contributor to the financial well being of FONDO GANADERO.

RECOMMENDATIONS

It is the opinion of the team that Santa Cruz be used for two purposes, to produce hay and for the production of good quality crossbred cattle to be used as breeding stock for FONDO GANADERO cattle on deposit.

Taking into consideration the climatic conditions and the topography of the area, cross breeding with cattle which can withstand the heat and humidity with a dual purpose breed is indicated. There are many crossbreeding programs which would be suitable to produce the type of cattle recommended. In fact, the FONDO has in its archives a program recommended by the technical assistance which could serve as the basis for the design.

The potential for hay production is the major asset of this farm. It provides the flexibility to choose among several activities depending upon climatic conditions, cattle numbers and supplies on hand. An irrigation well exists on the farm which could be put into use with very little out-of-pocket expense. The ditches are in need of repair but do exist and can easily be made useable. Flood irrigation as practiced in many arid areas of the world, while not the best and most economical use of water, is a viable activity and well adapted to the conditions of climate and soil in the area. This would permit the use of areas not now in production and would have the added benefit of creating the ability to produce hay during the dry season when the need is the greatest and production is the lowest. Production of the 100,000 bales of hay as projected by Wm. H. Mark would allow the farm a great deal of flexibility. With sufficient reserves as insurance against extended periods of drought, the farm could utilize the pastures to the fullest by growing or feeding additional animals during the growing season for additional revenue. It also would provide the FONDO with a great deal of security to have the forage available as a solution for emergency situations.

Until the point is reached that there is a sufficient reserve of forage in some form, it is important that the determination and development of the production herd be established and other

cattle programs be terminated as soon as possible. As is the case with Puerto Arturo, the farm cannot afford the luxury of large numbers of cattle until the forage production is at a level to adequately support them without creating potential problems for the basic production unit.

If Santa Cruz is to become an efficient, profitable operation, it must become an autonomous entity. While it will remain as an integral part of FONDO GANADERO, it must be a profit center on it's own merit. To accomplish this there are steps which must be taken.

The manager must be able to operate the farm along guide lines established by the administration but with the authority to make decisions and implement them. He must be involved in the development of both short range and long range goals and in developing a plan of execution. He can then manage the activities of the labor force and use of resources to work toward accomplishing the objectives as defined in the plan.

Cattle leaving the farm, regardless of destination, must be handled in a manner consistent with standard commercial practices so that the farm is compensated for feed and care. By the same token, cattle coming to the farm, regardless of origin or ownership, should also be under an agreement which gives the farm a fair return. This could be done a number of ways: by paying for the weight gain or by paying a certain amount per head per day for the feed and care. For cattle which belong to the farm, if such a case should exist, any gain or loss of weight and value will be for the account of the farm. To handle these programs properly, a livestock scale should be installed on the farm.

Many pastures are in need of improvement. An improvement program consisting of small steps should be put into effect as soon as possible. It is not necessary or sensible to try to improve large pastures in one operation, especially considering the lack of funds available to mount a large scale improvement program. The use of movable electric fences make it easy and practical to utilize the improved portions of the pastures as they become usable and productive.

A program either to put water in the pastures or to make water available to each of the pastures is badly needed. The practice of driving the cattle to water several times a day is neither good animal husbandry nor efficient use of labor. There are any number of good plans available for pasture separation and rotation showing water location for best use and/or for least

cost. Once again, the use of movable electric fences can be utilized to good advantage.

It is not recommended that an automated milking parlor for demonstration purposes be constructed at Santa Cruz. Milk production should not be a primary activity for the farm. The conditions of high temperatures and a prolonged dry season are not conducive to dairy operations. Cattle which have a high tolerance for these conditions, while not the best producers of milk, can be utilized in a crossbreeding program. The goal of such a program should be animals which retain the heat tolerance plus acceptable levels of milk production. Neither the farm nor the FONDO can afford expensive demonstration programs at the expense of the many other needs of the farm. If it is to become self-supporting, the emphasis must be on production of hay and of cattle with the proper genetic make up .

When the farm becomes a producer of forage in excess of it's needs, a program of buying cattle late in the dry season to be prepared for incorporation into the cattle on deposit program of FONDO GANADERO can be considered. Seasonal price fluctuations are favorable at this time and present profit opportunities as long as one has feed available.

Although the Fondo has a social responsibility as an integral part of the development strategy, profitable operation must be the basic motivation. As with any business enterprise, the creation of profits is the basis of continuing operation.

One modification in current practices which can contribute to attaining profitable operations is the way in which cows are valued in liquidations. At the present time, cows are assigned a value at the time of delivery to the depositor. Regardless of the condition of these cows at the time of liquidation, the same beginning value is used when calculating the profit or loss of the operation up to this point. In those cases where liquidation was forced due to mismanagement or lack of care on the part of the depositor, the FONDO was in the position of receiving cows which were of much lower value than when they were delivered to the depositor. Cases in point are the 36 forced liquidations from which the cattle were taken to the Finca Puerto Arturo. The cows were in very bad condition and required an extended period of feeding to recover. This period of recovery became an operational expense to the finca and therefore an expense to the FONDO when in reality it should have been adjusted for thorough re-evaluation at the time of the liquidation. The contract should specify the obligation of the depositor to provide adequate management to maintain a certain degree of physical condition of cows

on deposit. If this is not done because of poor management or negligence on the part of the depositor, he should bear some measure of financial responsibility.

In this same regard, the FONDO has the responsibility of delivering cattle of the proper type and condition to the depositor. In addition to this, and even more importantly, the agent must constantly be versed on the situation. It is inexcusable that cattle be allowed to deteriorate to the point that recovery is not only expensive but, at times, impossible. If agents are making regular visits and stay in contact with the depositors, problems can be identified early and solutions sought before reaching the emergency stage.

It has been suggested that the FONDO use the Santa Cruz farm to grow and fatten heifers for sale as a means of recuperating from the financial losses of the past two years. While the suggestion has merit from a purely commercial view point, it did not seem consistent with the stated project goals. The team also felt that this would be a stopgap measure and would not encourage the changes and improvements in the basic operations of the FONDO which are needed to create a self-supporting entity.

IX. PRODUCTION INPUTS PROGRAM

FONDOSAL

For the purpose of clarity in this document, the mineralized salt mixture produced and marketed by a division of FONDO GANADERO will be referred to as Fondosal. The production unit, also named FONDOSAL, will be referred to as the fondosal division or production unit.

Fondosal is produced in Choluteca. The plant has a production capacity of 2,000 metric tons per year. Presently the salt is being offered in 100 lb. and 50 lb. sacks. 1986 sales were slightly over 8000 cwt. Actual production costs for 1986 were Lps. 14.22/cwt. Sales to distributors are at Lps. 30.00 /cwt and the retail price is Lps. 35.00. Fondosal is distributed through 59 retail outlets and by FONDO GANADERO who is currently providing it to depositors for FONDO cattle on deposit. Distribution of sales for 1985-1986 was as follows: 2,200 cwt. to FONDO GANADERO and 9,000 cwt. through distributors. At present, Fondosal is operating at 41% of daily plant capacity for 10 days per month. The Honduran market is estimated to be 480,000 cwt. which means that Fondosal has 2% of the potential market. (Diagnostico del Programa de Sales Mineralizados. Document 27)

Presently the fondosal division does not have an advertising campaign. From the degree of acceptance of their product without any publicity, it would appear that the sales could be materially increased through promotion. It also may be that a review of distributors is indicated as well as considering an increase in distributor discount. There are always the possibilities that an increase in distributor markup could bring about a very large proportionate increase in sales or that a more selective choice of distributors could increase sales.

It is recommended that a market study and analysis be done to determine potential. Should this prove positive, the proper method and direction for a marketing campaign can be determined and embarked upon. It appears that FONDOSAL division has the potential to make a significant contribution to the financial health of FONDO GANADERO.

It is also recommended that Fondosal be put in 25 lb sacks to accommodate the many potential customers who use public transportation and find the larger sacks difficult. There are also a number of potential customers who would prefer the smaller version for several other reasons; the lower cost and

their use is such that they do not need the larger amounts at one time.

FONDO TIENDAS

The objectives of the FONDO TIENDAS listed in the implementation plan were to:

1. Provide at reasonable prices the veterinary supplies that allow an efficient administration of FONDO farms and cattle,
2. Establish functional stores that facilitate the sale of veterinary supplies,
3. Establish lines of veterinary supplies to enhance the technical package provided by the FONDO,
4. Expand the commercial possibilities of the FONDO as a business.

While these objectives were probably valid at the outset of the project, they are not vital to the basic success of the FONDO objectives, as explained below.

In 1986, the operation of FONDO TIENDAS resulted in a loss of Lps. 21,000.00 to the FONDO GANADERO. A small store in Choluluteca was closed, leaving the store in the suburbs of San Pedro Sula as the only remaining outlet. At this level of operation, with minimal administrative management, FONDO TIENDAS has little chance of being a profit contributor.

Recommendations have been made to greatly expand the operation -multiple outlets, distributor contracts with suppliers, advertising. This would place the FONDO in the position of direct competition with many local businessmen and would not enhance its local image.

Unlike FONDOSAL, FONDO TIENDAS does not market a unique product in the country which would give it a competitive advantage. The management time in the FONDO administration is limited and total administrative costs are already higher than can be justified by sales and gross profits. It is our recommendation that the management time available be devoted to the basic cattle business and to the FONDOSAL which has real profit potential. An arrangement should be made with an existing local distributor for a substantial quantity discount on the veterinary supplies needed for the FONDO cattle and FONDO TIENDAS should be closed.

X. COMPARISON OF ACTUAL RESULTS OR CURRENT PROJECTION
WITH IMPLEMENTATION PLAN
(000 L.)

	Implementation Plan	Actual/Current Projection
	-----	-----
Sale of Capital Stock		
Thru 1986	L. 3,500	L. 1,671
Thru 5/31/87	4,333	1,763
Thru 1990	9,000	2,750
Operating Results		
1985	L. (874)	L. (861)
1986	(464)	L. (789)
Thru 5/31/87	(1,190)	(2,339)
Thru 1989	1,059	(4,347)
(Diff. in cattle gross profit -4 yrs.		L. 5,110)
Sales - Total		
1986	L. 1,982	L. 1,101
1987	3,148	1,085
1988	4,122	1,775
1989	4,050	2,375
Sales - Cattle		
1986	L. 534	L. 573
1987	1,355	250
1988	1,960	570
1989	1,869	720
Sales - Merchandise		
1986	L. 1,040	L. 309
1987	1,285	480
1988	1,500	600
1989	1,500	1,000
Sales - Milk		
1986	L. 297	L. 219
1987	330	355
1988	487	605
1989	487	655

Gross Profit - Cattle				
1986	L.	534	L.	163
1987		1,355		85
1988		1,960		160
1989		1,869		200
Gross Profit - Merchandise				
1986	L.	253	L.	33
1987		297		180
1988		350		200
1989		350		340
Administration Cost				
1986	L.	700	L.	836
1987		700		720
1988		700		700
1989		700		600
Technical Assistance Cost				
1986	L.	493	L.	453
1987		654		450
1988		751		550
1989		770		550
Home Farm Cost				
1986	L.	348	L.	757
1987		364		880
1988		376		660
1989		380		350
Hond. Govt. Loan Balance				
1986	L.	14,538	L.	10,255
1987		19,589		12,555
1988		19,795		16,555
1989		20,000		16,555
Size of Cattle Herd				
1986		9,505		8,424
1987		15,084		10,758
1988		15,084		15,905
1989		15,084		16,067

XI. REVISION OF GOALS

COMMENTS ON THE LOGFRAME

A. PROGRAM OR SECTOR GOAL

The National cattle population is estimated at 2.7 million head, increasing at a rate of about 3.5% per year. The FONDO cattle inventory is at about 11,000, estimated to increase to 18,000 by 1990. It is not likely that improvements in milk production of the FONDO herd could have such an impact that Honduras would be self-sufficient in fluid milk production by Year 2000. Likewise, to expect beef or live cattle exports to increase by 100% by Year 2000, attributable to FONDO operations, is not realistic. International market conditions in relation to supply of cattle suitable for export will govern the quantity of exports.

