BIBLIOGRAPHIC DATA SHEET

PN-AAJ-252

MANAGING SMALL FARMER CREDIT PROGRAMS: A CASE STUDY IN HONDURAS

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1980, 99P.
(IN INT. DEVELOPMENT SERIES NO. 80-4) (FUNDED BY AID UNDER COOPERATIVE AGREEMENT AID/TA-CA-1)

ARC NUMBER - HO332.71.P252
CONTRACT NUMBER - AID/TA-BMA-2
PROJECT NUMBERS - 9311134
SUBJECT CLASS - AE100000G358

DESCRIPTORS - HONDURAS
SMALL FARMERS
BUDGETING
AGRICULTURAL CREDIT
CASE STUDIES
CREDIT INSTITUTION

# Managing Small Farmer Credit Programs

## A Case Study In Honduras

Loren L. Parks
Harry P. Mapp, Jr.

AID/ta - CA - 1
Project No. 931-1134-02

Cooperative Agreement Between
USAID, Oklahoma State University and
Colorado State University

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# Preface

This report is one of a series emanating from the joint Oklahoma State University - Colorado State University cooperative agreements on Small Farmer Credit with the Agency for International Development. The overall objective of the project was to carry out small farm data collection analysis activities to improve credit use. The specific objectives of the cooperative effort between the two Universities and the agricultural development banks in Honduras and the Dominican Republic are to: (a) develop data collection and analysis approaches for use by credit institutions; (b) test these approaches in developing countries; and, (c) disseminate the results.

The approach envisioned and implemented was to evaluate alternative methodologies for farm level data collection and farm management analyses. These steps led to recommendations for improving credit allocation to small farmers in developing countries. Another major part of the project involved training of counterpart personnel and Bank loan personnel in credit policies and farm management approaches for solving small farmer credit problems.

The in-field phase of the project began in Honduras with the Banco Nacional de Fomento, now the Banco Nacional de Desarrollo Agricola (BANADESA), on July 1, 1978, and in the Dominican Republic with the Banco Agricola on July 1, 1979. Dr. Loren Parks, faculty member in the Department of Agricultural Economics at Oklahoma State University (OSU), was the field staff professional in Honduras for two years. Dr. Tom Dickey, faculty member in the Department of Economics at Colorado State University (CSU), is the field staff professional in the Dominican Republic.

The OSU part of this three year cooperative project was funded by AID under Cooperative Agreement AID/ta-CA-1, Project No. 931-1134-02, Basic

Memorandum of Agreement No. AID/ta-BMA-2; CSU operated under AID/ta-Ca-3 and AID/ta-BMA-6. The Credit Project began in 1977.

Dr. William Merrill, former chief of the Economics and Sector Planning Division, Bureau of Development Support, Agriculture, AID, provided early encouragement and leadership in implementing this project; Ms. Anne Grace-Ferguson, Agricultural Economist in ESP/DSB/AGR/AID helped develop the contractual agreements; and, Mr. Erhard Rupprecht and Ms. Karen Wiese, AID served as project managers and provided guidance and support during the past three years. Many in-country AID personnel provided suggestions and support for the project. Strong support of all AID personnel is greatly appreciated. Special recognition is due Mr. René Cruz, President of the Barco Nacional de Fomento in Honduras, Mr. Roberto Valladares, Vice-President of BNF and BANADESA, and Mr. Alfonso Bonilla, former head of the Technical Division where the OSU project was located. Honduran conterparts on the project were Reynerio Barahona, Ricardo Arias and Rolando Medrano.

Faculty involved in the cooperative agreement, included James Osborn, Odell Walker, Harry Mapp, Michael Hardin, and Joe Williams of the OSU faculty, and Kenneth Nobe of the CSU faculty. In addition, J. D. Longwell, CSU Graduate Research Assistant was stationed in the Dominican Republic, and Kurt Rockeman, OSU Research Associate, was stationed in Honduras.

Ronald Tinnermeier
CSU Project Coordinator, and
Overall Project Coordinator
Small Farmer Credit Project

Daniel D. Badger
OSU Project Coordinator
Small Farmer Credit Project

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# MANAGING SMALL FARM CREDIT PROGRAMS: A CASE STUDY IN HONDURAS

## INTRODUCTION

The importance of credit in the production and distribution of agricultural products is likely to increase as price inflation and resource scarcity push input prices up faster than product prices. Farmers the world over find it increasingly difficult to pay for the necessary equipment, chemicals and fuel from their own pockets, forcing them to seek other sources of financing. The problem is particularly acute in less developed countries where large proportions of the farming population have little working capital, and where failure to obtain credit could result in reduced production. When poor farmers cannot obtain credit they often make yield-reducing input substititions or eliminate some inputs altogether (e.g., insecticide, fertilizer). It is also characteristic of less developed countries that capital is so scarce and expensive that it is inaccessible to all but the most financially secure farmers. This situation has led to the creation of government institutions that make more agricultural loans at better repayment terms than the private sector. The institutions take various forms and names, but they can be referred to under the general term of agricultural development banks (ADB's).

Inclusion of "development" in the term is subject to interpretation. To some it means that ADB's finance socially desirable programs which are not necessarily commercially viable, and to others it simply means that they make high risk loans. Interpretation is not merely an academic matter; experience in the National Agricultural Development Bank of Honduras revealed that failure to define the Bank's identity and objectives resulted in con-

flicting and sometimes irrational credit policies. But regardless of how the ADB's role is defined in particular instances, some general characteristics can be identified. First, ADB's are government institutions of one form or another which help implement development schemes and agricultural policies dictated by the government. Second, ADB's give credit to many farmers who cannot or will not obtain credit from the private sector. Third, because ADB's invest in social programs and high risk loans they often lose money. These characteristics invite conflict between those who want a financially solvent banking institution and those who want a development policy tool--particularly when the bank's role is ill-defined.

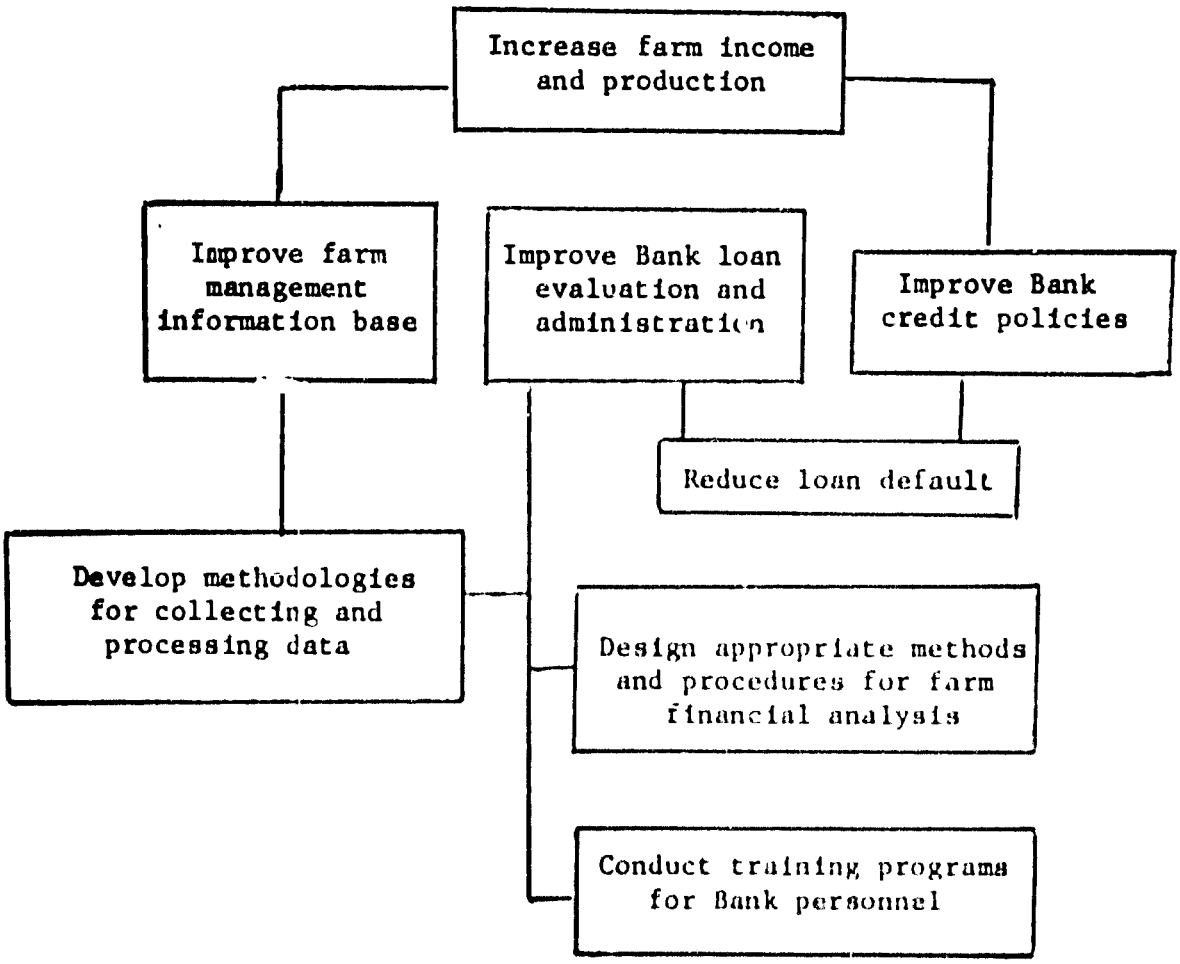
Agricultural development banks have some common problems which lead to justification of the Small Farmer Credit (SFC) project described herein. The majority of agricultural production loans are for very small amounts, resulting in high administration costs per client and per dollar loaned. High costs result from inefficient loan administration procedures, the expense of personal visits to many geographically dispersed farms, and a high default rate requiring extra administrative time. The high rate of default reflects the risk faced by small farmers who have few resources to survive adverse weather, low market prices, or other calamities. These problems are so pervasive in ADB's that the Small Farmer Credit Project was designed to study them and develop methodologies to help solve them.

## Project Objectives

The objectives of the Small Farmer Credit Project (SFC) are shown in Figure 1. The principal objective of increasing farm income and production was coincident with that of the Bank. Three principal sub-objectives were

FIGURE 1. HONDURAS SMALL FARMER CREDIT PROJECT

PRINCIPAL OBJECTIVES



to improve: (1) the farm management information base, (2) loan evaluation and administration procedures, and (3) credit policies. An expected result of improved credit policies and procedures was reduction of the rate of loan default, although reduction was not expected to be observable during the two-year project life. Additional sub-objectives included development of methodologies for collecting and processing farm data, designing appropriate methods and procedures for farm financial analysis, and training Bank personnel.

It should be emphasized that the scope and depth of the project were narrowly defined. The scope included collection and processing farm data for improving the credit administration system; the depth was sought through methodological development However, both project scope and depth were greatly expanded due to the success of the programs and the willingness of the Bank to devote more resources to the project than originally agreed upon.