B. PROJECT PURPOSE

1. The average FONDO herd size is 70 head. Projections of increase in the inventory by 1990 shown elsewhere in this report are 18,635 head in 245 companies. The figure, 5,500 livestock producing families, shown in the LOGFRAME is either a typo or an unrealistic number.
2. The statement, "Fondo Ganadero will have introduced cattle on approximately 20% of its participating farms during LOP." is strange. With the exception of the "home farms", all FONDO cattle are on the farms of participating Depositors.
3. "Fondo Ganadero participating producers realize following productivity increases in time frames indicated:"

Document #10, page 76, of the Bibliography is an authoritative source which states that in 1983 the National calving rate was 55%, calf mortality was 10%, adult mortality was 3-4%, weight at slaughter was 300 Kgs. and daily milk production per cow was 2 liters. Comparison of these statistics with the figures shown in the LOGFRAME suggests a need to adjust the baseline.

While calving rates on individual, properly managed, farms in the United States do reach 80% or more, this is not achieved on a large herd with highly variable environmental and animal husbandry conditions. Achievement of a 72-75% birth rate for FONDO cattle would be excellent performance. It is not likely to happen by Year 4 as stated in the LOGFRAME. Year 6 or 8 would be more realistic.

Decreases in mortality rates can be reached in the short time frame of 1-2 years. Increases in milk production, slaughter weight, and reduced age at slaughter are the result of many years of a well-established breeding and selection program combined with good pastures, good pasture management and supplemental feeding. These investments are costly and take time to establish, so the expected changes in productivity indices are more likely to be attainable in ten years than in four.

The following suggested changes are keyed to the Project Log Frame, Appendix B:

- a. Calving rate will increase from 55% to 72% in 1989 and to 75% in 1990.
- b. Milk production will increase from 730 liters per lactation to 1320 by Year 1990.
- c. Information on length of lactation is not readily available.
- d. Adult mortality will decrease from 4% to 3% by 1990
- e. Calf mortality will decrease from 10% to 7% by 1990
- f. Slaughter age will decrease from 48-60 months to 36-48 months by 1990.
- g. Average slaughter weight increases from 660 lbs. to 750 lbs. by 1990.

C. PROJECT OUTPUT

The FONDO GANADERO is established and operating and can be economically and financially viable with improved management and some changes in the size of the livestock production enterprises.

D. COMMENTS ON THE SUITABILITY OF FONDO GANADERO TO ACHIEVE THE PURPOSE OF THE PROJECT

The suitability of the FONDO GANADERO model to achieve the project purpose of establishing new small and medium scale livestock producers is open to question. Colombia has had entities known as "Banco Ganadero" (which provides money credit), and "Fondos Ganaderos" (which form production companies with land owners). In 1960, 80% of the capital was from the public sector and 20% from the private sector. Because Colombian law required all cattle producers to purchase shares annually, this situation

reversed to 80% from the private sector by 1970. While these corporations have a profit motive, they also serve a social function by providing the resources necessary to establish successful cattle production enterprises. They are almost entirely beef rather than milk producers for reasons which are discussed below.

The project design attempts to adapt this successful idea to Honduran conditions to achieve the project purpose. Three items in the project design contribute to the existing financial problems of the FONDO:

1. the capitalization plan is not working as projected;
2. the emphasis on milk production complicates the technical assistance, supervision, and accounting functions;
3. the criteria for selection of depositors to reach the A.I.D. target group creates high administrative and technical assistance costs to establish production enterprises too small to be economically and financially viable.

With respect to beef production, it is only the growing and fattening enterprises which produce actual sales that result in cash to share between the FONDO and its Depositors. Cow/calf breeding enterprises which produce less than one calf per year per cow produce so little income that herd size restrictions to under 100 head result in poor financial results for both parties.

With respect to milk production, the income flow from milk and dual purpose herds is difficult to manage. It is not possible to control the amount of milk produced for sale so there can be an equitable share in the product. Calves and the salvage value of cull cows provide the occasional sale of live cattle. The gradual increase in the value of the herd increases the amount of capital assets, but does not provide a cash income to be shared. The result is that the FONDO must use some of its resources to buy out the Depositors' share of unrealized capital gain.

The conclusion is that the FONDO model doesn't work very well to help form dairies. A better way would be to finance and operate such a project through arrangements with the dairy processors who can control credit by deducting loan amortization payments from the value of milk deliveries, and who will provide technical assistance in the interest of increasing the supply of high quality milk to the processing plant.

DESIGN AND IMPLEMENTATION PROBLEMS

CAPITALIZATION

The capitalization plan to have Lps. 9 million subscribed is seriously flawed. Class A shares issued in return for ranches is valuable, but the short-term results of operation of the ranches have had a negative impact on cash flow. Class B shares will be subscribed over time as the cattle on deposit program of the FONDO grows. Class C shares have not been purchased in significant volume. Voluntary purchases of shares in FONDO with its present financial status are not likely to occur.

Lacking is an industry-wide, forced subscription of shares. There is a plan to establish a "CERTIFICATE OF LIVESTOCK SAVINGS" which has merit. The active support and enthusiasm of the Board of Directors and cattle industry leaders is required to attain the adoption of legislation to place the plan in effect. The plan, however, would not force the purchase of shares by the agro-industrial sector of the cattle industry.

Colombian legislation in 1959 achieved this purpose through an income tax surcharge on all cattle producers except those with very low levels of investment. The tax surcharge could be paid, or the producer could buy shares in the FONDO GANADERO of his Department and in the BANCO GANADERO. The level of taxation was 1% of the capital investment in cattle production. The result over a ten-year period was to have 80% of the capital investment in these two type of cattle development organizations held by the producers and 20% of the capital was held by the public sector.

As it is presently drafted, the purchasers of the proposed Certificate of Livestock Savings would primarily be those persons engaged in the marketing phases of the cattle industry. The long-range effect might be that the eventual owners of the FONDO would be marketers, not the producers. Keeping this in mind, the evaluation team recommends a very careful review of the "Certificate" plan before it is adopted. It would be preferable to try for something along the lines of the Colombian legislation, which results in producers having the majority shareholder interest.

PUREBRED CATTLE IMPORTATION

A major contributing factor to the precarious financial status of the FONDO was the timing of the importation of the purebred cattle from the USA and Costa Rica. The need of the FONDO to have its own source of purebred cattle with high genetic potential was far enough down the road that postponement of the

importation until the FONDO was fully operational would have been a better strategy. The importation was made in the first half of 1985 when the FONDO was in the first stages of organization. It diverted management and technical assistance attention away from the basic need to create viable cattle production companies. It caused money to be invested without a chance of short-term cash flow, and incurred serious losses because neither the home farms nor the Depositor farms were properly prepared to manage exotic cattle.

TECHNICAL ASSISTANCE CONTRACTORS

We have heard comments to the effect that, "If the technical assistance and consulting services are excellent, then why do we have such large operating losses?". Typical answers are that the recommendations were not implemented. Responses are to the effect that, "as many recommendations were accepted and put into effect as we were able to."

An enormous amount of good advice is contained in the large number of documents produced by the consultants. Part of the problem appears to lie in the ability of a small staff of Hondurans, trying to establish a unique type of corporation, to absorb the technical assistance. Early in this game there were 6 advisors and 3 Honduran officers to act upon the advice. In some instances, the level of rapport that we were able to observe indicated that there is a problem of transfer of technical advice to FONDO personnel.

XII. CONCLUSIONS AND RECOMMENDATIONS

A. Livestock on Deposit Program

1.a(i) The 50 hectare limitation is too restrictive. Area limitations should vary by type of deposit program and by the different areas of the country. Recommendations are:

<u>ENTERPRISE</u>	<u>MIN.HECT.</u>
Cow/Calf	100
Dairy	38
Dual Purpose	56
Growing (350-750 lbs.)	45
Fattening six mo. (650-900 lbs.)	87

Area coefficients: 1.2- Aguan Valley
2.0- Guayape, Alto Valle Sula, Costa de Choluteca and Valle, Santa Barbara and Alto Valle Quimistan
2.8- Valle de Patuca

(ii) The limitation regarding access to formal credit does not appear to be unduly restrictive.

b. No changes are recommended in the current system of depositor classifications.

2.a The following changes are recommended for the contract between the FONDO and its depositors:

- 1) The FONDO provides salt, vaccines, and parasite control medicines, but the cost should be an expense of the contract, shared proportionately.
- 2) The way in which transportation costs are applied to the contract is not clearly defined in the existing contract. These costs also should be shared proportionately.
- 3) The distribution of income from sales of milk in the existing contract is inequitable for the depositor and is difficult to administer. We suggest a per cow/per year charge to the depositor of Lps. 230 in dairy contracts, Lps. 150 in dual purpose contracts, and Lps. 65 in cow/calf contracts where the cows are milked.

2.b.c. Our calculation of the minimum/maximum number of cattle in each operation is:

	<u>Min.No.</u>	<u>Max No.</u>
Cow/calf	78	156
Dairy	26	78
Dual Purpose	42	104
Growing (350-750 lbs.)	45	300
Fattening six mos.(650-900 lbs.)	87	300

2.d. Information to answer this question is not yet available. Provision has been made to collect this information via a registry book which is in each one of the Depositors' files. The information has not been entered in any of these forms. It is supposed to be entered by the extensionists and the depositors so questions like this can be answered. The Appendix shows an overall impact in the Economic Analysis section.

2.e. An analysis of 53 companies which have been in operation for at least 18 months was conducted by the STC/CLAPP + MAYNE consultant team. It covers calving rate and combined adult and calf mortality. The calving average for this universe is 55.89% and death rate is 7.73; not significantly different from the statistics for the National herd. There are, however, 11 herds with calving rates at 70% or above and 19 herds with mortality rates below 4%. This indicates that the projected productivity indices can be attained.

B. Technical Assistance Program

1. Supervision of production companies and training of depositors has not yet reached the level where efficient, profitable production is being attained in the majority of the herds.
2. Technology transfer is taking place, but slowly. The recent study of 53 companies which have been in operation for 18 months or more indicates that there are companies which have achieved calving rates above 70% and 19 companies have reduced death losses to 4% or less. In those companies the impact of use of improved production technology been positive.
3. The technical unit is organized and staffed to provide for adequate selection of depositors and efficient cattle purchase, placement and supervision. Operations need to be improved to avoid repetition of mistakes made during the initial years and to expand the number of growing and

fattening companies to the point where the parameters established in the Implementation Plan are complied with.

4. Performance in assisting depositors to resolve individual operational and animal husbandry problems varies among the technicians. As a "train the trainers" program is implemented, the extension agents' performance should become more uniform.
5. It has been suggested that the Director of the Technical Services Division has a work load which makes supervision and training of the agents deficient. Creation of a "buyer" who would perform the purchase/sale function and manage the trucks of the FONDO could reduce the work load of the Director. This would lead to more attention to depositor supervision and improved technology transfer.

C. Complementary Credit Program

1. The credit policies described in the Implementation Plan are consistent with the desired impact. Any deviations from the policies, also provided for in the Plan, appear also to be consistent with the desired impact.
2. To the extent it was possible to determine, procedures appear to result in the efficient provision of credit.
3. All depositors interviewed were aware of the program and most had taken advantage of it.
4. No changes are recommended.

D. Beneficiary Training

1. & 2. It is our recommendation that the training be handled on a somewhat informal, but carefully supervised, basis by the extensionists. This will require a well-planned program of trainer training at the monthly meetings of the technical assistance staff.

E. FONDO Home Farms

1. The goals and objectives of the home farms are not well defined. In addition, those goals and objectives that may be in the minds of San Pedro Sula management have not been conveyed to the local farm management.