## Project Programs

The SFC project had three principal program categories: data gathering and processing, loan administration, and training. Individual programs are listed below, with description of program objectives, methodologies and results to follow.

1. Information gathering and processing programs
   - A. Analysis of loan file information
   - B. Farm records
   - C. Enterprise Budgets
   - D. Collection of input and product prices

2. Loan administration programs
   - A. Loan evaluation policies and procedures
   - B. Client classification scheme
   - C. Loan officer's field guide
   - C. Group loans

3. Training programs
   A. Farm financial analysis
   B. Investment analysis
   C. Farm records

The Host Institution

Initial contractual agreements and the majority of project work were carried out with the Banco Nacional de Fomento (BANAFOM). The legal existency of BANAFOM was terminated April 7, 1980, by governmenc decree, but a successor institution was simultaneously created named the Banco Nacional de Desarrollo Agrícola (BANADESA). Although profound changes occurred in personnel and organization, the SFC project maintained the same contractual obligations with BANADESA that it had with BANAFOM, until the project expired on June 30, 1980. The nature of the project and the results obtained generally were unaffected by the institutional change; hence reference to the institution in this report is simply "the Bank" unless there is reason to specify the old or the new.

The Bank is the principal provider of agricultural production credit in Honduras, and the only institution which makes the majority of its loans to medium and small farmers. In 1978 the Bank provided 45 percent of the agricultural production credit supplied by all commercial institutions in the country, or $71.6 million of a total $157.5 million. The number of clients fluctuates over time, but in June, 1979, the Bank listed nearly 30,000 clients; 93 percent were independent farmers and 7 percent were cooperatives or other groups. Inclusion of all group members as clients doubled the number of credit recipients to 60,000. Credit is administered by 28 branch offices, including the Bank headquarters in Tegucigalpa, the capital city.

According to studies undertaken by Coopers & Lybrand, Inc., the average cost of administering a loan increased at a rate of 15 percent per year from 1972 to 1979 while the number of clients remained virtually static [1]. A second major problem was loan default. As of 1979 nearly half of all money loaned (cumulative since 1972) was in arrears. These figures are only partial indicators of the Bank's difficulties, but help explain the need for outside assistance in studying the problems and implementing reforms.

## Underlying Assumptions

The common assumptions underlying the reform of loan administration procedures are that administrative costs and loan defaults will be reduced. It is convenient to pursue reduction in administrative costs because they are easily measured, but the link between administrative procedures and loan default is elusive. More administration might be required to reduce loan defaults. Also it is very difficult to isolate the impact of changes in loan evaluation procedures and policies from the impact of other factors that contribute to default such as adverse weather, pests and diseases, low market prices, or civil disturbances. It is assumed, however, that if all other conditions were held ceteris paribus (i.e., constant) the default rate would diminish as a result of improved loan administration procedures and policies.

## Organization of the Report

Although the SFC project was designed to develop methodologies for dealing with problems common to ADB's, it is impossible to omit discussion of the specific country and institution on which the case study is based.

The situation that existed in the Bank at the outset of the project is therefore described first, followed by development of the overall project design and its component programs. Following presentation of program methodologies and results is a self-evaluation of the project, including general recommendations for ADB's and future projects of this nature.

## THE EXISTING SITUATION

The loan administration procedure in use at the outset of the SFC project was the product of nearly thirty years of piecemeal changes and additions. Numerous forms had been created to satisfy certain information requirements (the need for some of which may have disappeared), resulting in a profusion of forms of different sizes, shapes and colors. Some information was repeated on several forms, some was unnecessary and some important information was not requested at all.

Loan processing created a serious "bottleneck" in the Bank. Every loan was processed the same way regardless of the amount of the loan or the prior loan record of the client. In many cases, very detailed information was required of the borrower. For example, when cattle were used as collateral for a loan, a detailed description of each cow was required. It was not difficult to look at three animals on a small farm and note the sex, color, age, weight and value of each, but the same information requirement existed regardless of herd size. One rancher reported how he painstakingly rounded 250 cattle and moved them through a gate one-by-one so the loan officer could write the required information. In addition, a complete new loan application formwas required of every client each year, regardless of how many years the client had been a reliable Bank customer. The necessity of repeating personal references, farm descriptions, and some other constant information was burdensome, inefficient and became perfunctory over time.

The situation appeared to require installation of a complete new system in lieu of repair. One of the most important objectives of a new system would be replacement of the tedious and inefficient procedures

then required for small loans, which comprise the majority of the Bank's loan requests. Replacement of old procedures required the standardized data collection and analysis systems which the SFC project was intended to design. Administrative procedures for making the loan decision and supervising the loan were to be developed in conjunction with a private consulting company which simultaneously had a contract to overhaul nearly every facet of the Bank's organization and operations.

The problems discussed in this section are limited to those directly related to the SFC project. Many other problems existed which were outside the scope of the project, or with which the project dealt only peripherally.

## The Use of Enterprise Budgets

An enterprise budget is a statement of the particular set of physical and financial production inputs required to obtain a specified quantity of production. It also includes the expected revenues and expenses associated with production of a particular product. Enterprise budgets play an important role in institutions that finance agricultural production. Both the borrower and the lender need an ex ante estimate of production costs and returns to justify the planned activity and the financial transaction. The lending institution typically has a standard budget for each production enterprise which is compared to the client's actual estimated budget. In this manner a judgment can be made as to whether the client's production techniques, costs and returns are reasonable compared to the standard.

The Bank had long used enterprise budgets as upper limits on the amounts of money that could be loaned per unit of land. Correct administrative procedure required the loan officer to prepare an estimate of production costs, activity by activity, for each loan applicant by means of a personal

interview. That procedure helped establish the client's technical knowledge in addition to providing an estimate of enterprise costs and returns. The Bank would not finance that portion of the client's estimated production costs per unit of land which exceeded the standard budget amount either by activity or in total--but a contingency allowance of 10% could be added to the total loan amount authorized. In practice there were problems, discrepancies and deficiencies in the system which are summarized below.

1. Standard budgets were not synthesized according to a uniform methodology. Sometimes they simply represented the best guess of an agronomist, sometimes they were recommended production practices obtained from other government agencies, sometimes they were the result of ad hoc farmer surveys, and usually they were combinations of all these methods.

2. Standard budgets excluded all fixed costs such as depreciation and interest on investment, and excluded some variable costs such as equipment maintenance.

3. Typically, only one standard budget was prepared for the entire country, thereby ignoring the great differences in soils, rainfall, topography, technology, crop yields and input costs. Standard budgets were prepared based on the highest production costs in the country so that the limit would be high enough for all regions. This resulted in unreasonably high loan authorizations in many regions and precluded use of the standard budgets as realistic references for the entire country.

4. Standard budgets did not include information about the timing of production operations, the physical amounts of inputs used, or the price per unit of input. Only the farming activities and their costs per unit of land were listed. This practice precluded making simple changes in physical input-output coefficients or input prices.

5. There was no standard form or procedure for preparing a client's estimated production budget. At best the loan officer made a detailed budget including all physical input quantities and unit prices; at worst he simply copied the standard budget without interviewing the client.

6. There were no standard budgets for livestock or livestock products.

Some of the preceding "problems" are classified as such only in the sense that Bank procedures were not followed. Relative to the revised system envisioned, however, departures from previous procedures sometimes makes little difference. For example, detailed elaboration of each client's production activities and costs is inefficient, and it could be replaced by a good set of standard budgets that should be used as a reference in lieu of making individual client budget estimates. On the other hand, some "problems" perceived by project personnel had not been considered as such by Bank personnel. Lack of a budget synthesis methodology and omission of fixed costs were not recognized problems in the Bank, but they were considered serious deficiencies by project personnel.

Net income from an enterprise is equal to gross revenue minus the sum of variable and fixed costs. Gross revenue for a crop should be estimated by multiplying the total expected production available for sale times the expected product price. The Bank's longstanding policy for grains was to use total expected production for calculating gross revenue without adjustment for disappearance due to family and animal consumption, storage losses, amount retained for seed, or other uses. The smaller the farm the greater the proportion of the product that is not sold, hence the greater the discrepancy between estimated net cash income and actual net cash income. For example, in the Jamastran Valley it was observed that a farmer usually devotes one manzana of land (0.8 hectares) to the production of corn for

non-sale purposes; a five-manzana farm would therefore not realize 20% of the cash income estimated by the Bank for calculation of loan repayment capacity.

The second principal source of error in estimation of gross revenue was the use of unrealistic product prices. In the case of grains the national support price set by the Instituto Hondureño de Mercedo Agrícola (IHMA) was used to calculate gross revenue. But the IHMA price is irrelevant to most farmers. IHMA only purchases until its storage bins are full, and storage capacity is very small. Furthermore, IHMA gives priority to land reform sector farms which often fill all regional storage bins. Aside from the capacity limitation, farmers have so much difficulty arranging transportation to the few IHMA delivery points that intermediaries usally end up reaping the difference between price at the farm gate and the higher price paid at IHMA delivery points. An additional problem is that the IHMA grain price is higher than most farmers receive because they must sell soon after harvest when prices are lowest to pay off their production loans and get cash for living expenses.

The combined effect of production and price overestimates on gross revenue and net income was an overstatement of loan repayment capacity, with the overstatement the greatest for small farms. Not coincidentally, the smaller the farm the higher the rate of loan default. Changes in loan evaluation procedures recommended to mitigate this problem are described subsequently.

Loan Supervision

The Bank's answer to a high rate of loan default was to attempt closer supervision of clients. The principal means of supervision was periodic

farm visits by the loan officers. Each crop cycle was divided into three stages: soil preparation, cultivation and harvest. According to plan each client should have been visited at each stage to verify compliance with his estimated budget plan. The Bank's concern was that clients would spend the money on something other than the inputs required to obtain profitable yield levels. Using similar reasoning, the Bank permitted clients to withdraw only enough money for one stage at a time. The objective of the policy was to reduce the Bank's exposure to losses by maintaining the option to terminate delivery of funds if crop failure, fraud or some other event occurred during the crop cycle.

These policies were costly for both the Bank and the client. A typical farmer double crops and, counting his application and repayment visits, he had to visit the Bank office a minimum of six times a year. The personal cost of transportation and lost work time was formidable. The Bank's costs were also high because each client had to be attended on each visit to the office, plus loan officers were supposed to visit each client repeatedly at his farm. Given the client load of 200 to 400 per loan officer it was physically impossible to maintain the schedule of farm visits. There was no evidence that these supervisory policies were effective in reducing loan default, but it was obvious that the methods used were inefficient. A basic problem was that all clients were treated the same regardless of loan size or repayment record--a problem already mentioned in the discussion of loan evaluation procedures. In the absence of any formal methodology for allocating scarce loan officers' time among clients, each branch office manager allocated clients on an ad hoc basis.