2. The home farms do not have sufficient organizational and administrative support to operate efficiently. In addition to the lack of plans and goals, they are not being treated as separate profit centers so the results of their operations cannot be evaluated.
3. Cattle in transit are a potential danger to the FONDO herd. Neither ranch has separate corrals and loading facilities for cattle in transit. The farms did serve as an emergency resource to save valuable animals which lost condition on depositor farms which were not ready to care for them properly. The overstocking of the ranch destroyed the feed reserves, but it did save the animals. The system of accounting places all the costs of that rescue operation on Puerto Arturo, but gives it no credit so the accounts are skewed against the ranch.
4. Puerto Arturo should have as its primary objective to produce purebred animals for use in the cattle on deposit program. The purpose of milk production is to pay the costs of operation. Santa Cruz should produce hybrid cattle for use on depositor farms and develop the irrigation system to produce reserves of feed. The milking parlor should not be installed and milk production should only be an incidental activity. When adequate feed is available, a program of growing heifers or bull calves would be appropriate to provide income to cover costs.

F. Production Inputs Program

1. FONDOSAL

- a. The operation has proven itself commercially viable even with what has appeared to be minimal management attention.
- b. It is felt that potential for growth and expanded profitability is substantial. A well defined marketing program should be prepared, probably by an outside professional agency, and then be closely followed by top management.
- c. Fondosal is a unique product in the Honduran market. The mixture of salt with the proper mixture of minerals has a high potential to improve growth and breeding efficiency. The product is conveniently packed and easy to use. The price is competitive. The present impact is small, about 2% of the potential market. Increased

promotion and sales will eventually have a significant impact on the livestock industry.

- d. A good marketing program well implemented by top FONDO management should achieve maximum impact and profitability.

2. FONDOTIENDAS

- a. The operation as it is currently organized and operated is not or is only minimally viable.
- b. The amount of profit that might be achieved through growth in the operation does not appear to be an adequate return on the required management attention and effort which is a limiting factor in total FONDO operations.
- c. FONDOTIENDAS does not now have an impact on the industry. It is doubtful that it will ever have a significant impact.
- d. It is recommended that the operation be closed. The management time-drain in an operation competing with already established local businesses, but not having a unique market offering, is not justified.

G. Financial Status

- 1.a. As currently operated, the FONDO does not have long-term operational and financial viability. The organizational structure requires some changes.
- b. Major factors affecting FONDO'S operational and financial status are the over-distribution of cattle in lower yielding types of deposit programs, failure to promote sales of FONDOSAL, high overhead and technical service costs, and the expense and cash drain of home farm operations. Proper distribution of cattle, substantial expansion of FONDOSAL sales, some reduction of overhead costs and limits on the increase in technical service costs, and expanded management planning and effort to make the home farms self-supporting are needed.
- c. The remaining A.I.D. funds can best be used to expand the herd size with cattle appropriate to the higher yielding types of deposit programs and to fund operating losses during the period required to bring the FONDO to break-even.

- d. Current projections, assuming optimum operational turn-around, still result in an annual loss of about Lps. 250,000 in 1990 and thereafter. If the economics of the cattle industry do not improve or some new source of FONDO income is not found, this amount of additional A.I.D. funding would be needed each year.
 - e. The changes recommended are the same as the factors enumerated in G.1.b., above.
- 2.a. Currently, the only capital infusion being received is from the mandatory 5% of depositor liquidations. These amounts will not be sufficient to meet capitalization goals.
- b. The constraints are very simple. A technically bankrupt company which is still losing money has no capability of attracting either public or private capital voluntarily.
 - c. The only alternative currently foreseeable in addition to the 5% of liquidations is the plan for Certificado de Ahorro Ganadero. Under this plan, an impost of Lps. 6 would be charged on each certificate of cattle sale in the country. The impost would be used to buy shares in the FONDO for the person registering a certificate of sale. If implemented, the plan is estimated to result in Lps.7.7 million of additional capital to the FONDO over a five-year period.

H. Revision of Goals

1. This section refers to suggestions for change in the Project "log frame". Reasons for suggested changes in the "project purpose" and "project output" are provided in detail in Section XI- Revision of Goals.
2. Two changes are recommended for the Implementation Plan. The section regarding beneficiary training should be revised to reflect what is happening in actual practice and is amplified in this report. Secondly, the financial projections need to be revised because the cost of goods sold for cattle sales was not included in the FONDO cost projections.

I. Development Impact

- a. The value of agricultural production generated by project activities for the years 1986 - 1990 is estimated at Lps. 1,164,000; 2,956,000; 6,606,000; 4,066,000; and 5,547,000 respectively.
- b. The contribution to agricultural GDP (value added) of the production generated by project activities for the years 1987-1990 is estimated at Lps. 1,316,000; 4,161,000; 2,342,000; and 3,472,000 respectively.
- c. No FONDO cattle have been sold to export slaughterhouse to date.
- d. There are 131 depositors in 136 production companies. On the average, two families operate each one of these units. The FONDO itself has 52 persons. A total of 315 to 325 persons are directly employed as a result of this project.
- e. A list of 51 companies where contract liquidations have occurred shows that depositors received Lps. 96,487.24 in cash or credits and Lps. 9,980 in shares of FONDO stock. The average works out to Lps. 1,891.90 per family.
- f. An estimated cost/benefit for the project was not computed. Instead, at the instructions of A.I.D., a calculation was made of the internal rate of return. This IRR is currently calculated at 8.5%.
- g. While there is probably a positive impact on rural families and women directly affected by the project, it is not significant.

J. Timing and Priority Actions

The evaluation team has been requested to include a "time frame" which would help project managers to establish priority actions. While the shortfall of capital causes concern for the long-range viability of the FONDO, the primary concern should be to establish efficient operations which produce cash flow and profits. These actions, fortunately, are those which can be taken directly by the FONDO and by A.I.D. The actions needed to obtain the right kind of capitalization depend upon other entities, particularly the Honduran legislature, so will take more time to place in effect.

a. See II. Financial Status

There is a distinct difference in the profitability of the various cattle production enterprises as is illustrated in the production models shown in Appendix J. Too many FONDO cattle are in the lower-yielding enterprises and too few in the levante and engorde enterprises. Concentration on the formation of cattle companies in the latter categories and the use of A.I.D. loan funds to purchase the cattle will help, not only to increase cash flow, but also to dilute the high cost of administration and technical assistance by increasing the number of cattle in the livestock on deposit program. Action by FONDO.

b. See VIII. Review of Farms Operated by FONDO GANADERO

Since the excessive operating deficits at the two home farms are an important factor in the financial losses noted in the report, the various actions suggested in this Section should be started immediately. Again action by FONDO is possible under the existing implementation plan.

c. See III. Changes to the Contract

Concurrently with the high priority actions cited above, the suggested changes to the contract would make the financial agreement between the FONDO and its depositors equitable for both parties and easier to administer. Action by FONDO.

d. See III. Changes to the Contract

The paragraphs on the economic size of enterprise provide the reasoning by which it is suggested that the A.I.D. restriction to enterprises which have 50 hectares or less should be adjusted. Concurrently with the actions suggested for FONDO, A.I.D. should make the changes which will permit the FONDO to establish cattle production enterprises large enough to be financially and economically viable for the FONDO and its depositors. The action suggested will keep within the objective to work with small and medium sized cattle production enterprises.

To name other actions as "high priority" would dilute the importance of the above-mentioned actions. However, actions to improve the technical assistance program, to place the suggested beneficiary training program into effect, and to seek means to increase Fondosal sales can be carried out independently and concurrently. It has been suggested that FONDOTIENDAS is not a profit center and should be phased out. However, since it is not losing money, immediate action seems not to be necessary.

K. Lessons Learned

When the attempt is made to adapt and transfer a successful development project from one country to another, it is essential to know what conditions existed in the first country which contributed to its success. In this case, the Colombian experience in the 1960-1980 period is the model.

a. Capitalization

Banking and cattle industry leaders convinced the Colombian legislature in 1959 to set up the capital resources organizations (BANCO GANADERO and FONDOS GANADEROS) which were needed to expand production and improve productivity. The law required participation in capital formation by ALL cattle producers. It provided for "seed capital" to be provided by the public sector and a transition to private sector control with public sector supervision to assure continuing social responsibility.

The capitalization plan for the Honduras project accepted a farm property in lieu of a cash purchase of shares by the GOH. While this is a significant asset, it did not make a positive contribution to the initial profitability of the FONDO. As a matter of fact, it diverted technical, administrative and financial resources away from the formation of livestock on deposit programs, which are the principal business of FONDO. In addition, promises from private sector organizations to purchase shares were only partially complied with. To obtain voluntary purchases of stock in a company which is losing money will now prove to be difficult.

b. Marketing

The Colombian livestock development plan started operations at a time when international markets for beef were expanding. In contrast, the Honduras project came on the scene when international markets were contracting. Central American producers are almost limited to domestic markets which have limited purchasing power so demand is slack and prices are depressed. This situation can be expected to improve as the economic "cattle cycle" continues. We are in a period when herd inventories can be built up so cattle will be available when prices improve.

c. Enterprise Selection

The FONDOS GANADEROS OF COLOMBIA work exclusively on beef cattle production. They favor growing and fattening enterprises

and limit the number of breeding companies so they can concentrate on those enterprises which are most profitable and which produce CASH which can be shared. They limit the level of supervision and technical advice to that which is necessary to assure the success of their joint venture production enterprises. Each FONDO establishes its own criteria concerning the size of the cattle production companies and the selection of partners within broad parameters set by the public sector.

f. Honduras, the restriction to 50 hectares or less results in high administrative and technical assistance costs which hurt the profitability of the FONDO and probably create production enterprises with an income too small for depositor families.

Recognizing the fact that markets for milk are likely to be stronger for milk than for beef, the Honduras project attempts to adapt the FONDO GANADERO concept to milk production. Attempts to do so by the FONDO GANADERO DEL ATLANTICO in the middle 60's were unsuccessful. The changes in the contract suggested elsewhere in this report could improve the situation. A development project conducted through a dairy would have a good chance of success because loans to farmers to purchase cattle and build infrastructure could be controlled by amortization from milk deliveries to the dairy. Technical assistance and creditor control by the dairy in its own self-interest to obtain larger supplies of high quality milk should be a part of project design.

d. Too much---Too Fast

The FONDO GANADERO de HONDURAS would possibly have been in a better financial situation if it had been able to grow more slowly. It has been carrying the cost of a large administrative and technical assistance staff for several years. The income from the number of cattle in the FONDO inventory and on deposit in production companies could not support the load. Experience in the selection of depositors and the management of the production enterprises was purchased at the high cost of failure of over 20% of the initial contracts. The diversion of technical, management and financial resources to the habilitation of the home farms and to the massive importation of purebred cattle from the USA and Costa Rica is another example of too much-too fast.

XIII. ACKNOWLEDGEMENTS

The evaluation team wishes to express appreciation for the collaboration and cooperation it has received from officers, directors and personnel of the FONDO GANADERO de Honduras. The free exchange of opinions, the willingness to provide us with information concerning the business of the FONDO and the expression of friendliness and good-will helped us to complete our task.

The compilation of facts and economic analysis contained in the "Financial and Economic Study of the FONDO GANADERO de Honduras a Marzo 31, 1987" prepared by Carlos Valderrama with the collaboration of Dr. Jose Tercero, Chief of the Technical Services Division, Ernesto Mejia, Chief of the Administration Division, Dr. Miguel Silva, Technical Services Advisor and Jerry Dease, Systems Advisor, was essential.

The presence of Ing. Miguel Angel Bonilla on the evaluation team was a welcome addition. His complete knowledge of the Honduran environment, the history of the project and contacts with persons in the public and private sectors helped us to understand the present situation.

When Ing. Ivan Madrid accepted the post of General Manager early this year, he requested his staff, with the assistance of the technical assistance contractors, to prepare a diagnosis of each one of the various businesses of the FONDO. These complete studies were particularly valuable to our deliberations. We sincerely thank Ing. Madrid for his support and guidance.

The guidance and candor provided by Francisco Vasquez, President of the Board of Directors, and the opportunities provided to us to conduct a dialogue with the Board of Directors helped us to understand the politics of management of the FONDO. Even though the Board of Directors represents a wide variety of interests, it is evident that they have a sincere desire to have the FONDO GANADERO succeed.

A great deal of help and assistance was provided by Richard Hughes of USAID/Honduras. His willingness to share his knowledge of some of the complexities and history of FONDO GANADERO greatly aided the team. Assistance of this kind provided guidance which saved valuable time and greatly assisted the team in completing the evaluation in the allotted time.