## INFORMATION COLLECTION AND PROCESSING PROGRAMS

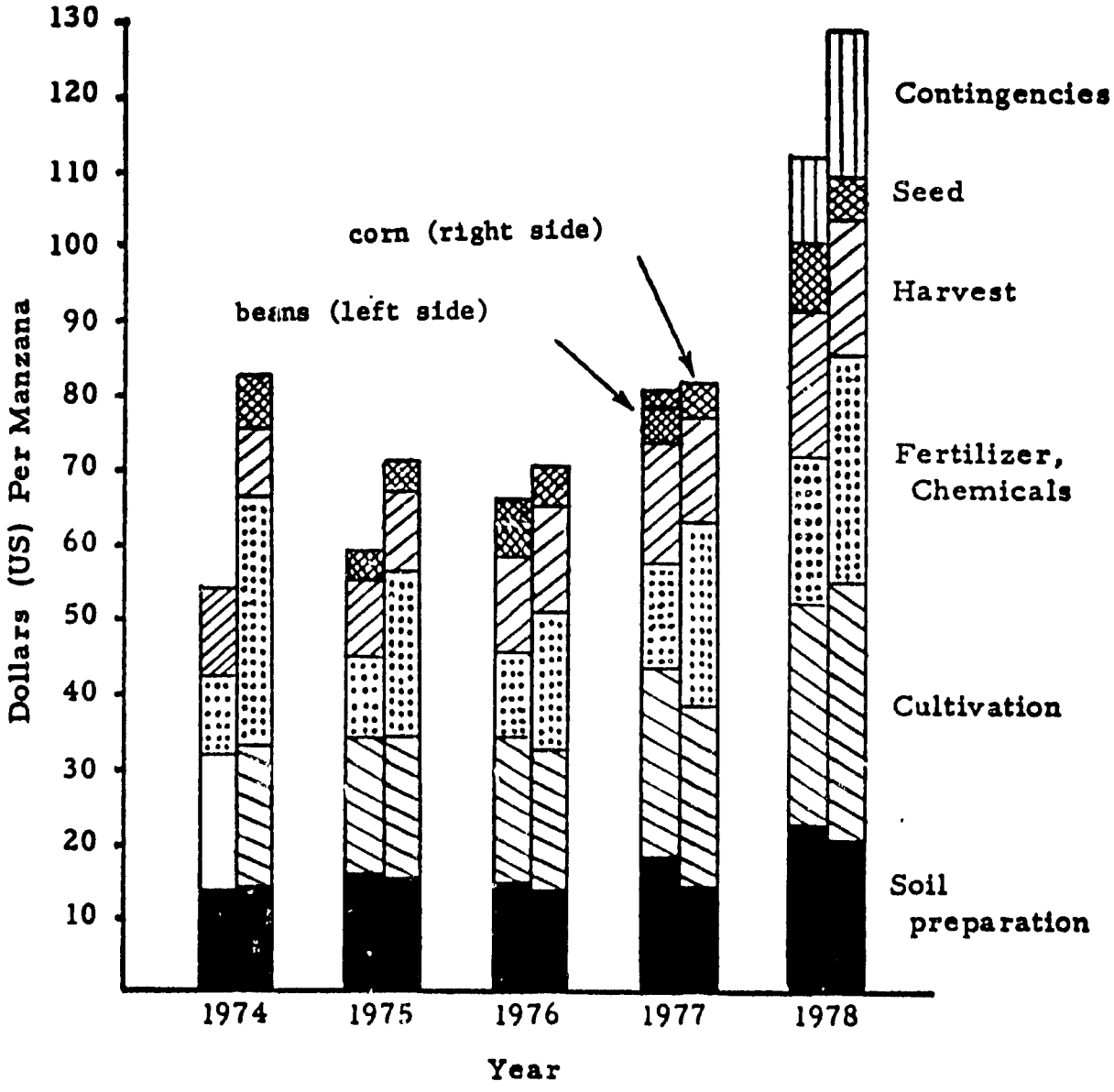
Programs for collection of farm data and putting it in usable form were necessary because existing data were either nonexistent or unsuitable. The principal objectives, methodologies and results of each program are summarized below.

### Analysis of Loan File Information

A limited investigation of loan file information was initiated in the Danli branch in October, 1978 to familiarize project personnel with loan forms, loan procedures, and potential problems. Some principal objectives of the study were to examine how the Bank used enterprise budgets in loan evaluation, how budgets related to loan authorizations and cash disbursements, and how budget estimates related to loan default.

Results: Loan Authorization Trends. Credit files of fifty Bank clients who had produced both corn and beans for five years were examined to determine the trend in average loan authorization by input category. A loan authorization is the amount the Bank will permit the borrower to withdraw, and disbursement is the amount he actually takes. Average authorizations per manzana of land are shown in Figure 2. Note that seed for beans did not appear as a separate input category until 1975, and "contingencies" did not appear until 1978. Inclusion of a contingency amount was to enable the borrower to obtain more money if he used up his authorization in one or more input categories.

FIGURE 2. AVERAGE CREDIT AUTHORIZED PER MANZANA OF LAND FOR CORN AND BEAN PRODUCTION , 1974-1978.



Loan authorizations for both crops increased over time.[1] Including the new contingency category, the average corn authorization increased 58% and the average bean authorization increased 38% from 1977 to 1978. The clients however, were not withdrawing all the money authorized. Average loan disbursements as a percentage of loan authorizations (corn and bean combined) were 64%, 67%, 55%, and 50% chronologically from 1974 through 1978. The trend indicated that for these fifty clients in Danli the Bank loan officers increased authorizations more rapidly than farmers' willingness and/or need to borrow money. The apparent reason, determined from informal interviews of Bank personnel, was that loan officers were strongly influenced by the Bank's standard budgets which showed a similar rate of inflation over time. The results also suggested that loan officers were simply copying the standard budgets for loan applications instead of estimating actual clients' needs. Standard budgets had in effect become not only an upper limit but also the norm. These results helped inspire the enterprise budget program described later.

Results: Loan Default Analysis. The objectives of this analysis were to compare the credit file information on loan defaulters to that of the fifty clients investigated in the previous analysis to (1) determine the causes of loan default in grain production, (2) quantify the relationships between loan default and selected variables which cause default, and (3) establish guidelines for identifying high risk loans.

There were 44 first-time defaulters in grain production in the Danli area in 1978, 17 of which had more than seven manzanas (4.9 hectares) in

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[1] Unusually high fertilizer prices are reflected in loan authorizations for 1974.

one crop. Comparison of defaulters and non-defaulters yielded the following results.

1. There was virtually no difference in the average crop yields estimated for the two groups when the loan applications were filled out.

2. Figures on the average amount of money withdrawn per manazana for corn production reflected a notable difference only in improved seeds, and defaulters withdrew more than non-defaulters.

3. The average amount of money withdrawn per manzana for bean production indicated that defaulters withdrew one-third more for insecticides and fertilizers than non-defaulters.

No conclusions could be reached from these results except that loan file information for this sample was inadequate to meet the research objectives. The only apparent means of doing so would be personal interviews, but neither time nor project priorities permitted continuation.

Farm Records

The primary objective of the farm records program was to obtain information for synthesizing representative farm situations. More specifically, the information would be used to:

1. Identify and verify production coefficients, prices paid and prices received for inclusion in enterprise budgets;
2. Identify and quantify farm resources, including land, labor and capital;
3. Develop financial statements, including income and net worth, for farmer participants;
4. Determine the profitability of each crop and livestock enterprise on the farm;
5. Determine the quantity, cost and source of farm labor;

6. Identify resources used but not owned by the farmers;
7. Determine the source, amount and timing of all cash inflows and outflows; and
8. Determine the quantities of farm-produced products consumed by the farm family.

The secondary objectives of the program were to:

1. Learn about the problems confronting both the farmer and the Bank;
2. Develop improved loan evaluation and administration procedures for the Bank;
3. Develop farmers' awareness of the benefits of record-keeping, and improve their ability to make decisions using the information; and
4. Learn how to organize and manage a records program for small farmers in a less developed country.

The methodology, results, recommendations and future of records systems are discussed briefly in this report, and a separate comprehensive report discusses the program in detail [2].

Methodology. A farm record book was designed for the Honduras project which excluded all reference to income taxes or tax-motivated items such as depreciation schedules [3]. Book design assumed that a local paraprofessional would visit farmers on a regular basis to make book entries. The book has a traditional accounting format so that both farmers and paraprofessionals (record-keepers) can learn basic accounting concepts.

Because some of the participating farmers were likely to be illiterate, a literate record-keeper with easy access to the farms was hired to help keep the books. Participants who lived in close proximity to each other and the record-keeper were selected so that visits could be made frequently and on foot. The "cell" model proved to be the best alternative to overcome the problems of illiteracy, transportation, and the need for frequent visits.

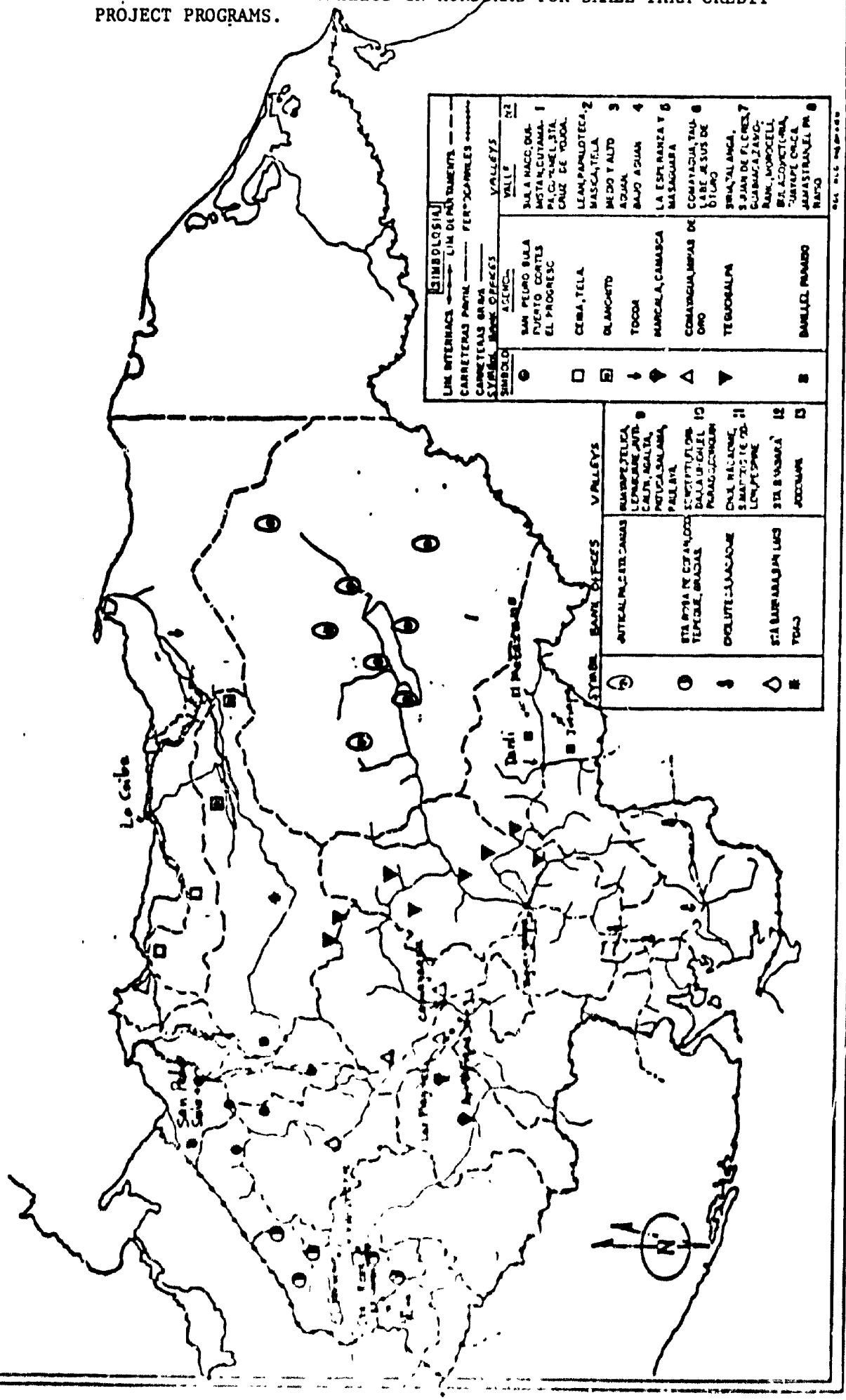
The first site selected was Jutiapa, where ten farmers agreed to begin the program in September, 1978 (see Figure 3). Farmers were first introduced to the program by a loan officer from the Bank who knew them, and who accompanied project personnel on several more farm visits. Introduction was a delicate task because farmers thought records had something to do with taxes. It was important to emphasize to farmers that the information obtained would be kept confidential and that participation was entirely voluntary. Bank loan officers also assisted in introducing records at other sites because their presence established the credibility of the program.

A second program was initiated in Las Playitas (Figure 2), but was terminated after three months because most of the seven participants were neither interested in keeping records nor truthful about the data they reported. A neighboring town--Ajuterique--was selected to replace Las Playitas. Nine participants completed a full year of records in 1979, and the group expanded to 17 participants in 1980 because of a group loan from the Bank. The group loan is discussed later in this report.

One cooperative farm, El Matazano, was included in the records program in January, 1979, at the request of the Bank president who sought increased Bank attention to the land reform program. Cooperative farms were already required to keep a ledger of incomes and expenses for the Instituto Nacional Agrario (land reform authority), but neither traditional whole farm summaries nor enterprise summaries were completed. One of the two literate members of the farm (17 members in total) kept the record book.

During the six months prior to March, 1979 the record-keepers were trained by accompanying project personnel on farm visits who showed them how to make entries. As their expertise increased, accompanied visits by

FIGURE 3: PRINCIPAL TOWNS AND VALLEYS IN HONDURAS FOR SMALL FARM CREDIT PROJECT PROGRAMS.



project personnel decreased from weekly to monthly. In March a one-day training course was held to discuss problems and practical exercises with sample record book entries. Participants included record-keepers from Ajuterique, Jutiapa and El Matazano.

Results. Only five farmers in Jutiapa stayed with the program for a full year; three of the five dropouts never actually began and two did not want to cooperate. Information obtained from the remaining five farmers was incomplete and inaccurate due to lack of cooperation in some instances, and general unsuitability of the record-keeper. For lack of alternatives in this small community, the 15-year-old daughter of a participating farmer was hired to keep the records. Despite frequent farm visits with her by project personnel, plus detailed instruction and practice making book entries, she never became proficient at making entries. The basic problem was not one of intelligence or understanding, but of personality and immaturity. Her shyness and ignorance of agriculture were invitations for farmers to omit information or give inprecise information, and she did not question their responses. Evidence of how poorly things were going in Jutiapa came when preparation of enterprise and whole farm summaries revealed incomplete and inaccurate results, and when relatively better results were obtained in Ajuterique.

The Jutiapa experience yielded some important benefits. Project peronnel learned how to approach farmers about the record book, learned about farming in that area, tested initial drafts of the record book, and established a reputation in the Bank for getting out in the field. But the most important lesson learned was selection of the record-keeper; great care must be taken to select and train a person appropriate for the job.

The Ajuterique experience was more successful because the record-keeper was mature, consientious and intelligent, because the farmers were more receptive to improved management technology, and because a Bank loan (discussed later) to the groups provided an incentive to stay with the program.

Whole farm summaries prepared for the Ajuterique participants in 1979 include the Net Worth Statement (Table 1), Cash Flow (Table 2), and Income Statement (Table 3). The Net Worth and Income Statements for all nine participants are shown, but a cash flow is shown for only one representative participant. Discussion and interpretation of these results is beyond the scope of this report, but they appear in the comprehensive report [2].

Enterprise summaries were also prepared for the Ajuterique group; an example is shown in Table 4. During the calendar year, Participant 6 produced corn, onions and beans--a typical product mix on the irrigated land. A four-crop summary of returns to capital, family labor and management, and returns to capital and management appears in Table 5. Wide variation in returns reflects the high risks associated with vegetable production in this area. A major source of risk is market price; the farm-gate price of a 32-pound box of tomatoes varied from L0.98 to L14.00 during the year. (One Lempira = $.50 U.S.).

The results from cooperative farm El Matazano were also satisfactory in quality and completeness. The record-keeper was a full-time field worker, so he knew about all financial transactions and labor use. Labor was a particularly important record book entry because each member was paid a daily wage of L3.00 (US $1.50) from funds held in common.

TABLE 1: NET WORTH STATEMENTS FOR RECORD BOOK PARTICIPANTS IN AJUTERIQUE

DECEMBER 31, 1979

| | Participants | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Mean |
| ASSETS | | | | | (LEMPIRAS*) | | | | | |
| I. CURRENT | | | | | | | | | | |
| Personal | 2450.55 | 716.70 | 486.30 | 1501.70 | 85.11 | 1540.45 | 527.80 | 2204.20 | 86.00 | 1066.54 |
| Annual Crops | 502.00 | 443.98 | 297.00 | 738.00 | 2055.89 | 182.73 | 387.00 | 1352.00 | 218.75 | 686.37 |
| Market Livestock | | 239.50 | | | | | 35.00 | | | 30.50 |
| Perennial Crops | | 60.00 | | 195.00 | | 319.00 | 135.00 | 345.00 | 45.00 | 122.11 |
| TOTAL | 2952.55 | 1460.18 | 783.30 | 2434.70 | 2141.00 | 2042.18 | 1084.80 | 3901.20 | 349.75 | 1905.52 |
| II. INTERMEDIATE | | | | | | | | | | |
| Breeding Livestock and Draft Animals | | 2025.00 | | | | | 1320.00 | 675.00 | | 446.07 |
| Tools and Equipment | 174.00 | 125.50 | 90.50 | 139.50 | 526.10 | 73.50 | 196.00 | 67.00 | 91.00 | 164.79 |
| TOTAL | 174.00 | 2150.50 | 90.50 | 139.50 | 526.10 | 73.50 | 1516.00 | 742.00 | 91.00 | 611.46 |
| III FIXED | | | | | | | | | | |
| Land and Buildings | 8500.00 | 8500.00 | 2000.00 | 11900.00 | 6000.00 | 4000.00 | 7750.00 | 14000.00 | 4000.00 | 7405.55 |
| TOTAL ASSETS | 11626.55 | 12110.68 | 2873.80 | 14474.20 | 8667.10 | 6115.68 | 10350.80 | 18643.20 | 4440.75 | 9922.53 |
| LIABILITIES | | | | | | | | | | |
| Current | 1200.00 | | | | 1668.05 | 969.75 | | 1608.85 | | 605.18 |
| Intermediate | | | | | | | | | | |
| Long Term | | | | | | | | | | |
| TOTAL LIABILITIES | 1200.00 | | | | 1668.05 | 969.75 | | 1608.85 | | 605.18 |
| NET WORTH | 10426.55 | 12110.68 | 2873.80 | 14474.20 | 6999.05 | 5145.93 | 10350.80 | 17034.35 | 4440.75 | 9317.35 |

* L1.00 = $.50 US

## TABLE 2: CASH FLOW FOR PARTICIPANT 5, 1979
(LEMPIRAS)

| | Month: | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | RECEIPTS | | | | | | | | | | | | | |
| Crops: | Cucumbers | | 90.50 | | | | | | | | | | | 90.50 |
| | Onions | | | | | 750.00 | | | | | | | | 750.00 |
| | Corn | | | | | | | | 250.00 | | 204.00 | | | 454.00 |
| | Cattle | | | | | | | | | | | | | |
| | Hogs | | | | | | | | | | | | | |
| | Poultry | | | | | | | | | | | | | |
| | Horses | | | | | | | | | | | | | |
| | Other Livestock | | | | | | | | | | | | | |
| | Misc. Sales | | | | | | | | | | | | | |
| A | TOTAL OPERATING RECEIPTS | | 90.50 | | | 750.00 | | | 250.00 | | 204.00 | | | 1294.50 |
| | Other Receipts | | | | | | | | | | | | | |
| | Loans | | | | | | | | | 623.25 | | 535.60 | 509.20 | 1668.05 |
| B | TOTAL CASH INFLOWS | | 90.50 | | | 750.00 | | | 250.00 | 623.25 | 204.00 | 535.60 | 509.20 | 2962.55 |
| | EXPENSES | | | | | | | | | | | | | |
| Crops: | Cucumbers | | | 24.65 | | | | | | 42.50 | | 48.95 | 70.75 | 186.85 |
| | Onions | 69.25 | 121.30 | 4.00 | 24.60 | | | | | 183.00 | 98.50 | 7.30 | 11.00 | 519.35 |
| | Corn | | | | | 113.00 | | 16.00 | | | | | | 129.00 |
| | Tomatoes | | | | | | | | | 123.39 | 19.90 | 235.80 | 435.85 | 814.94 |
| | Peppers | | | | | | | | | 138.50 | | 21.00 | | 159.50 |
| | Cattle | | | | | | | | | | | | | |
| | Hogs | | | | | | | | | | | | | |
| | Poultry | | | | | | | | | | | | | |
| | Horses | | | | | | | | | | | | | |
| | Other Livestock | | | | | | | | | | | | | |
| | Repairs | | | | | | | | | | | | | |
| | Other Expenses | 30.00 | 128.00 | 96.00 | 45.00 | 12.00 | 33.00 | 45.00 | 15.00 | 129.00 | 65.00 | 39.00 | 170.00 | 807.00 |
| | Improvements | | | | | | | | | | | | | |
| C | TOTAL OPERATING EXPENSES | 99.25 | 249.70 | 124.65 | 69.60 | 125.00 | 33.00 | 61.00 | 15.00 | 616.39 | 183.40 | 352.05 | 687.60 | 2616.64 |
| | Loan Repayment | | | | | | | | | | | | | |
| | Household Expenses | 129.00 | 159.20 | 120.00 | 113.40 | 100.00 | 163.20 | 152.00 | 100.00 | 100.00 | 216.00 | 100.00 | 108.00 | 1580.80 |
| D | TOTAL CASH OUTFLOWS | 228.25 | 408.90 | 244.65 | 183.00 | 225.00 | 196.20 | 213.00 | 115.00 | 716.39 | 399.40 | 452.05 | 795.60 | 4197.44 |
| | SUMMARY | | | | | | | | | | | | | |
| E | Cash Difference (B - D) | (228.25) | (318.40) | (244.65) | (183.00) | 525.00 | (196.20) | (213.00) | 135.00 | (93.14) | (195.40) | 83.55 | (286.40) | (1214.89) |
| F | Beginning Cash Balance | 1300.00 | 1071.75 | 753.35 | 508.70 | 325.70 | 850.70 | 654.50 | 441.50 | 576.50 | 483.36 | 287.96 | 371.51 | |
| G | Ending Cash Balance (E+F) | 1071.75 | 753.35 | 508.70 | 325.70 | 850.70 | 654.50 | 441.50 | 576.50 | 483.36 | 287.96 | 371.51 | 85.11 | |