Special thanks is hereby extended to Carlos Valderrama for sharing his experience as the manager of a successful FONDO in

Colombia. He and his secretary, Helen Vanslike, helped us to arrange transportation, secretarial and translation services, check cashing and similar essential logistical support.

APPENDICES

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ATTACHMENT B
STATEMENT OF WORK

USAID/Honduras
INTERIM EVALUATION OF THE FONDO GANADERO DE HONDURAS

I. PROJECT TO BE EVALUATED

The evaluation will focus on the financial viability of the Fondo Ganadero de Honduras, S.A. de C.V., the entity implementing the Small Farmer Livestock Improvement Project (522-0209). The Project Agreement was signed on September 28, 1983 for a total of \$3 million in AID Grant and \$10 million in AID Loan funds. This seven year effort has a PACD of September 30, 1990.

II. PURPOSE

USAID/Honduras and the Board of Directors of the Fondo Ganadero de Honduras (Fondo) have agreed that an interim evaluation of the Project should be performed to: (1) measure the extent to which Project objectives have been and are being met, (2) identify organizational, operational and financial factors which are affecting Fondo functional efficiency, consolidation and growth, and (3) make specific recommendations on actions to be taken to enhance the Fondo's operational efficiency and financial and institutional viability.

The Fondo Board of Directors and Management will utilize the evaluation results to make necessary adjustments in organizational structure, financial policies and practices, operational procedures and the firm's goals and objectives. USAID/Honduras and its counterparts will utilize the evaluation results to improve overall Project design and management, which may lead to the redefinition and/or amendment of the specifics contained in Annex I of the Project Agreement regarding contractual relationships, beneficiary classification, and livestock sub-program size and mix. USAID/Honduras will utilize the evaluation results to make appropriate adjustments in the Project LOGFRAME and LOP targets related to Action Plan objectives as shown in Semi-Annual Reports and other Mission reporting documents.

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USAID/Honduras is also interested in understanding how private sector development institutions such as the Fondo can be adequate mechanisms for enhancing the agricultural productivity of small and medium-sized producers and organized farmer groups. The evaluation results will also be utilized as input to a report on the role of the private sector in Honduran development and the self-sufficiency and sustainability of private sector institutions supported by A.I.D. funding. The for-profit orientation of the Fondo will be of particular importance in assessing the self-sufficiency issue since many A.I.D. funded private sector institutions are not for-profit organizations.

The information is required by July 31, 1987 in order to make any necessary changes and adjustments prior to the end of CY 1987.

III. BACKGROUND

The purpose of the Small Farmer Livestock Improvement Project is to increase the number and the productivity of small- and medium-sized individual and group farm livestock operations, resulting in an increase in the size of the national herd and the domestic production of livestock products.

To achieve this purpose the Fondo Ganadero de Honduras, S.A. de C.V., a mixed-capital producer-controlled corporation, was established. The Fondo's principal functions are to provide in-kind credit (cattle), technical assistance, training and infrastructure credit to individual producers and organized campesino groups interested in initiating or expanding their livestock operations. The Fondo is modeled after the Colombian institutions of the same name.

The major Fondo program is Livestock on Deposit. Under this program the Fondo places cattle with cooperating producers who manage them in return for a share in the proceeds resulting from the operation.

The Fondo initiated operations in November of 1984 when it began accepting and processing applications for cattle. The first placements of cattle were made in late March of 1985. The Fondo currently has 8,951 head of cattle on deposit with 128 individual and group livestock operations.

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The Fondo also owns and operates two farms which serve as livestock production centers and holding areas for Fondo cattle in transit. Puerto Arturo, located near Tela, is currently managing 406 head of dairy cattle. Santa Cruz, located near Choluteca, is currently managing 420 head of beef cattle.

In addition the Fondo owns and operates two subsidiary businesses: FONDOSAL, a plant in Choluteca which produces a livestock salt/mineral supplement provided to operations with cattle on deposit and sold to the general public, and FONDOTIENDAS, an agricultural supply store which retails veterinary supplies to participating cattle producers and the general public.

The Fondo is a for-profit business operating within a set of social/equity guidelines. According to the Project Agreement, 80% of the Fondo herd is to be deposited with owner-operators having less than 50 hectares of land and with organized agrarian reform cooperatives. However, this has to be accomplished without jeopardizing the entity's financial and institutional viability.

Since the financial viability of the Fondo operation is essential to its continued existence as a private for entity, it is necessary to evaluate its current organizational, operational and financial status to make any adjustments necessary to enhance its viability and sustainability.

IV. STATEMENT OF WORK

The evaluation team will undertake the work necessary to answer the following questions regarding Project implementation in the general areas specified. The analysis should take into account such things as organizational structure, personnel system and operational policies and procedures.

A. Livestock on Deposit Program

1. Is the Fondo in-kind credit (Livestock on Deposit) program rationally defined and functioning in a manner consistent with operational efficiency, financial viability and the Fondo's goals and objectives? Specifically,
 - a. Is the current system of classifying depositors defined and implemented so as to achieve the intent of the Project while differentiating between small and medium-sized farmers (Class A and Class C Depositors) especially with regard to:

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- (i) the 50 hectare limitation on land holdings for Class A Depositors?
 - (ii) the limitation regarding access to formal credit?
 - b. What changes, if any, are recommended in the current system of depositor classification to improve its program focus and operational effectiveness?
2. In the operation of the Livestock on Deposit Programs (milk, dual purpose, cow-calf, yearling and fattening) what factors most affect the Fondo's commercial viability? Specifically,
- a. Is the current contract which defines the distribution of responsibility and income between the Fondo and its depositors providing an acceptable return for both?
 - b. What is the minimum number of cattle which should be deposited with an operation under each Program to produce an acceptable return to the Fondo and the depositor?
 - c. What is the maximum number of cattle which can be deposited with an operation under each Program while maintaining the focus of the project?
 - d. What has been the impact of each Program on livestock production, farm income, labor and investment and the standard of living for each depositor classification?
 - e. Do the current production parameters of each Program (calving rates, calving intervals, weaning weights, milk production, length of lactation, daily weight gains) indicate that production efficiencies are being achieved with Fondo depositors in comparison to similar operators who are not participating in the Program?

B. Technical Assistance Program

What has been the impact of the Technical Assistance provided by Fondo extension agents on livestock production, depositor income and Fondo financial viability? Specifically,

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1. Are the Fondo cattle on deposit being properly supervised and managed to obtain efficient, profitable production?
2. Is technology transfer, i.e., the use of improved production technologies, taking place and what impact has it had on Fondo depositors?
3. Is the Fondo Technical Unit organized, staffed and operated to provide for adequate selection of depositors and efficient cattle purchase, placement, and supervision?
4. Is the Technical Unit effectively assisting depositors to resolve their individual operational and livestock management problems?
5. What changes, if any, should be made in Technical Unit organization and operation to improve the timeliness and effectiveness of depositor supervision and the provision of technical assistance to depositors?

C. Complementary Credit Program

Is the provision of Complementary Credit effectively supporting individual depositor livestock production? Specifically,

1. Are the current credit policies defined by the Fondo consistent with the desired impact?
2. Are the procedures for identifying credit needs and authorizing and supervising loans resulting in the efficient provision of credit?
3. Is the Program being effectively utilized to support livestock production at the depositor level?
4. What changes, if any, should be made to improve the Program and enhance the Fondo's and beneficiaries' overall viability?

D. Beneficiary Training

What are the constraints to meeting the training needs of current and potential Fondo depositors? Specifically,

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1. How can a training program best be designed and implemented to produce benefits for the depositors and the Fondo?
2. How can training be organized and focused to meet producer needs while having a positive cost/benefit ratio for the Fondo?

E. Fondo Home Farms

Is the current organization and operation of the Home Farms consistent with the overall goals and objectives of the Fondo? Specifically,

1. Are the goals and objectives of the Home Farms well defined, reasonable and attainable?
2. Do the Home Farms have sufficient organizational and administrative support to operate efficiently?
3. What is the impact of serving as a center for cattle in transit on the operating costs of the Home Farms?
4. What changes, if any, are recommended in the organization and operation of the Home Farm Program to support the attainment of Fondo goals and objectives in an efficient, cost-effective manner?

F. Production Inputs Program

Is the Fondo's Production Inputs Program organized and operated in an efficient, profitable manner? Specifically,

1. Is the FONDOSAL Program properly organized to operate as a self-contained profit center? Specifically,
 - a. Is the operation commercially viable as it is currently organized and operated?
 - b. What is the potential for growth of the operation and how can it best be achieved?
 - c. What is the actual and potential impact of the FONDOSAL operation on the Honduran cattle industry?

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- d. What changes, if any, are recommended in FONDOSAL organization and operation to achieve maximum impact and profitability?
2. Is the FONDOTIENDAS Program properly designed and organized to operate as a self-contained profit center? Specifically,
 - a. Is the FONDOTIENDAS operation commercially viable as it is currently organized and operated?
 - b. What is the potential for growth of the operation and how can it best be achieved?
 - c. What is the actual and potential impact of the FONDOTIENDAS operation on the Honduran cattle industry?
 - d. What changes, if any, are recommended in FONDOSAL organization and operation to achieve maximum impact and profitability?

G. Financial Status

- . What is the actual financial condition of the Fondo Ganadero? Specifically,
 - a) Is the Fondo organized and operated in a manner which will result in long-term operational and financial viability?
 - b) What are the major biological and economic factors affecting the Fondo's operational and financial status, and how can the Fondo best take advantage of the positive and minimize the effects of the negative factors?
 - c) How can remaining A.I.D. funds best be utilized to enhance Fondo operational and financial viability?
 - d) When will the Fondo Ganadero be able to generate sufficient income to cover its operating expenses? Will this point be reached by the time A.I.D. funding terminates? If not, what additional financial support and/or specific actions will be required for the Fondo to reach the breakeven point?

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- e) What changes, if any, are recommended in organizational structure, operational design and Program planning and implementation to achieve operational and financial viability?
2. What is the current status of Fondo Ganadero capitalization efforts?
 - a) Is the Fondo pursuing a strategy which will result in the attainment of its goals regarding capitalization?
 - b) What are the constraints to Fondo capitalization in each of the shareholder categories?
 - c) How can the constraints identified be resolved? What alternatives are possible for resolving the capitalization issue? Which alternatives are recommended and why?

H. Revision of Goals

Based upon the information available in the Fondo records, the information gathered by the evaluation team, and the current status of the Project, what adjustments should be made in the Project goals and objectives as reflected in the major planning documents? Specifically,

1. What indicators in the Project LOGFRAME, if any, should be revised to reflect what the Project can actually expect to accomplish? If revisions are indicated, what should the revised figures be?
2. What changes, if any, should be made in the Fondo Implementation Plan?
3. What will the Project contribute annually to the achievement of the Mission Action Plan Objectives with regard to the following:
 - a) Value of Agricultural Production Generated by Project activities (Lps)?
 - b) The contribution to Agricultural GDP (Value added) of the production generated by Project activities (Lps)?

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- c) Value of Traditional Agricultural Exports Generated by Project Activities (\$)?
 - d) Productive Employment Generated by Project Activities (person/years)?
 - e) Increase in real incomes of Project beneficiaries?
4. What is the estimated cost/benefit for the Project based upon actual performance and projected benefits?
 5. What has been the impact of the Project, if any, on rural families and women?

The evaluation team will present the answers to these questions in an organized form reflecting its findings, conclusions and recommendations. The logical sequence followed to arrive at recommendations should be clearly defined and presented.

V. METHODS AND PROCEDURES

The primary source of information to be utilized by the evaluation team will be the records of the Fondo Ganadero de Honduras. The Fondo has a computerized management information system, which can be accessed by the evaluation team. The Data Systems Management Specialist from Servicios Técnicos del Caribe who helped develop the information system and his Fondo Ganadero professional counterpart will be available to provide an orientation on the information available.