TABLE 3: INCOME STATEMENTS FOR RECORD BOOK PARTICIPANTS IN AJUTERIQUE - 1979

| | PARTICIPANTS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Mean |
| Total Cash Farm Income | 7,596.50 | 3,823.00 | 2,480.00 | 5,031.00 | 1,294.50 | 4,080.00 | 2,144.50 | 2,906.00 | 500.00 | 3,317.78 |
| Total Cash Farm Expenses | 4,009.55 | 1,904.70 | 2,559.50 | 1,444.50 | 2,616.64 | 1,900.95 | 2,349.70 | 3,063.85 | 1,801.20 | 2,294.51 |
| Net Cash Income from Farming | 3,586.95 | 1,918.30 | (79.50) | 3,586.50 | (1,322.14) | 2,179.05 | (205.20) | (157.85) | (301.20) | 1,022.77 |
| CHANGES IN INVENTORY | | | | | | | | | | |
| Crops and Market Livestock | (2,023.25) | (82.02) | 126.15 | (2,936.00) | 1,729.64 | (1,915.77) | 226.50 | 1,179.63 | 206.97 | (387.57) |
| Breeding Livestock and Draft Animals | | 250.00 | | | | | 140.00 | (925.00) | | ( 59.44) |
| Equipment and Machinery | (74.50) | (48.50) | (38.50) | (56.00) | 341.10 | (43.00) | (116.50) | (34.00) | 41.50) | ( 12.38) |
| Land and Improvements | | | | 500.00 | | | | | | 55.56 |
| TOTAL CHANGE IN INVENTORY | (2,097.75) | 119.48 | 87.65 | (2,492.00) | 2,070.74 | (1,958.77) | 250.00 | 220.63 | 165.47 | (403.84) |
| Value of Home Consumption of Crops Produced | 388.75 | 13.02 | 361.95 | 26.20 | 55.20 | 418.05 | 511.00 | 256.00 | 195.58 | 247.30 |
| NET FARM INCOME | 1,877.95 | 2,050.80 | 370.10 | 1,120.70 | 803.80 | 638.33 | 555.80 | 318.78 | 59.85 | 866.23 |

TABLE 4: ENTERPRISE ANALYSIS FOR PARTICIPANT # 6

| ENTERPRISE: | Corn (6.5 Manzanas) | | | Onions (.5 Manzanas) | | | Beans (.5 Manzanas) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Quantity | Value | Total Value | Quantity | Value | Total Value | Quantity | Value | Total Value |
| PRODUCTION | | | | | | | | | |
| Ending Inventory | 470 lbs. | L 94.00 | | | | | 169 lbs. | 88.73 | |
| Sales | * * | 465.00 | | * * | L 2025.00 | | 3000 lbs. | 1575.00 | |
| Family Consumption | 3650 lbs. | 511.00 | | | | | 365 lbs. | 109.50 | |
| A TOTAL | * * | | L 1070.00 | * * | | L 2025.00 | 3534 lbs. | | 1773.23 |
| Beginning Inventory | | | | * * | L 1822.50 | | | | |
| Purchases | 890 lbs. | 111.25 | | | | | 304 lbs. | 91.20 | |
| B TOTAL | * * | | 111.25 | * * | | L 1822.50 | 304 lbs. | | 91.20 |
| Total Production (A-B) | * * | | L 958.75 | * * | | L 202.50 | 3230 lbs. | | 1682.03 |
| Value/Unit | | * * | | | * * | | | .52 | |
| Yield/Manzana | * * | | | * * | | | 646 lbs. | | |
| COSTS AND RETURNS | | | | | | | | | |
| Seed | 113 lbs. | 16.95 | | | | | 360 lbs. | 172.00 | |
| Fertilizer | 3 cwt. | 70.50 | | | | | 9 cwt. | 216.00 | |
| Chemicals | | | | | | | | | |
| Machine Hire | | 152.50 | | | | | | 225.00 | |
| Animal Hire | | 70.00 | | | | | | 80.00 | |
| Miscellaneous | | 14.00 | | | 12.00 | | | 8.00 | |
| Total Direct Costs | | | L 323.95 | | | L 12.00 | | | L 701.00 |
| RETURNS TO CAPITAL, LABOR AND MANAGEMENT | | | L 634.80 | | | 180.50 | | | 981.03 |
| Hired Labor | 76 days | 234.00 | | 14 days | 54.00 | | 184 days | 578.00 | |
| RETURNS TO CAPITAL, FAMILY LABOR AND MANAGEMENT | | | L 400.80 | | | 126.50 | | | 403.03 |
| Values of Family Labor | 75 days | 262.50 | | 10 days | 35.00 | | 41 days | 143.50 | |
| RETURNS TO CAPITAL AND MANAGEMENT | | | L 138.30 | | | L 91.50 | | | L 259.53 |
| FIXED COSTS | | | | | | | | | |
| Interest- 12% | | 266.18 | | | 20.47 | | | 204.75 | |
| Depreciation | | 23.29 | | | 1.79 | | | 17.92 | |
| Total Fixed Costs | | | 289.47 | | | 22.26 | | | 222.67 |
| RETURNS TO MANAGEMENT | | | - 151.17 | | | 69.24 | | | 36.86 |
| RETURNS TO CAPITAL, FAMILY LABOR AND MANAGEMENT PER MANZANA | | | 61.66 | | | 253.00 | | | 80.61 |
| RETURNS TO CAPITAL AND MANAGEMENT PER MANZANA | | | 21.28 | | | 183.00 | | | 51.91 |

* * Undetermined

TABLE 5: RETURNS TO CAPITAL, FAMILY LABOR AND MANAGEMENT, AND RETURNS TO CAPITAL AND MANAGEMENT PER MANZANA FOR 4 SELECTED CROPS IN AJUTERIQUE - 1979

| | Observation | | | | | | | Mean | Range | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | High | Low |
| MATOES | | | | (LEMPIRAS) | | | | | | |
| turn to Capital, Family bor and Management/MZ | 314.65 | -- 19.00 | 141.60 | - 84.32 | - 206.40 | | | 29.30 | 314.65 | - 206.40 |
| turn to Capital and Management/MZ | 256.15 | - 271.00 | - 36.70 | - 291.52 | - 271.73 | | | - 122.96 | 256.15 | - 291.52 |
| ICNS | | | | | | | | | | |
| turn to Capital, Family bor and Management/MZ | 399.80 | 55.50 | 61.63 | 155.53 | 253.00 | 96.98 | 1746.00 | 395.49 | 1746.00 | 55.50 |
| turn to Capital and Management/MZ | 252.80 | - 67.00 | - 11.91 | - 52.13 | 183.00 | 45.88 | 1641.00 | 284.52 | 1641.00 | - 67.00 |
| CUMBERS | | | | | | | | | | |
| turn to Capital, Family bor and Management/MZ | - 58.00 | 95.50 | - 25.40 | - 227.00 | 225.90 | 18.10 | | 4.85 | 225.90 | - 222.00 |
| turn to Capital and Management/MZ | - 89.50 | 57.00 | - 67.40 | - 297.00 | 218.90 | - 35.80 | | - 35.63 | 218.90 | - 297.00 |
| RN | | | | | | | | | | |
| turn to Capital, Family bor and Management/MZ | 227.60 | 55.68 | 166.88 | 305.26 | 61.66 | 204.72 | 10.56 | 147.48 | 305.26 | 10.56 |
| turn to Capital and Management/MZ | 260.10 | 5.86 | 124.25 | 165.26 | 21.28 | 171.47 | - 2.67 | 106.50 | 260.10 | 2.67 |

The El Matazano experience was very favorable for several reasons. It was known beforehand that the group was one of the best of land reform farms--homogeneous, hard working and receptive to technical assistance. Second, the record-keeper was excellent. Third, the farm needed records to pay wages, keep track of obligations to a regional cooperative, and distribute profits among members. The potential for record-keeping on cooperative farms appears to be very good, and the Bank's potential role could be significant.

Recommendations. The Honduran experiment in farm records was a valuable learning experience for Honduran Bank employees and farmers, and for university faculty who participated in the program. The following comments are a composite of opinions expressed by project personnel about the experiment. Since organization and management of the records program has already been discussed, comments are limited to general recommendations.

1. The "cell" concept of a group of farms attended by a record-keeper who can walk the rounds is an excellent model to emulate.

2. The record-keeper should be selected before the farms, because he or she is the most critical ingredient of success.

3. The sites ideally should be close enough to project headquarters to permit round trip in one day.

4. Ideally, the number of participants in a cell should be kept between five and ten, although there were 17 in Ajuterique because of the loan.

5. Each cell should be visited by project personnel at least twice monthly.

6. The record-keeper must visit each farmer at least weekly, and even more often if warranted.

7. Crop enterprise summaries should be presented to the farmers as soon as the crop is harvested and sold.

8. Record-keepers should be given a course in record book entries early in the program.

9. Introduction of the records system to the participants should be done slowly and carefully with the assistance of someone who already has the confidence of the farmers.

10. Evaluation of the program at a particular site should begin after three months, and a decision should be made about whether to continue or terminate in order to avoid further losses in time and effort

11. It is helpful to have a reason beside records for keeping farmers' interest, such as the group loan.

The Future of Records Systems. Farm records have intrinsic educational value which benefits not only Bank employees and clients, but all those working with the agricultural sector. Direct use of the data shows greatest promise for the farmer and researcher, but the potential in the Bank is limited. The principal use of farm records envisioned for the Bank was construction of standardized tables of parameters to be used in the loan evaluation process. The plan was to establish 13 record-keeping cells of five to ten farmers in selected regions similar to the Ajuterique group. A hired record-keeper would be supervised by Bank loan officers, who would in turn be supervised by the SFC project team. The information generated would include the following general categories.