It is expected that this information will be complemented by site visits to Fondo activities, personal interviews with Fondo cooperating producers (individuals and agrarian reform groups), and interviews with individual livestock producers and agrarian reform groups who are not participating in the program. A primary source for this information could be interviews with producers who have applied for Fondo cattle and have not yet formally entered the program. Also, information provided by applicants may be used to establish comparisons between Fondo operators and non-Fondo operators.

The evaluation team will receive from AID prior to arrival in country selected material such as a copy of the Project Paper, the Project Agreement and Annex I, AID Quarterly and Semi-Annual Reports, AID Financial Reviews, Reports from the Contractors, the Fondo Implementation Plan, and other Fondo planning documents as provided by

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the Fondo Board of Directors and General Manager. The evaluation team will be expected to review these documents as well as internal audits and "diagnósticos" carried out to date. The team will also have access to additional AID project documentation as required through Kurt A. Rockeman, Project Officer and Richard Hughes, Project Liaison Officer.

The team leader will be responsible for developing a methodology for estimating (1) the Project's contribution to the achievement of Mission Action Plan Objectives, and (2) the estimated cost/benefit of the Project. This will be done in consultation with the Mission Office of Economic and Program Analysis.

The team leader will be required to begin work in Honduras at least three days prior to the arrival of other team members. The team leader will utilize this time to review the information available, plan further data collection that will be required, identify host country participants in the evaluation, and work with the Project Officer, the Project Liaison Officer and the Fondo General Manager in logistical planning for the evaluation.

The contractors will be expected to work a six-day week. A team planning meeting will take place in-country with the participation of USAID/Honduras Project officials prior to initiation of field activities.

The beneficiary population (target group) is comprised of small individual cattleman and organized agrarian reform cooperatives. The beneficiaries are recognized as cattleman, are basically independent in nature and represent a wide range of political views. However, they are faced with similar problems in access to resources to establish or expand their livestock operations.

It is anticipated that the evaluation will require extensive field work. The evaluation effort will be based in San Pedro Sula. Field work and site visits will require travel to the areas of Fondo operation including Tela, La Ceiba, Choluteca and Olancho. Fondo Home Farms are located near Tela (Puerto Arturo) and Choluteca (Santa Cruz). FONDOSAL operations are based in Choluteca. Minimal time in Tegucigalpa is expected, with the major requirements being for an orientation briefing with the team leader, and a debriefing with USAID and GOH counterparts prior to team departure.

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The Fondo Ganadero de Honduras will provide a limited amount of work space, complementary vehicle support, resource persons and documents and some secretarial support for daily work requirements.

USAID/Honduras will provide assistance from contractor personnel assigned to the Fondo, the full-time presence of a host-country technician to assist the evaluation team, and Mission liaison through the Agricultural and Rural Development Office.

The contractor will be expected to arrange for vehicle and secretarial support, translations and report preparation.

VI. COMPOSITION OF THE EVALUATION TEAM

The evaluation team members must have extensive background and experience in the areas of Livestock Production, Extension, Agribusiness and Financial Management. The evaluation team will be made up of the following specialities and qualifications:

A. Livestock Economist - This person will function as the evaluation team leader. Should have a minimum of ten years of broad general experience in production economics and at least five years of experience working in Latin America. Spanish language capability at the S-3+, R-3+ level is required. Should have practical experience in translating the biological functions involved in livestock production into economic and financial information. A M.S. degree in Economics or Agricultural Economics with a strong practical background in Livestock Operations is required. Prior evaluation experience is required, and prior experience as team leader is desirable. The team leader will be responsible for initial evaluation planning and for the preparation of the final report.

B. Livestock Extension Specialist - Should have a minimum of ten years of broad general experience in livestock extension and at least five years of experience working in Latin America. Spanish language capability at the S-3, R-3 level is required. An M.S. degree in Animal Science or a degree in Veterinary Medicine with emphasis in animal nutrition or dairy production is required. An educational background in extension methodology and experience in working with small livestock operations is required. Practical experience in tropical livestock production, tropical pasture management, applied animal nutrition and animal health is desirable. This person will have the primary responsibility for evaluating the production impact of the Fondo's extension program on participating producers.

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C. Agribusiness Management Specialist - Should have a minimum of ten years of agribusiness management experience, and at least five years experience as the manager or chief operational officer of a successful agri-business. Should have at least five years of experience working in Latin America. Spanish language capability at the S-3, R-3 level is required. A minimum of an M.S. degree in Agricultural Economics, or an M.B.A combined with a B.S. in Agricultural Economics or Animal Science is required. A background in Farm and Ranch Management, combined with some practical knowledge of farm records, applied animal nutrition, herd management and the biological factors affecting livestock operations is desirable. This person will be primarily responsible for evaluating the Fondo Home Farms and subsidiary business operations.

D. Financial Management Specialist - Should have a minimum of ten years experience in Financial Management with at least five years of experience as a high-level Financial Analyst in a successful agribusiness concern and five years of experience working in Latin America. Spanish language capability at the S-3, R-3 level is required. A practical knowledge of computerized accounting systems and cost-center accounting is required. Background/experience in livestock-oriented operations or business is desirable. This person will be primarily responsible for evaluating the Fondo's financial status and budgeting practices, and elaborating the necessary cash flow analyses and financial projections.

USAID/Honduras will provide the full-time services of a highly respected and qualified Honduran agricultural professional with extensive background and knowledge of the Honduran livestock industry, as well as of the initial design and organization of the Fondo Ganadero. He will serve as the chief local resource person for the team, will assist team members in understanding local conditions and will participate fully in the evaluation effort in-country.

VII. REPORTING REQUIREMENTS

1. Report Format: The contractor will be responsible for the preparation of a written report containing the following sections:

- a) Executive Summary - The Executive Summary should not exceed five single-spaced typed pages, and should contain a clear, concise summary of the most critical elements of the report. The Summary should include the following elements:

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- i) The purpose of the activity evaluated, including the existing constraints and what is being done to address them.
 - ii) The purpose of the evaluation and the analytical method used, including the types and sources of evidence used to assess the effectiveness and impact of the activity.
 - iii) A discussion of the major findings and conclusions related to the specific questions in the Scope of Work.
 - iv) A summary of the recommendations made in response to the specific questions posed in the Scope of Work.
- b) Table of Contents
- c) Body of the Report - The body of the report should describe the context in which the Project is being implemented, and specify the information, evidence and analysis on which the conclusions and recommendations are based. It will include specific sections on the Project's developmental impact and lessons learned.
- d) Conclusions and Recommendations - The report should end with a full statement of conclusions and recommendations. The conclusions should be short and succinct, with the topic identified by a subheading related to the questions posed in the scope of work. Recommendations should correspond to the conclusions, and specify who should take the recommended actions.

The body of the report should contain no more than 50 pages. Additional details and information upon which conclusions and recommendations are based may be included in appendices or annexes to the report.
- e) Appendices - At a minimum the report will include the following as appendices:
 - i) The Evaluation Scope of Work
 - ii) The Project Logical Framework together with a brief summary of the current status/attainment of inputs, outputs and purposes.
 - iii) A description of the methodology used in the evaluation.
 - iv) A projection of operating income and expenses, and a detailed cash flow for the Fondo Capitalero through 1990.

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- v) A projection of the Fondo Ganadero profit and loss statements through 1990.
- vi) A projection of annual Fondo Ganadero balance sheets through 1990.
- vii) A detailed estimation of the Project's contribution to the achievement of the Mission Action Plan Objectives.
- viii) A detailed presentation of the estimated cost/benefit of the Project.
- ix) A bibliography of documents consulted.

2. Submission of Report: The contractor will be responsible for providing the Agriculture and Rural Development Office, USAID/Honduras, with ten copies of the Final Report (five copies in English and five copies in Spanish) no later than July 31, 1987.

A draft report in English and Spanish is required before the team leaves the country on/or about July 15. USAID/Honduras will review the draft report and TELEX any comments to the team leader by July 22. Five work days are provided for completion of the final report by the Team Leader after field work is completed.

3. Debriefings: The Evaluation Team will be responsible for debriefing the Fondo Ganadero Board of Directors and Management regarding their findings, conclusion and recommendations in San Pedro Sula prior to departure. The Team Leader will be responsible for identifying the individual team members who will participate in the debriefing.

The team leader will also be responsible for debriefing USAID/Mission staff and GOH counterparts in Tegucigalpa prior to departure.

VIII. FUNDING

The evaluation will be funded from Project 522-0209 Grant Funds. The cost of the local professional will be funded from Local Currency Technical Support Trust Funds. The cost of this portion of the evaluation is estimated at \$70,000. An illustrative budget is included as Attachment A of this PIO/T.

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APPENDIX B

PROJECT LOGICAL FRAMEWORK

The attached Project Logical Framework was a major object of study of the team during its document review. Although elements of the Logframe are addressed throughout this report, the team concentrated its comments in two principle sections:

Section X, Comparison of Actual Results or Current Projection with Implementation Plan, addresses the financial benchmark objectives for FONDO as contained in the Logframe, comparing them with actual/current projections. In summary, the current projections indicate total sales to be a little more than half of what the Logframe projected; the sale of capital stock is a little less than half of Logframe projections; the gross profit for cattle is a third with the gross profit for merchandise at about 13% of Logframe projections. Costs, on the other hand, are generally higher than projected in the Logframe with administration exceeding its target by 19% and home farm costs exceeding the projection by more than double; the technical assistance cost, however, is about 90% of its Logframe projection. Additionally, herd size is about 88% and the Government of Honduras loan balances are 70% of the Logframe projections.

Section XI, Revision of Goals, addresses in detail the key elements contained in the Logframe and suggests more current and attainable targets for the project in the future. In summary, some of the Logframe weaknesses addressed include:

- o Project Purpose: The Logframe shows 5,500 livestock-producing families which the team finds to be either a typographical error or an unrealistic number. Additional target figures were thought to be overly optimistic, given the current project progress.
- o Project Outputs: The team reports the FONDO model does not work very well to help form dairies and suggests a better way to finance and operate a dairy project.
- o Design and Implementation Problems:
 - The capitalization plan is seriously flawed with short-term results of operating ranches having a negative impact on cash flow for Class A shares.
 - Timing of the importation of purebred cattle is a major contributing factor to the precarious financial status of FONDO.
 - Absorption and implementation of the good technical assistance recommendations given to FONDO has been difficult due to the small Honduran staff.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ATTACHMENT A
Page 1 of 4

LIFE OF PROJECT:
From FY 83 to FY 90
Total U.S. Funds: \$ 13,000,000

PROJECT TITLE & NUMBER: Small Farmer Livestock Improvement, 522-0209

<u>NARRATIVE SUMMARY</u>	<u>OBJECTIVELY VERIFIABLE INDICATORS</u>	<u>MEANS OF VERIFICATION</u>	<u>IMPORTANT ASSUMPTIONS</u>
<p>PROGRAM OR SECTOR GOAL:</p> <p>To increase the incomes and quality of life of rural farm families while increasing domestic production of cattle and beef and dairy products.</p>	<p>Measures of Goal Achievement:</p> <p>Average income of farm families working less than 50 hectares and members of agrarian reform groups increases by 100% by year 2000.</p> <p>Honduras self-sufficient in fluid fresh milk production by 2000.</p> <p>Beef exports (live and slaughtered animals) increases by 100% by 2000.</p> <p>National cattle herd doubles in size by 2010.</p>	<p>Ministry of Natural Resources/CONSUPLANE data.</p> <p>Data from milk plants. Ministry of Hacienda import statistics.</p> <p>Ministry of Natural Resources/CONSUPLANE/ Ministry of Hacienda data.</p> <p>Ministry of Natural Resources data.</p>	<p>Assumptions for Achieving Goal Targets:</p> <p>Complementary livestock activities of MNR, INA, and other donors continue. Export markets remain open.</p>

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2

PROJECT PURPOSE:

The purpose of this Project is to increase the productivity of small farm livestock operations and to increase the number of such operations.