1. Standardized tables showing family grain consumption, cash expenditures on food, and other household cash expenses.

2. The source and use of funds at the farm level.

3. Verification of enterprise budget information obtained from questionnaires.

4. Resource inventory, use and cost data used in preparation of representative farm models for credit policy analysis.

5. Estimates of stored grain losses over time.

In theory the potential for use of farm records information is great, and conceptual limits are primarily a function of the imagination and desire of Bank personnel to carry out the program. Practical limitations are in fact severe, leaving little alternative but to reduce the scope of the program for the foreseeable future.

The greatest potential for farm records in Honduras lies with cooperative farms set up under the auspices of the national land reform agency--

Instituto Nacional Agraria (INA). A regulation already exists to the effect that these farms must keep a record of incomes and expenses, but in practice it has been of limited usefulness. The "record" is merely a ledger, the information from which is never summarized. Hired record-keepers from INA visit each farm monthly, if that often. For good reason, therefore, the cooperative farms need technical assistance in records. There would be direct benefit to the Bank from such a service role if implementation of record systems could help INA and the Bank keep tighter control over the use of loans advanced by the Bank. The land reform sector has shown a very high default rate on loans from the Bank, which is obligated to support the goverment's land reform program. It is impossible to predict the effect of farm record keeping or loan repayment, but the long term results certainly cannot be negative.

Maintenance of record book requires a great deal of discipline on the part of the farmer, forces him to think about his costs, and encourages him to think about enterprise alternatives once he has seen the results of his labor. One of the most intriguing results presented to the record book participants was net income before and after including an imputed wage to operate and family labor. They understood the concept immediately, thus opening the door to the concept of opportunity cost. It appeared that the group of farmers in Ajuterique learned from their experience with farm records, but close contact over time with project personnel was necessary to accomplish that objective.

Members of the El Matazano cooperative farm made use of their record book without any prompting from farm project personnel. They used their records for 1979 to determine how much labor they would need to produce certain crops in 1980. Records are particularly useful on cooperatives

because of the intricate labor obligations of the members. Each is supposed to work a minimum number of days, sharing the tasks in an equitable way. It is also important to have an estimate of net income because part of the proceeds is divided among the members at the end of the crop year. For these reasons the record book was very useful and successful on El Matazano.

Farm records are obviously no panacea. Some farmers said they did not care to know their economic gains or losses. Others simply found the task of keeping records too demanding, and didn't report all costs and income. Some of the best participants in Ajuterique expressed regr that they hadn't been more careful about reporting information once they receive their first summary of gains and losses on crops, and more conscientious reporting resulted.

In conclusion, Honduran farmers stand to benefit from farm records--particularly those associated with cooperative farms. Private farmers are harder to convince because there is no legal (tax) motive to maintain records, and because the small size and relative simplicity of most farms mitigate the usefulness. Along the same line, extension of the farm records to use in whole-farm planning is a logical and necessary step which was not achieved during the project life.

The practical limitations that preclude institutionalizing a comprehensive farm records system in the Bank are personnel, time, money and managerial ability. There is a chronic shortage of loan officers that precludes diverting their time to supervision of record books. Record book supervision can be a tedious, time consuming job which some loan officers would not perform willingly or conscientiously. A strong incentive would have to be devised for the job to be done properly, but incentives are insufficient for normal duties let alone additional ones.

Even if the loan officers were willing and motivated to supervise farm record cells, there remains the problem of managerial ability to make use of the data.

The essence of the problem is that even if a flawless conceptual design for obtaining and using farm records were available, the institution currently lacks the resources, managerial ability and desire to make it work. It would be unwise to press for implementation of a full scale program which has a high probability of failure after a large expenditure of money and effort.

The limited scope program recommended for the "Farm Data Analysis Unit" which was established to continue the work of the Small Farm Credit Project focuses on the educational value of farm records. The Unit will continue to directly manage at least one record-keeping cell of private farms and one cooperative farm. Experience and results obtained from this experiment will be used to conduct training programs for Bank and non-Bank personnel who have an interest and/or reason to use farm records. Specific opportunities for this training include:

1. Bank loan officers; at present, two loan officers are helping several farmers keep record books simply because they are interested. Eventually, each loan officer could help one farmer maintain a book.

2. Other institutions--particularly the Instituto Nacional Agraria--need training and technical assistance in record keeping. This need was described previously.

3. Representatives from cooperative farms visited the Bank to request assistance in keeping farm records. The potential for record books on cooperative farms appears to be much better than for small private farms.

The proposed farm records program will be an important role for the Bank because no other institution in Honduras currently has the personnel or experience necessary to implement the program. Direct use of farm record data in loan evaluation is an ultimate objective. However, as

discussed previously, the benefits to be derived in the near future are general improvement in the education of employees and a possible improvement of the loan repayment record of cooperative farms.

## Enterprise Budgets

Enterprise budgets for crop and livestock products provide the basic information required for economic analyses such as estimation of a farmer's loan repayment capacity, determination of cash flow, estimation of the need for borrowed capital over time, and determination of the most profitable investments in production capacity and alternative technologies. Although not emphasized in this report, enterprise budgets have major uses in more aggregate analyses such as for policy and development programs. A comprehensive description of the preparation and use of budgets in Honduras appears in a separate publication [4].

The New Crop Budgeting System. The objectives of the budgeting system designed for the National Agricultural Development Bank are to:

1. Provide information for loan evaluation, including estimation of credit needs for each enterprise and the whole farm, estimation of loan repayment capacity, determination of the timing of credit delivery and repayment, and identification of the managerial and technical levels of the client;

2. Provide information for training bank personnel in the loan evaluation topics mentioned in (1), and for analysis of investments in production inputs such as fertilizer, irrigation systems, and machinery; and,

3. Provide information which can be used to analyze credit policies, growth and survival of the farm firm, and the profitability of alternative production technologies.

Performance Criteria. The performance criteria established for the enterprise budgeting system are:

1. The methodology used to synthesize standard budgets must be simple enough for Bank personnel to understand and use;

2. The methodology must yield reasonable accurate, complete and reproducible results at low cost; and,

3. The budget processing mechanism must be rapid and flexible.

Budget Regions. Due to the great diversity in ecology, production technology and production costs in Honduras it was necessary to establish regional categories for crop budgets. The country was divided into 13 regions (excluding the eastern state of Gracias a Dios) according to ecological homogeneity and service areas of Bank branch offices. The areas are listed in Table 6, and the locations of the principal valleys in the various regions are shown in Figure 3. Even this level of regionalization is inadequate to cover the diversity of microclimates found in Honduras, but further partitioning would be more difficult and costly to manage. When significant differences in yields, practices or costs are found within a region, additional budgets can be synthesized to handle them.

Budgets are to be prepared for all crops financed by the Bank. One budget per crop per region is usually inadequate because production technology is highly diverse, ranging from the most rudimentary hillside agriculture to modern, mechanized production. Due to insufficient data, however, the effects of differences in input quality and quantity on crop yields among farms could not be established with precision. Furthermore, a specific set of inputs often results in very different crop yields because of uncontrolled locational variables such as soil and rainfall. For these reasons the budgets are not classified according to the level of production technology--i.e., from the input side. Instead, budgets are classified according to yield per unit of land--i.e., from the output side. The inputs are representative of those used by farmers to achieve the given yield level in each region. Low, medium, and high yield categories for selected crops are shown in Table 7.

TABLE 6: GEOGRAPHIC REGIONS FOR PREPARATION OF CROP BUDGETS IN HONDURAS

| Region No. | Branch Offices | Principal Valleys |
|---|---|---|
| 1 | San Pedro Sula | Sula, Quimistán, Naco, Cuyamel |
| | Puerto Cortés | Santa Cruz de Yojoa |
| | El Progreso | |
| 2 | Tela and La Ceiba | Lean, Papaloteca, Masica, Tela |
| 3 | Olanchito | Olanchito (Medio and Alto Aguán) |
| 4 | Tocoa | Bajo Aguán |
| 5 | Marcala and Camasca | La Esperanza, Masaguara |
| 6 | Comayagua and Minas de Oro | Comayagua, Jesús de Otoro, Taulabé |
| 7 | Tegucigalpa | Siria, Talanga, Guaimaca, San Juan de Flores, Zamorano |
| 8 | Danli and El Paraiso | Jamastrán, El Paraiso |
| 9 | Juticalpa and Catacamas | Guayape, Lepaguare, Juticalpa, Telica, Agalta Patuca, Salamá, Paulaya |
| 10 | Sta Rosa de Copán and Ocotepeque | Sonseti La Unión, La Entrada, Florida, Corquin, El Paraiso |
| 11 | Choluteca and Nacaome | Choluteca, Nacaome, Pespire, San Marcos de Colón |
| 12 | Santa Bárbara and San Luís | Santa Bárbara |
| 13 | Yoro | Locomapa |

TABLE 7: YIELD CATEGORIES FOR SELECTED CROPS IN HONDURAS [a]

(Quintals per manzana)

| Crop | Low | Medium | High |
|---|---|---|---|
| Corn | <30 | 30-60 | >60 |
| Sorghum | | | |
| Native | <15 | 15-30 | >30 |
| Improved | <30 | 30-60 | >60 |
| Beans | <12 | 12-25 | >25 |
| Rice | | | |
| Irrigated | <50 | 50-80 | >80 |
| Dryland | <30 | 30-60 | >60 |

[a]Clearly, the budget user must select an appropriate yield within the category if he wants to estimate receipts. For example, 30, 45, and 60 might be used for corn as representative yields for low, medium and high, respectively.

Yield categories were subjectively determined in a meeting with Bank loan officers (agronomists) from all 13 regions. The categories represent a compromise among the participants as to what comprised "average, low, and high" yields for the crops during the previous three years. Since the categories pertain to the entire country, all three yield levels are not necessarily found in a particular region. For example, high yield corn is not found in Santa Rosa de Copan, and low yield rice is not found in the Choluteca region.

Synthesis of Budget Coefficients. Information on the physical quantities of inputs required to produce a certain amount of product on one manzana of land (0.7 hectares) is obtained from interviews with farmers. A Bank loan officer selected five farmers in the region who recently obtained similar yields within a yield category. Each farmer was questioned about all of the practices, hired services and materials he used. The final input-output coefficient is the arithmetic mean of five reported numbers, rounded off to the nearest tenth. The sample size of five farmers is arbitrary, but the five farmers are selected carefully from among Bank clients. Those selected must be known to be "average with respect to the predetermined yield categories and associated production practices," and must be reliable sources of information. When a farmer reports a number which is unbelievable or which represents a situation unique to his farm, the loan officer omits that particular farmer from the sample and interviews another.

Each farmer interviewed also reported input prices for labor, contracted services and materials. These reported prices were verified using a separate program for collection of input prices. Since input prices were generally uniform within a region, it usually was not necessary to compute the average of prices reported by the five farmers.

Fixed costs and variable costs not otherwise covered under the categories "labor, contracted services and materials" are designated "other costs." These "other costs" include (1) interest on operating capital used for variable inputs, and (2) ownership costs of equipment.

Interest on operating capital is calculated assuming that the producer must have all the operating capital required for a given month on the first day of that month. Interest is accumulated until harvest, at which time the product is assumed to be sold.

Ownership costs include interest on investment capital, depreciation and maintenance costs. The equipment required to produce a particular crop was determined by the loan officer from experience and from farmer interviews. The loan officer determined from the interviews which practices required farmers to supply their own tools and equipment, and which practices involved hiring equipment. For example, a typical producer of corn and beans (medium-level yield) in the Jamastran Valley does not own bullocks or a tractor and, thus, contracts plowing. He owns a backpack insecticide sprayer for which he is charged depreciation, interest and maintenance. Sprayer ownership costs were estimated using the loan officer's knowledge and the information he obtained from the farmers. Assumptions were made with respect to the type and cost of equipment, length of useful life, scrap value and other parameters. Assumptions and estimates were made following accepted farm management techniques.

Crop Budget Format. The crop budget formal has seven principal sections--labor, contracted services, materials, other costs, total cost, detailed other costs, and profitability analysis. Table 8 is a Spanish language example of the computer printout, and Table 9 is an English version of another budget. The sections are described thoroughly

TABLE 8: EXAMPLE OF A NEW CROP ENTERPRISE BUDGET

BANCO NACIONAL DE DESARROLLO AGRICOLA
PLAN DE INVERSION NO. 08021

RUBRO- FRIJOL BAJO MAIZ REND BAJO 1200/MZ
REGION- CANLI EL PARAISO
PREPARADO POR- JOSE ROBERTO SIERRA

NO. MANZANAS

| MANO DE OBRA -JORNALES A* | TOTAL UNID. | L/ UNID. | COSTO TOTAL | COSTO PROYECTO |
|---|---|---|---|---|
| AGT CHAPIA | 1.5 | 3.50 | 5.25 | |
| ACARREO DE AGUA | 6.2 | 3.50 | 21.70 | |
| AGT APLICACION DE HERBICIDAS | 2.0 | 3.50 | 7.00 | |
| SEPT DOBLE Y DESHOJE DEL MAIZ | 3.5 | 3.50 | 12.25 | |
| SEPT SIEMBRA A BORDON | 6.7 | 3.50 | 23.45 | |
| OCT APLICACION INSECTICIDAS | 7.2 | 3.50 | 25.20 | |
| OCT 1A LIMPIA CON AZADON | 8.2 | 3.50 | 28.70 | |
| NOV 2A LIMPIA CON AZADON | 7.1 | 3.50 | 24.85 | |
| NOV APLICACION INSECTICIDA | 1.8 | 3.50 | 6.30 | |
| DIC ARRANCA | 7.2 | 3.50 | 25.20 | |
| DIC APORREO | 5.0 | 6.00 | 30.00 | |
| DIC ACARREO | 0.4 | 3.50 | 1.40 | |
| OTROS SERVICIOS CONTRATADOS | | | | |
| AGT ACARREO DE AGUA BUEYES | 0.2 | 12.00 | 3.00 | |
| DIC ACARREO BUEYES | 0.5 | 12.00 | 6.00 | |
| MATERIALES | | | | |
| AGT HERBICIDA | 2.0 LT | 14.50 | 29.00 | |
| AGT HERBICIDA | 2.0 LT | 5.65 | 11.30 | |
| SEPT SEMILLA CRIOLLA SELECCION | 60.0 LB | 0.40 | 24.00 | |
| OCT INSECTICIDA | 25.0 LB | 0.80 | 20.00 | |
| NOV INSECTICIDA | 12.0 OZ | 2.13 | 25.50 | |
| SUB-TOTAL | | | 330.10 | |
| OTROS COSTOS | | | | |
| INTERESES SOBRE CAPITAL ANUAL DE INVERSION. 12% | | | 10.61 | |
| DE PROPIEDADES- INTERESES 12% | | | 4.96 | |
| DEPRECIACION | | | 13.05 | |
| MANTENIMIENTO | | | 6.33 | |
| COSTO TOTAL DE PRODUCCION | | | 365.05 | |

A* JORNAL DE 6 HORAS

TABLE 8 (CONTINUED)

BANCO NACIONAL DE DESARROLLO AGRICOLA
PLAN DE INVERSION NO. 08021

RUBRO- FRIJOL BAJO MAIZ REND BAJO 1200/MZ
REGION- CANLI EL PARAISO
PREPARADO POR- JOSE ROBERTO SIERRA

COSTOS DE PROPIEDADES DETALLADOS

INFORMACION INICIAL

| EQUIPOS | NO. UNID | COSTO INICIAL | VALOR RESIDUAL | VIDA UTIL | MZ/ AÑO |
|---|---|---|---|---|---|
| MOCHILA | 1.0 | 210.00 | 10.00 | 2.0 AÑ | 60.0 |
| SACOS -5- | 1.0 | 9.00 | 0.00 | 2.0 AÑ | 1.0 |
| CERCA -4 MZ- | 1.0 | 250.30 | 0.00 | 8.0 AÑ | 4.0 |

COSTOS ANUALIZADOS

| | TOTALES | | | POR MANZANA | | |
|---|---|---|---|---|---|---|
| EQUIPOS | INTER | DEPREC | MANTEN | INTER | DEPREC | MANTEN |
| MOCHILA | 13.20 | 100.00 | 5.00 | 0.22 | 1.67 | 0.08 |
| SACOS -6- | 0.54 | 4.50 | 0.00 | 0.54 | 4.50 | 0.00 |
| CERCA -4 MZ- | 16.80 | 27.50 | 25.00 | 4.20 | 6.88 | 6.25 |
| TOTALES POR MANZANA | | | | 4.96 | 13.05 | 6.33 |

ANALISIS DE RENTABILIDAD DEL RUBRO

| | PRECIO POSIBLE ESPERADO | | | INGRESO CLIENTE |
|---|---|---|---|---|
| | BAJO | MEDIO | ALTO | |
| | 32.00 | 43.50 | 55.00 | |
| INGRESO BRUTO | 384.00 | 522.00 | 660.00 | |
| INGRESO NETO * | 53.90 | 191.90 | 329.90 | |
| INGRESO NETO ** | 19.56 | 157.56 | 295.56 | |

| | |
|---|---|
| PRECIO NECESARIO PARA CUBRIR COSTOS VARIABLES | 27.51 |
| PRECIO NECESARIO PARA CUBRIR COSTOS TOTALES | 30.37 |

* INGRESO BRUTO MENOS COSTOS VARIABLES
** INGRESO BRUTO MENOS COSTO TOTAL

TABLE 9: EXAMPLE OF A NEW ENTERPRISE BUDGET

BANCO NACIONAL DE DESARROLLO AGRICOLA
ENTERPRISE BUDGET NO. 11043

**Enterprise:** Rice, dryland, Medium yield 50 qq/mz
**Region:** Choluteca
**Prepared by:** Clemente Meraz Cruz, 9/22/79

| | | Total Units | L/ Unit | Costs Total |
|---|---|---|---|---|
| **Labor (man-days) a/** | | | | |
| Jun | clear brush | 11.6 | 3.00 | 34.80 |
| Jul | seed/fertilizer | 2.0 | 3.00 | 6.00 |
| Aug | weed | 11.6 | 3.00 | 34.80 |
| Aug | Apply fertilizer | 1.4 | 1.40 | 1.96 |
| Aug | Apply fungicide and herbicide | 2.2 | 2.20 | 4.84 |
| Oct | Protect crop from birds | 1.0 | 1.00 | 1.00 |
| Other contracted services | | | | |
| Jun | plow (1 time) | c | 30.00 | 30.00 |
| Jun | Disc (4 times) | c | 12.00 | 48.00 |
| Aug | Apply herbicide | c | 7.50 | 7.50 |
| Aug | Apply fungicide | c | 7.50 | 7.50 |
| Oct | Combine harvester | b | 3.75 | 187.50 |
| Materials | | | | |
| Jun | Seed | 2.0 qq | 42.00 | 84.00 |
| Jun | Fertilizer (formula) | 2.0 qq | 23.50 | 47.00 |
| Jun | Urea | 2.0 qq | 23.50 | 47.00 |
| Jun | Herbicide Stam LV-10 | 1.5 qq | 32.50 | 48.75 |
| Jun | Dipterex | 1.1 qq | 30.00 | 33.00 |
| Jun | Lannate | 1.0 qq | 30.00 | 30.00 |
| Jun | Benlate | 1.0 lb | 26.00 | 26.00 |
| Sub Total | | | | L. 679.65 |

[a] Man-day = 6 hours

TABLE 9 (continued)



ENTERPRISE BUDGET NO. 11043 (continued)

Other Costs

| | | |
|---|---|---|
| Interest on annual operating capital (12%) | | 23.35 |
| Ownership costs: | Interest on investment (12%) | 11.64 |
| | Depreciation | 38.07 |
| | Maintenance | 4.02 |
| Total production cost/manzana | | 758.77 |

Detailed Ownership Costs

Initial information

| Equipment | No. Units | Initial Cost | Scrap Value | Useful Life | Manzanas/ Year |
|---|---|---|---|---|---|
| Backpack sprayer | 1.0 | 225.0 | 15.00 | 2.0 years | 120.0 |
| Sacks (25) | 1.0 | 60.0 | 0.00 | 2.0 years | 1.0 |
| Fence (4 manzanas) | 1.0 | 480.0 | 48.00 | 15.0 years | 4.0 |

Annualized Costs

| | Totals | | | Per Manzana | | |
|---|---|---|---|---|---|---|
| Equipment | Inter | Deprec | Maint | Inter | Deprec | Maint |
| Backpack sprayer | 14.40 | 105.00 | 3.00 | 0.12 | 0.87 | 0.02 |
| Sacks (25) | 3.60 | 3.00 | 0.00 | 3.60 | 30.00 | 0.00 |
| Fence (4 manzanas) | 31.68 | 28.80 | 16.00 | 7.92 | 7.20 | 4.00 |
| Totals per manzana | | | | 11.64 | 38.07 | 4.02 |

Profitability Analysis

| | Possible price per unit | | | client's income |
|---|---|---|---|---|
| | low | medium | high | |
| | 17.00 | 20.00 | 22.00 | |
| Gross Revenue | 850.00 | 1000.00 | 1100.00 | |
| Net Income a | 170.35 | 320.35 | 420.00 | |
| Net Income b | 91.27 | 241.27 | 341.27 | |

| | |
|---|---|
| Price necessary to cover variable costs | 13.59 |
| Price necessary to cover total costs | 15.17 |

[a] Gross revenue minus variable costs
b Gross revenue minus total cost

in a separate publication [4]. The first five sections almost always fit on one side of a page when computer-printed, and the last two sections always appear on the back of the page (Tables 8 and 9).