Conditions that will indicate purpose has been achieved: END OF PROJECT STATUS:

1. By 1990, 5500 livestock producing families will be utilizing modern livestock production practices on group farms and small commercial farms under 50 hectares in size.
2. Fondo Ganadero will have introduced cattle on approximately 20% of its participating farms during LOP.
3. Fondo Ganadero Participating producers realize following productivity increases in time frames indicated:
 - (a) Calving rate will increase from 60% (national avg. 1983) to 80% in year 4.
 - (b) Daily milk production will increase from 3 liters/day/cow (national avg. 1983) to 5 liters/day/cow in year 4.
 - (c) Length of lactation will increase from 220 days/cow/yr (national avg. 1983) to 300 days/cow/yr in year 4.
 - (d) Adult mortality will decrease from 6% (national avg. 1983) to 3% by year 4.
 - (e) Calf mortality will decrease from 20% (national avg. 1983) to 6% by year 3.
 - (f) Slaughter age will decrease from 48-60 mos. (national avg. 1983) to 24-30 mos. in year 4.
 - (g) Average slaughter weight increases from 315 kg/animal (national avg. 1983) to 400 kg in year 4.

MNR records and data
Project records & data
Project evaluations

Assumptions for achieving Project Purpose:

Continued private sector support for Fondo Ganadero.
Increasing numbers of producers to adequate marketing infrastructure.

OUTPUTS:

Establishment of a FONDO
GANADERO in Honduras.

1. In-kind animal lending
program operating.

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2. Technical and livestock
management skills of
participating producers
increased.

3. Viable, self-sustaining
infrastructure credit fund
operating.

Magnitude of Outputs:

1.1 6200 head of cattle on loan
to qualified participants by
December 1985.

1.2 80% of herd on loan is lent
to target group families in
December 1985.

1.3 60% of herd is in breeding
operations by December 1985.

2.1 Technical services: each
participating producer receives
a minimum of 8 hrs (1 day) technical
assistance/follow-up per month.

2.2 Training: each FG cooperating
producer participates in pre-loan
training program.

2.3 Technical and herd management
improvements initiated on 75% of FG
cooperating farms by 1988.

3.1 Credit policies and loan procedures
established by December 1984.

3.2 Automatic loan payment mechanism
functioning so that loan recovery rate
approaches 90% in first round of lending.

TA reports
Project Monitoring Rep.
Project mid-term eval.
Audit reports

Assumptions for achieving
Outputs:

1. Continued private
sector support.

2. No natural disasters
which cause major loss
of animal life.

INPUTS:

Budget: (U.S. \$000)

A. Paid in Capital of which AID funds are programmed for:	AID: \$10,000,000 GOH: \$ 1,000,000 PVT Sector: \$3,500,000
1. Animals	AID: \$ 5,030,000
2. Equipment	AID: \$ 976,000
3. Operating Expenses	AID: \$ 618,000
4. Farms: Rehabilitation & Stocking	AID: \$ 218,000
5. Inputs and supplies	AID: \$ 404,000
6. Infrastructure credit	AID: \$ 2,000,000
7. Training	AID: \$ 500,000
B. Technical Assistance/Services	AID: \$ 3,101,000

Assumptions for achieving
Project Inputs:

Audit reports
AID Controller records

Project Agreement signed
Satisfaction by GOH of
CP's
Satisfactory progress
towards achieving
outputs

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APPENDIX C

METHODOLOGY OF EVALUATION

Preliminary investigative and analytical work was done by the technical advisors of the FONDO (FEDERACION DE FONDOS DE COLOMBIA/WINROCK INTERNATIONAL) (SERVICIOS TECNICOS DEL CARIBE/CLAPP AND MAYNE) with the collaboration and active assistance of officers and personnel of FONDO GANADERO DE HONDURAS. The title of this report is, "Estudio Economico y Financiero del FONDO GANADERO de Honduras a Marzo 31 de 1987."

A second report, prepared specifically for the evaluation team, was prepared by Ing. Miguel Angel Bonilla under a USAID/Honduras contract titled "Informe sobre el FONDO GANADERO de Honduras" and dated 3 June 1987. These two up-to-date reports plus the extensive bibliography provided to us is the foundation of the analysis.

The evaluation team:

1. Visited the ranches of cattle companies to observe the work of the extensionists, to interview depositors, to see how liquidations and control visits are conducted, and to observe the work of the FONDO supervisors and home farm personnel.
2. Discussed the preliminary observations of the evaluation team with the officers and directors of the FONDO, the technical advisors, officers of AID, the evaluation follow-up team, and the board of directors. This procedure gave us valuable feed-back to test the validity of our preliminary findings.
3. Determined the extent of compliance with the implementation plan and implementation of suggestions of the technical advisors.
4. Conducted a series of formal and informal round table discussions among the members of the evaluation team to share observations and experience and arrive at the consensus which is presented in this report.

APPENDIX D
FINANCIAL PROJECTIONS

PROJECTED BALANCE SHEET
(000 L.)

	1986	1987	1988	1989	1990
ASSETS					

Current Assets					
Inventory of Cattle	5,844	7,120	11,044	10,800	12,463
All Other	1,937	1,885	1,625	2,230	1,692
Land	1,358	1,358	1,358	1,358	1,358
Fixed Assets	1,620	1,700	1,800	1,900	2,000
Less: Depreciation	243	470	720	980	1,250
	1,377	1,230	1,080	920	750
Deferred Costs	386	150	100	50	
T O T A L	10,902	11,743	15,208	15,358	16,263
LIABILITIES AND NET WORTH					

Accounts Payable	391	200	300	400	600
Govt. of Honduras Loan	10,255	12,555	16,555	16,555	17,000
Net Worth					
Capital Stock	1,671	1,800	2,000	2,350	2,750
Accumulated Deficit	(1,552)	(3,012)	(3,997)	(4,347)	(4,587)
Deferred Profit	137	200	100	400	500
	256	(1,012)	(1,667)	(1,597)	(1,097)
T O T A L	10,902	11,743	15,208	15,358	16,263

PROFIT + LOSS STATEMENT

(000 L.)

	1986	1987	1988	1989	1990
SALES					
Cattle	573	250	570	720	330
Merchandise	309	480	600	1,000	1,250
Milk	219	355	605	655	690
Total	1,101	1,085	1,775	2,375	2,270
COST OF SALES					
Cattle	410	155	410	520	240
Merchandise	186	300	400	660	830
Total	596	465	810	1,180	1,070
Gross Profit	505	620	965	1,195	1,200
OPERATING COSTS					
Administration	836	720	700	600	600
Technical Assistance	453	5	550	550	550
Puerto Arturo	566	700	500	250	130
Santa Cruz	191	180	160	100	110
Other (Net)	(25)	30	40	45	50
	2,021	2,080	1,950	1,545	1,440
Less: Costs Deferred	726				
	1,295	2,080	1,950	1,545	1,440
NET INCOME	(790)	(1,460)	(985)	(350)	(240)

CASH FLOW STATEMENT
(000 L.)

	1986	1987	1988	1989	1990
	-----	-----	-----	-----	-----
SOURCES OF FUNDS					

Net Income	(790)	(1,460)	(985)	(350)	(240)
Plus: Depreciation and Amort.	294	463	300	310	320
	-----	-----	-----	-----	-----
Increase (Decr.) in	(496)	(997)	(665)	(40)	80
Accounts Payable	(307)	(191)	100	100	200
Sale of Capital Stock	329	129	250	300	400
Decrease (Inc.) in Other					
Current Assets	(1,512)	12	259	(604)	538
	-----	-----	-----	-----	-----
T O T A L	(1,986)	(1,047)	(76)	(244)	1,218
	-----	-----	-----	-----	-----
USES OF FUNDS					

Increase in Cattle Inventory	1,770	1,236	3,924	(244)	1,663
Less: Deferred Liquidation Profit	(70)	(63)	(100)	(100)	(100)
	-----	-----	-----	-----	-----
Capital Expenditures	1,700	1,173	3,824	(344)	1,563
	524	80	100	100	100
	-----	-----	-----	-----	-----
T O T A L	2,224	1,353	3,924	(244)	1,663
	-----	-----	-----	-----	-----
Increase in Honduras					
Government Loan	4,210	2,300	4,000	0	445
	-----	-----	-----	-----	-----

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PRODUCTION MODELS

MODEL 1-A

BREEDING PROGRAM

1. Total land area 50 ha.; 35 ha. in pasture land and 15 in forests and others = L. 25,000.			
2. 3% mortality for adult cows and 6% for calves is used.			
3. Investment			
Cows 25 a L. 900 c/u		22,500.00	
Bull 1 a L.2,500 c/u		2,500.00	

		L. 25,000.00	
4. Production			
Calves 25 v. x 70%	=	17	
Deaths		1	

		16	
5. Revenues			
Calves 16 x 350 lbs c/u x L.0.62/l	=		L. 3,472.00
Milk 16 v x 2 l x 180 d x L. 0.5	=		L. 2,880.00

			6,352.00

REVENUES FROM MILK

<u>TO FONDO</u>	L. 2,880.00	<u>TO DEPOSITOR</u>
1,625.00 (L.65/vaca)		L. 1,255.00

REVENUES FROM ANIMALS

1,562.40	4%	L. 3,472	55%	1,909.60
3,187.40		PAID		3,164.60
250.00		TECHNICAL ASSISTANCE 1%		(250.00)
(298.35)	Minerals & Veterinary Products (L.19.5/UA)			(364.65)
(58.50)	Transportation (L.5/cab)			(71.50)
(2,880.00)	Admin. and Assistance Costs L.111/cab			-
-----				-----
L. 194.55				L. 2,478.45
6. 194.55		Compensation to		2,160.00
-----	= 0.8% profitability	depositor		-----
25,000.00		Net Worth		318.45
		318.45		
		-----	= 1.3% profitability	
		25,000.00		

MODEL 1-B

BREEDING PROGRAM

1. 100 ha. in pasture land, worth L. 50,000.00

2. 5% mortality rate for calves is used.

3. Investment

Cows	75 v x 900 c/u	L. 67,500.00
Bulls	1 x 2,500 c/u	7,500.00

L. 75,000.00

4. Production

Calves	75 x 70% = 53
Deaths	2

51

5. Revenue

Calves	51 x 350 lbs x 0.62 =	11,067.00
Milk	51 x 2 lt x 180 x 0.5 =	9,180.00

20,247.00

REVENUES FROM MILK

FONDO

4,875.00 L. 65/vaca

9,180.00

DEPOSITOR

4,305.00

REVENUES FROM ANIMALS

11,067.00

4,980.15

4

55%

6,086.85

9,855.15

750.00

Technical Assistance 1%

10,391.85

(903.83) Minerals & Veterinary Products (L19.5/UA)

(750.00)

(175.50) Transportation L. 5/cab

(104.68)

(8,658.00) Admin. and Technical Assistance Costs

(214.50)

867.82

8,322.67

6. 867.82

----- = 1.2% Profitability
75,000.00

Compen. Dep'tor 2,160.00

2 Assistants 4,320.00

1,842.67

1,842.67

----- = 3.7% profitability
50,000.00

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MODEL 2
DUAL PURPOSE PROGRAM

1. 65 ha. pasture land valued at L. 32,500.00.			
2. 3% mortality in adults and 5% in calves are used.			
3. Investment			
Cows	50 x 1,300 c/u	=	65,000.00
Bulls	2 x 2,500 c/u	=	5,000.00

			L. 70,000.00
4. Production			
Calves	50 x 70%		35
Deaths			2

			33
5. Revenues			
Calves	33 x 0.65 x 331.15 lbs	=	7,103.17
Deaths	2 cows		(2,600.00)

			4,503.17
Milk	33 x 240 x 3 x 0.5		11,880.00

			16,383.17

REVENUES FROM MILK

<u>FONDO</u>		11,880.00	<u>DEPOSITOR</u>
7,500	L.150/vaca		4,380.00
REVENUES FROM ANIMALS			
2,000.43	45%		55%
			2,476.74

9,526.43			6,856.74
700.00	Technical Assistance 1%		(700.00)
(612.00)	Minerals & Veterinary Products (L19.5/UA)		(748.00)
(117.00)	Transportation L. 5/cab		(143.00)
(5,772.00)	Costos Administracion y Asistencia Tecnica		-

3,725.43			5,265.74
3,725.43			
-----	= 5.3%	Compen. Dep'tor	2,160.00
70,000.00		1 Assistant	2,160.00
6. Profitability 5.3%			

			945.74
Profitability			945.74

			= 2.9%
			32,500.00

MODEL 3

DAIRY FARMING PROGRAM

1. 38 ha. in pasture land valued at L. 19,000

2. 6% mortality rate in calves is used

3. Investment

Cows	25 x 2,000	50,000.00
Bull	1 x 3,000	3,000.00

		53,000.00

4. Production

Calves	25 x 70% =	17.5
Death		1

		16

5. Revenues

Male Calves	8 x 260	2,080.00
Female Calves	8 x 380	3,040.00

		5,120.00
Milk	17 x 5.6 l x 0.5	12,852.00

		17,972.00

REVENUES FROM MILK

<u>FONDO</u>			<u>DEPOSITOR</u>	
5,750.00	L.230/vaca	12,852.00		7,102.00
		SALE OF ANIMALS		
2,304.00	45%	5,120.00	55%	2,816.00
-----			-----	
8,054.00				9,918.00
530.00	Technical Assistance 1%			(530.00)
(298.35)	Minerals & Veterinary Products (L19.5/UA)			(364.65)
58.50)	Transportation L. 5/cab			(71.50)
(2,886.00)	Admin. and Technical Assistance Costs			-
-	Complimentary Food Costs			(2,203.20)
-----	L.129.6/milking cow		-----	
5,301.50				6,748.65
6. 5,301.50				Compen. Dep'tr 2,160.00
-----	= 10% profitability			0.5 Assistant 1,080.00
53,000.00			-----	
				3,508.65
	Profitability	3,508.65		
		-----	= 18%	
		19,000.00		

MODEL 4

GRAZING PROGRAM FOR CALVES

1. 0.75 ha. in pasture land per 350 lb. calf. The operation lasts one year. The cost of the land is L. 500/ha x 0.75 = L. 375.
2. 3% mortality rate is used.
3. Investment
1 calf 350 lbs x L. 1.0/lb = 350.00
4. Revenue
Sale of 1 calf 750 lbs x 0.97/lb (3% mortality) = 727.50
Purchase of 1 calf 350 lbs x 1.0/lb = 350.00

377.50

REVENUES

<u>FONDO</u>		377.50		<u>DEPOSITOR</u>
169.88	45%		55%	207.63
-----				-----
3.5	Technical Assistance	1%		(3.50)
(8.78)	Minerals & Veterinary Products	(L19.5/UA)		(10.73)
(2.25)	Transportation	L. 5/cab		(2.75)
(111.00)	Admin. and Technical Assistance Costs			-
-----				-----
57	per calf			190.65/calf
3,594.50	x 70 calves			13,345.15 x 70 calves
5. 3,594.50				
-----	= 15% Profitability	Compen. Dep'tr	2,160.00	
24,500		Assistant	2,160.00	

			9,025.15	
	Profitability	9,025		
		-----	= 34%	
		26,500		

90

MODEL 5

GRAZING PROGRAM FOR YOUNG BULLS

1. 0.75 ha. in pasture land per 350 lb. bull. The operation takes one year. The land costs L. 500/ha x 0.75 ha = L. 375.

2. 3% mortality rate is used.

3. Investment

1 Young Bull 350 lbs x L. 0.65 = 228.00

4. Revenue

Sale 1 young bull, 750 lbs x 0.6305 (3% mortality) = 473.00
 Buy 1 young bull 350 lbs x 0.65 = 228.00

 245.00

REVENUE

FONDO

110.25 45%

245.00

DEPOSITORN

55% 134.75

2.28	Technical Assistance 1%	(2.28)
(8.77)	Minerals & Veterinary Products (L19.5/UA)	(10.73)
(2.25)	Transportation L.5/cab	(2.75)
(75.00)	*Cost of Admin. and Tech. Assist. (8 visits)	-

26.51/young bull		118.99/y.b.
3,048.65 x 115 young bull		13,683.85 x 115 y.b.
5 3,048.65		

----- = 12% Profitability	Depositor 2,160.00
26,220.00	1 Assistant 2,160.00

	9,363.85	
Profitability	9,363.85	
	----- = 22%	
	43,500.00	

* 8 visits per year.

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MODEL 6

FATTENING PROGRAM FOR YOUNG BULLS

1. 1.0 ha. in pasture land per 650 lb. young bull. The program lasts 6 mos. The land costs L. 500/ha. of pasture land.

2. 3% mortality rate is used.

3. Investment

1 young bull 650 lbs x 0.65 = 422.50

4. Revenue

Sale 1 young bull 900 lbs x 0.679 (3% mort) = 611.10

Buy 1 young bull 650 lbs x 0.65 = 422.50

188.60

REVENUE

FONDO

84.87 45%

188.60

DEPOSITOR

55% 103.73

4.22 Technical Assistance 1% (4.22)

(8.77) Minerals & Veterinary Products (L19.5/UA) (10.73)

(2.25) Transportation L. 5/cab (2.75)

(43.50)*Admin. and Technical Assistance Costs -
----- (1 43.5; 3 visits in 6 months) -----

34.57/Young bull in 6 months 86.03

3,007.59 for 87 young bulls 7,484.61 for 87 y.b.

5. 3,007.59

----- = 8.2% Profitability Comp. Dep'tor 2,160.00

36,757.50 cost young bulls 1 Assistant 2,160.00

6 months -----

3,164.61

Profitability 3,164.61

----- = 7.3% in
43,500.00 6 months

* 3 visits in 6 mos.

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F. ECONOMIC ANALYSIS

The reasoning which is the basis for the economic analysis follows:

1. Projections of herd inventory, the value of the herd inventory and sales of cattle, milk and other products which result, or are expected to result, due to project activities are compared with a herd of similar characteristics under the existing conditions and management systems.
2. The expenditure of resources to obtain the results in the "with project" and "without project" scenarios are then calculated.
3. The difference in the net income is given as the net economic benefit. The same information is used to provide a calculated Gross Domestic Product, using production and income methods.

An excellent analytical study of the livestock industry titled, "DIAGNOSTICO DE LA GANADERIA DE HONDURAS", was produced by Latinoconsult and Consultores Agricolas in March, 1984. The information is based on a carefully designed survey of 6,292 livestock farms, interviews with key persons in the production, marketing and industrialization phases of the industry and the statistical series. Since it covers all the factors needed to calculate GDP, the study will be used as a basis to describe the "without project" scenario. This report presents a highly detailed cost/benefit study of the effects on productivity of a series of animal husbandry practices.

The field work was done Feb-May 1983. Our primary interest is in the characteristics of those ranches which are in the 10-20 hectare, 20-50 hectare, 50-100 hectare classifications. This roughly corresponds to herds from 10 to 200 animals. There is a wide variation among the various geographic and climatic zones so information is selected according to the areas where the FONDO GANADERO is active. Zones II, III, V approximate the area of interest.

The assumptions used to develop the tables presented in this Appendix were: In the "with project" tables, the 1986-1988 herd increase occurs as a result of purchases plus the effect of biological parameters. From 1989 forward the herd increase is the result of births, minus deaths minus extraction for market.

	1986	1987	1988	1989	1990
Birth Rate	60	62	70	72	75
Calf Mortality (%)	9	8	7	7	7
Adult Mortality (%)	4	3	3	3	3
Market weight (lbs.)	680	700	710	720	750
Milk/cow/year (liters)	912	1095	1280	1300	1320

These changes in productivity indices reflect what can reasonably be expected in the herds of the FONDO GANADERO as a result of improved animal husbandry. The introduction of animals with an improved genetic ability to produce milk, plus pasture rotation and improvement, mineralized salt and supplemental feeding should improve milk production and market weight. Control of breeding season by keeping records of bull services, separation of bulls from cows to avoid births during unfavorable seasons, pregnancy checks and mineralized salt will make it possible to attain the birth rates. The establishment of a disease and parasite control regime plus adequate corrals and chutes will help to reduce adult and calf mortality and increase safety for farm workers.

The assumptions of a 55% calving rate, 10% calf mortality, 5% adult mortality, 660 pounds live weight at slaughter and 730 liters of milk per cow year are taken from the March 1984 analytical study for the "without project" tables.

The numbers and values shown in the tables differ from those in the project paper because they show as faithfully as possible the actual results of part of 1985-1986 and part of 1987. 1988 and the years beyond are projections.

Prices and values are in 1987 lempiras. Milk price is Lps.0.50 per liter, live cattle are priced at Lps.0.65 per pound.

RESPONSE TO COMMENTS IN MISSION LETTER DATED Oct. 5, 1987

The letter suggests that, "The AID loan drawdown is only considered in the "with-project" scenario. Since loan drawdown to date is in effect a sunk cost for both the with and without-project scenarios, it should be either included in or excluded from both." While we agree that the funds expended to date are in effect a "sunk cost", we do not agree that it is a "sunk cost" for BOTH the with and without-project scenarios. In the absence of the investments of money, time and effort expended by the project, there would be no difference from the National herd averages.

Another statement, "--the annual increase in the value of the herd, which is clearly nothing but an increase in capital stock,

has been considered to be one of the annual benefits of the Project. This tends to over-state the Project benefits. It involves double counting, since both the increase in the value of the capital stock and the additional output due to such stock are counted as benefits."

The argument is sound economic theory in the sense that the change in value of the inventory from year to year is an unrealized capital gain or loss. It is a characteristic of the cattle industry that a rancher "Lives poor and dies rich". That is to say that, over the years the economic investments made to improve the value of the land, to establish the production infrastructure, to increase the carrying capacity of the land, to have more cattle and to have the value of the cattle enhanced by breeding and selection are unrealized capital gains. When the enterprise is liquidated, if it ever is, the accrued values are realized. So, having "lived poor" because the return on investment in cattle production is low, one "dies rich" when the land, cattle and equipment are sold and the incremental values are realized.

It does no harm to quantify the accrued value of inventory changes if the user of the document realizes that there is an element of "double counting" from the standpoint of strict economic theory. The way in which it is presented in this report illustrates that there are unrealized capital gains or losses that are accruing to the investment.

Models to project herd inventory changes on an individual or National herd have been developed. The calculations factor in the ratio of bulls to cows, the calving rate, mortality rates for young and mature animals, the ratio of male-female slaughter breeding herd replacement and age at slaughter. This method was probably the one used to make the projections of herd inventories which are shown in the Project Paper. The projection shown in the evaluation report were hand calculated and then put on electronic worksheets. Unfortunately, they cannot readily be manipulated to produce "What if?" scenarios. However, Jerry Deese, the computer technical advisor of the STC/CLAPP+MAYNE team, was able to construct an electronic work sheet based on a model which Jim Bleidner constructed in Colombia in the 1960's. It was available only during the last two days of our field work in Honduras. A diskette containing this and other worksheets will be supplied to Mission staff so they can undertake further analysis of the Project as requested in the Oct. 5, 1987 letter.

WITH PROJECT

PRODUCTION INDEX	1986	1987	1988	1989	1990
BIRTH RATE	60	62	70	72	75
ADULT MORTALITY	9	8	7	7	7
CALF MORTALITY	4	3	3	3	3
MARKET WEIGHT	680	700	710	720	750
LITERS MILK/YEAR	912	1,095	1,280	1,300	1,320

Description	No. Head	Price	Value	Purchases	Bio Inc	Total Head	Total Value
YEAR 1986							
Cows	3,137	900	2,823,300	0	0	3,137	2,823,300
Bulls	165	2,600	429,000	0	0	165	429,000
Male Cfs.	1,017	325	330,525	0	0	1,017	330,525
Female Cfs.	1,007	325	327,275	0	0	1,007	327,275
Steers (2-3 yrs)	678	700	474,600	0	0	678	474,600
Heifers (1-3 yrs)	1,002	700	701,400	0	0	1,002	701,400
Male Yrlngs	1,205	410	494,050	0	0	1,205	494,050
Breeding Yrlngs	136	800	108,800	0	0	136	108,800
Bulls (2-3 yrs)	77	1,900	146,300	0	0	77	146,300
TOTALS	8,424		5,835,250			8,424	5,835,250

YEAR 1987							
Cows	3,270	900	2,943,000	300	0	3,570	3,213,000
Bulls	131	2,600	340,600	2	0	133	345,800
Male Cfs.	1,013	325	329,225	0	94	1,107	359,775
Female Cfs.	1,013	325	329,225	0	94	1,107	359,775
Steers (2-3 yrs)	700	700	496,300	0	0	709	496,300
Heifers (1-3 yrs)	852	700	736,400	800	0	1,852	1,295,400
Male Yrlngs	2,059	410	516,190	800	0	2,059	844,190
Breeding Yrlngs	141	800	112,800	0	0	141	112,800
Bulls (2-3 yrs)	80	1,900	152,000	0	0	80	152,000
TOTALS	8,658		5,955,740	1,902		10,758	7,180,040

Sales							
Cows		455	0	Herd Value			
Bulls 1yr		455	0	Change +/- 1,344,790			
Bulls 2yrs		455	0	Sales 498,225			
Steers		455	0	Total 1,843,015			
Heifers		455	0				
TOTALS	1,095	455	498,225				

SALES	693	455	315,315				
				4,941,000			
				585,000			

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YEAR 1988							623,025
Cows	4,290	900	3,861,000	1,200	0	5,490	623,025
Bulls	175	2,600	455,000	0	50	225	2,205,000
Male Cfs.	1,500	325	487,500	0	417	1,917	1,505,000
Female Cfs.	1,500	325	487,500	0	417	1,917	389,500
Steers (2-3 yrs)	2,000	700	1,400,000	1,150	0	3,150	70,800
Heifers (1-3 yrs)	1,000	700	700,000	1,150	0	2,150	152,000
Male Yrlngs	942	410	386,220	0	8	950	
Breeding Yrlngs	26	800	20,800	0	0	26	11,044,350
Bulls (2-3 yrs)	80	1,900	152,000	0	0	80	
TOTALS	11,513		7,950,020	3,500		15,905	

Sales							
Cows	428	455	194,740				
Bulls 1yr	80	455	36,400				
Bulls 2yrs		455	0				
Steers	709	455	322,595				
Heifers	600	455	273,000				
TOTALS	1,817	455	826,735				5,388,300

Herd Value	
Change +/-	3,864,310
Sales	826,735
Total	4,691,045

YEAR 1989							624,000
Cows	5,987	900	5,388,300	0	0	5,987	700,375
Bulls	240	2,600	624,000	0	0	240	630,000
Male Cfs.	2,155	325	700,375	0	0	2,155	1,960,000
Female Cfs.	2,155	325	700,375	0	0	2,155	731,030
Steers (2-3 yrs)	900	700	630,000	0	0	900	16,800
Heifers (1-3 yrs)	2,800	700	1,960,000	0	0	2,800	49,400
Male Yrlngs	1,783	410	731,030	0	0	1,783	
Breeding Yrlngs		800	16,800	0	0	21	10,800,280
Bulls (2-3 yrs)	26	1,900	49,400	0	0	26	
TOTALS	16,067		10,800,280				16,057

Sales							
Cows	400	455	182,000				
Bulls 1yr			0				
Bulls 2yrs	62	455	28,210				
Steers	3,055	455	1,390,025				
Heifers			0				
TOTALS	3,517	455	1,600,235				5,766,300

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YEAR 1990						
Cows	6,407	900	5,766,300	0	0	6,407 780,975
Bulls	256	2,600	665,600	0	0	256 1,190,000
Male Cfs.	2,403	325	780,975	0	0	2,403 2,391,200
Female Cfs.	2,403	325	780,975	0	0	2,403 820,000
Steers (2-3 yrs)	1,700	700	1,190,000	0	0	1,700 24,000
Heifers (1-3 yrs)	3,416	700	2,391,200	0	0	3,416 38,000
Male Yrlngs	2,000	410	820,000	0	0	2,000
Breeding Yrlngs	30	800	24,000	0	0	30 12,457,050
Bulls (2-3 yrs)	20	1,900	38,000	0	0	20
TOTALS	18,635		12,457,050			18,635

Sales				Herd Value	
Cows	700	455	318,500	Change +/-	99
Bulls 1yr		455	0	Sales	720,265
Bulls 2yrs	10	455	4,550	Total	720,364
Steers	873	455	397,215		
Heifers		455	0		
TOTALS	1,583	455	720,265		

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WITHOUT PROJECT

PRODUCTION INDEX

BIRTH RATE	55
ADULT MORTALITY	4
CALF MORTALITY	10
MARKET WEIGHT	720
LITERS MILK/YEAR	730

Description	No. Head	Ave. Value	TOTAL VALUE
YEAR 1986			
Cows	3,137	900	2,823,300
Bulls	165	1200	198,000
Male Cfs	1,017	280	284,760
Female Cfs	1,007	280	281,960
Heifers (1-3 yrs)	1,002	650	651,300
Males (1-2 yrs)	1,205	385	463,925
Steers (2-3 yrs)	678	650	440,700
Bulls (1-2 yrs)	136	400	54,400
Bulls (2-3 yrs)	77	900	69,300
TOTALS	8,424		5,267,645

Annual Sales	No. Head	Ave. Wt.	Ave. Price	TOTAL SALES
COMPANIES (111)	879	680	0.65	389,518

YEAR 1987

Cows	3,385	900	3,046,500
Bulls	135	1200	162,000
Male Cfs	931	280	260,680
Female cfs.	931	280	260,680
Heifers (1-3)	900	650	585,000
Males (1-2 yrs)	900	385	346,500
Steers (2-3 yrs)	1,157	650	752,050
Bulls (1-2 yrs)	100	400	40,000
Bulls (2-3 yrs)	31	900	27,900
TOTALS	8,473		5,484,010

Annual Sales	No. Head	Ave. Wt.	Ave. Price	TOTAL SALES
	1,387	680	0.65	612,054

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YEAR 1988

Cows	3,570	900	3,213,000
Bulls	143	1200	171,600
Male Cfs	982	280	274,960
Female cfs.	982	280	274,960
Heifers (1-3 yrs)	1,132	650	735,800
Males (1-2 yrs)	800	385	308,000
Steers (2-3 yrs)	864	650	561,600
Bulls (1-2 yrs)	38	400	15,200
Bulls (2-3 yrs)	96	900	86,400

TOTALS 8,607 5,641,520

Annual Sales	No. Head	Ave. Wt.	Ave. Price	TOTAL SALES
	1,290	680	0.65	570,180

YEAR 1989

Cows	4,000	900	3,600,000
Bulls	160	1200	192,000
Male Cfs	1,100	280	308,000
Female cfs.	1,100	280	308,000
Heifers (1-3 yrs)	1,000	650	650,000
Males (1-2 yrs)	850	385	327,250
Steers (2-3 yrs)	768	650	499,200
Bulls (1-2 yrs)	34	400	13,600
Bulls (2-3 yrs)	16	900	14,400

TOTALS 9,028 5,912,450

Annual Sales	No. Head	Ave. Wt.	Ave. Price	TOTAL SALES
	1,100	680	0.65	486,200

YEAR 1990

Cows	4,200	900	3,780,000
Bulls	180	1200	216,000
Male Cfs	1,155	280	323,400
Female cfs.	1,155	280	323,400
Heifers (1-3 yrs)	1,290	650	838,500
Males (1-2 yrs)	875	385	336,875
Steers (2-3 yrs)	816	650	530,400
Bulls (1-2 yrs)	40	400	16,000
Bulls (2-3 yrs)	30	900	27,000

TOTALS 9,741 6,391,575

Annual Sales	No. Head	Ave. Wt.	Ave. Price	TOTAL SALES
	1,250	630	0.65	511,875

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SOCIAL BENEFITS

(000 L.)

WITH PROJECT

	1986	1987	1988	1989	1990
Number of Head	8,424	10,578	15,905	16,067	18,635
Value of Herd	5,835	7,180	11,044	10,800	12,457
No. of Companies	111	139	210	211	245
Benefits					
Total	1,164	2,956	6,606	4,066	5,547
Sale of Milk	858	1,113	1,915	2,710	3,170
Sale of Cattle	306	498	827	1,600	720
Incr. Value - Herd		1,345	3,864	(244)	1,657

WITHOUT PROJECT

Number of Head	8,424	8,473	8,607	9,028	9,741
Value of Herd	5,258	5,484	5,642	5,912	6,392
No. of Companies	111	111	113	119	127
Benefits					
Total	1,018	1,508	1,445	1,548	1,876
Sale of Milk	630	680	718	792	845
Sale of Cattle	388	612	570	485	552
Incr. Value - Herd		216	157	271	479

NET SOCIAL BENEFITS

	146	1,448	5,161	2,538	3,671
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OPERATING COSTS

(000 L.)

WITH PROJECT

	1986	1987	1988	1989	1990
	----	----	----	----	----
No. Depositarios	111	139	210	211	245
Total Depositario Cost	1,270	1,591	2,401	2,415	2,809
Land	487	611	921	926	1,078
Pastures	35	43	65	66	76
Installations	102	127	192	193	225
Production Costs	646	810	1,223	1,230	1,430

WITHOUT PROJECT

No. Depositarios	111	111	113	119	127
Total Depositario Cost	1,612	1,612	1,641	1,717	1,844
Land	487	487	496	523	557
Pastures	35	35	35	37	40
Installations	102	102	104	109	116
Production Costs	646	646	658	681	740
Cattle	342	342	348	367	391

NET ECONOMIC BENEFIT

(000 L.)

	1986	1987	1988	1989	1990
COSTS WITH PROJECT					
Operating Costs	1,270	1,591	2,401	2,415	2,809
Loan Drawdown	10,255	2,300	4,000		445
T O T A L	11,525	3,891	6,401	2,415	3,254
WITHOUT PROJECT					
Operating Costs	1,621	1,621	1,641	1,717	1,844
ADDITIONAL COST	9,904	2,270	4,760	698	1,410
NET SOCIAL BENEFIT	146	1,448	5,161	2,538	3,671
Difference	(9,758)	(822)	401	1,840	2,261
Cumulative		(10,580)	(10,179)	(8,339)	(6,078)
	1991	1992	1993	1994	1995
Difference	2,370	2,440	2,510	2,590	2,670
Cumulative	(3,708)	(1,268)	1,242	3,832	6,502
Internal Rate of Return	8.5%				

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CALCULATED GDP

 (USING PRODUCTION AND INCOME METHODS)
 (000 L.)

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	YEAR 1987			YEAR 1988			YEAR 1989			YEAR 1990		
	WITH PROJECT	WITHOUT PROJECT	GDP ADDED	WITH PROJECT	WITHOUT PROJECT	GDP ADDED	WITH PROJECT	WITHOUT PROJECT	GDP ADDED	WITH PROJECT	WITHOUT PROJECT	GDP ADDED
PRODUCTION												

Sales	1,611	1,292		2,742	1,288		4,310	1,277		3,890	1,397	
Changes in Inventory of Final and In-Process Products	1,345	216		3,864	157		(244)	270		1,657	480	
Inventories-End this year	7,180	5,484		11,044	5,642		10,800	5,912		12,457	6,392	
Less: Inventories-End last year	5,835	5,628		7,180	5,484		11,044	5,642		10,800	5,912	
Value of Farm Produce Consumed	177	142		268	144		269	152		313	162	
Gross Value of Farm Production	3,133	1,650		6,874	1,589		4,335	1,699		5,860	2,039	
Less: Cost of Intermediate Product	269	102		268	144		402	108		466	117	
VALUE ADDED	2,864	1,548	1,316	6,606	1,445	4,161	3,933	1,591	2,342	5,394	1,922	3,472

INCOMES GENERATED												

Wages	853	617		1,288	497		1,296	592		1,506	780	
Rent Payments	611	487		921	496		926	523		1,078	557	
Interest Payment												
Indirect Taxes												
Depreciation	127	444		192	452		193	476		225	507	
Profits Before Income Tax	1,273			4,205			1,518			2,585	78	
VALUE ADDED	2,864	1,548	1,316	6,606	1,445	4,161	3,933	1,591	2,342	5,394	1,922	3,472

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APPENDIX G

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