The budget number is a five digit code. The first two digits identify the region, the second two identify the crop, and last identifies the yield category (low, medium, high). The code key is in Table 10.

The budget title indicates the crop, yield level, expected average yield for one manazana of land, region, name of the loan officer who prepared the budget and the date of completion of the budget.

Livestock Budgets. Livestock budgets are synthesized using the same basic organizational structure and personnel used to prepare crop budgets, although fewer regions are identified (Table 11). Livestock operations normally produce a variety of products (i.e. milk, calves, and cull cows) which must first be identified. Certain parameters must then be determined to identify the amount of production. These include the number of mature animals in the herd, birth, and death rates, the replacement rate of mature cows, the number of bulls and their useful life in the herd, average daily milk production per cow, and the average number of days a cow is milked during lactation.

Production costs consist of both variable and fixed costs. Variable costs include hired labor and the materials used up during one year, including materials use for maintenance of equipment and structures. Fixed costs include interest on investment capital and depreciation of equipment and structures utilized. Special care must be taken to estimate the percentage of time that a particular structure or piece of equipment is used in the livestock operation when its use is

TABLE 10: CROP BUDGET CODES FOR THE NEW BUDGETING SYSTEM

| | Grains |
|---|---|
| 01 | Corn |
| 02 | Beans |
| 03 | Sorghum |
| 04 | Rice |
| 05 | Soybeans |
| 06 | Sesame |
| 07 | Wheat |
| 08 | |
| 09 | Corn and Beans |
| 10 | Corn and Sorghum |

| | Vegetable Crops |
|---|---|
| 11 | Tomato |
| 12 | Potato |
| 13 | Onion |
| 14 | Cabbage |
| 15 | Yucca |
| 16 | Cucumber |
| 17 | Cantaloupe |
| 18 | Watermelon |
| 19 | Peppers |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |

| | Specialty Crops |
|---|---|
| 31 | Cotton |
| 32 | Coffee |
| 33 | Sugar Cane |
| 34 | Tobacco |
| 35 | Castor Bean |
| 36 | African Palm |
| 37 | |
| 38 | |
| 39 | |
| 40 | |

| | Fruit Crops |
|---|---|
| 41 | Orange |
| 42 | Grapefruit |
| 43 | Tangerine |
| 44 | Lemon |
| 45 | Lime |
| 46 | Mango |
| 47 | Avocado |
| 48 | Cashew |
| 49 | Papaya |
| 50 | Banana - Plantain |
| 51 | Pineapple |
| 52 | Cocoa |
| 53 | |
| 54 | |
| 55 | |

| Yield Code | |
|---|---|
| 1 | - Low Yield |
| 2 | - Intermediate Yield |
| 3 | - High Yield |
| 4 | - |
| 5 | - Irrigated |
| 6 | - |
| 7 | - |
| 8 | - |
| 9 | - Establishment |

TABLE 11: LIST OF LIVESTOCK BUDGET REGIONS AND BUDGET CATEGORY CODES

| GEOGRAPHIC REGIONS | | PRODUCTS | | OPERATION |
|---|---|---|---|---|
| Region | Branch Offices | Cattle | | Size |
| 01 | San Pedro Sula | 01 | Dairy | 1 Small |
| | Puerto Cortés | 02 | Beef | |
| | El Progreso | 03 | Dual Purpose | 2 Medium |
| | Tela | 04 | | 3 Large |
| | La Ceiba | 05 | Feeder | |
| | | 06 | | 4 |
| 02 | Olanchito | 07 | | 5 |
| | Tocoa | 08 | | |
| | Yoro | 09 | Purebred | |
| 03 | Comayagua | HOGS | | |
| | Minas de Oro | 11 | Breeding | |
| | Tegucigalpa | 12 | Feeders | |
| 04 | Juticalpa | 13 | | |
| | Catacamas | 14 | | |
| | Danlí | 15 | | |
| | El Paraíso | | | |
| | | POULTRY | | |
| 05 | Choluteca | 21 | Chickens-Eggs | |
| | Nacaome | 22 | Chickens-Broilers | |
| 06 | Santa Rosa de Copán | 23 | Chickens-Combinations | |
| | Santa Bárbara | 24 | | |
| | Ocotepeque | 25 | Turkeys | |
| | Gracias a Dios | 26 | | |
| | San Luis | 27 | | |
| | Marcala | 28 | | |
| | Camasca | 29 | | |
| | | OTHER | | |
| | | 31 | Bees-Honey | |
| | | 32 | | |
| | | 33 | | |
| | | 34 | | |
| | | 35 | | |

divided among various enterprises. An example would be a tractor used for both crop production and pasture maintenance.

Budgets are classified according to the size of the operation. This classification implicitly includes both differences in technology and economies of scale. A listing of livestock budget classifications is shown in Table 11.

Livestock budgets are identified with a five digit code similar to that used for crop budgets (Tables 12 and 13). The budget title includes the type and size of the operation, the region, the budget author and the date of preparation.

The livestock budget program was carried only through the methodological development and training stages. Completion of budgets on a nationwide basis and integration of livestock budgets into the loan evaluation system are the responsibility of the Bank.

The first portion of the budget contains estimated annual production by product type, and estimated annual income from the sale of these products. The same items are also presented on a per cow basis to facilitate estimation of costs and returns for various herd sizes.

Annual production costs are separated into labor, materials (including maintenance costs) and "other costs." Labor in terms of man-months is specified by type--milkers, common laborers, and managers. Materials include such items as salt and minerals, veterinary products (vaccines, medicines, and insecticides), supplemental feed, and maintenance materials.

"Other costs" include interest on annual operating capital, livestock investment capital, and capital invested in equipment and structures. Interest on annual operating capital for livestock was calculated by

**TABLE 12: DUAL PURPOSE CATTLE BUDGET**

**BANCO NACIONAL DE DESARROLLO AGRICOLA**
**LIVESTOCK BUDGET NO. 05032**

**Enterprise:** 100 Cow Dual Purpose
**Region:** Choluteca and Valley
**Prepared by:** Clemente Meraz Cruz

ANNUAL PRODUCTION

| Product | Units Sold | Detail | Price Lps. | Total Income | Income per cow |
|---|---|---|---|---|---|
| Milk | 83,160 | Bottle | .31 | 25,779.60 | 257.80 |
| Bull Calves | 33 | 380 lbs | .53 | 6,646.20 | 66.46 |
| Heifer Calves | 20 | 340 lbs | .53 | 3,604.00 | 36.04 |
| Cull Cows | 11 | 900 lbs | .74 | 7,326.00 | 73.26 |
| Herd Bull | .6 | 1280 lbs | .74 | 568.32 | 5.68 |
| | Estimated Total Income | | | 43,924.12 | 479.24 |

PRODUCTION COSTS

| Labor (man months) | Total Units | L/ Unit | Total Cost | Cost per cow |
|---|---|---|---|---|
| Milkers | 36 | 135.00 | 4,860.00 | 48.60 |
| Common Labor | 12 | 120.00 | 1,440.00 | 14.40 |
| Manager | 12 | 300.00 | 3,600.00 | 36.00 |

MATERIALS

| | | | | |
|---|---|---|---|---|
| Salt and Minerals | a | 4.50 | 450.00 | 4.50 |
| Veterinary Products and Medicine | a | 6.70 | 670.00 | 6.70 |
| Supplemental Feed (sugar cane) | 180 cwt. | 1.20 | 216.00 | 2.16 |
| Maintenance of Equipment and Improvements | - | - | 1,747.20 | 17.47 |

OTHER COSTS

| | | | |
|---|---|---|---|
| Interest: 14% Annual Operating Capital | | 778.98 | 7.79 |
| 14% Livestock Investment Capital | | 11,396.00 | 113.96 |
| 14% Investment in Equipment and Improvements | | 2,879.10 | 28.79 |
| Depreciation: Equipment and Improvements | | 1,836.00 | 18.36 |
| TOTAL PRODUCTION COSTS | | 29,873.08 | 298.73 |
| NET INCOME | | 14,051.04 | 140.51 |

TABLE 12: (CONTINUED)

BANCO NACIONAL DE DESARROLLO AGRICOLA
LIVESTOCK BUDGET NO. 05032

Enterprise: 100 Cow Dual Purpose
Region: Choluteca and Valley
Prepared by: Clemente Meraz Cruz

LIVESTOCK INVESTMENT

| Type of Animal | No. Units | Value/ Unit | Total Investment | Investment per cow |
|---|---|---|---|---|
| Cows | 100 | 700 | 70,000 | 700 |
| Replacement Heifers | 13 | 300 | 3,900 | 39 |
| Herd Bulls | 3 | 2,500 | 7,500 | 75 |
| TOTAL LIVESTOCK INVESTMENT | | | L 81,400 | L 314 |

EQUIPMENT AND IMPROVEMENTS FOR 100 COW UNIT

| Detail | No. Units | Initial Cost | Salvage Value | Useful Life | Interest | Depre-ciation | Maintenance |
|---|---|---|---|---|---|---|---|
| Materials and Tools b | - | 800 | | 10 years | 56.00 | 80 | - |
| Backpack Sprayer | 1 | 210 | 20 | 5 years | 16.10 | 38 | 5 |
| Water Tank | 1 | 500 | 50 | 15 years | 38.50 | 30 | 10 |
| Horses | 3 | 1,200 | 150 | 5 years | 94.50 | 210 | 108 |
| Improved Pasture | - | 20,000 | 5,000 | 20 years | 1,750.00 | 750 | 1,000 |
| Well | 1 | 2,000 | 500 | 20 years | 175.00 | 75 | - |
| Milk House | 1 | 1,200 | 240 | 20 years | 100.80 | 48 | 24 |
| Fences and Corrals c | - | 8,260 | 1,000 | 12 years | 648.20 | 605 | 600 |
| | | | TOTALS | | 2,879.10 | 1,836 | 1,747 |
| | ÷100 = | | TOTAL/COW | | 28.79 | 18.36 | 17.47 |

Annual Rates

| | | | |
|---|---|---|---|
| Weaning | 66% | Mortality | 2% |
| Replacement | 13% | Bull/Cow | 1/33 |

NOTES: Milk: 6 bottles/day for 210 days
Supplemental Feed: 3 lbs/day/cow - 60 days

a Cost per cow
b Includes all small tools
c 70 Hectares with ¼ pastures

TABLE 13: FEEDER CATTLE BUDGET

BANCO NACIONAL DE DESARROLLO AGRICOLA
LIVESTOCK BUDGET NO. 05053

Enterprise: 1000 Feeders - 6 months
Region: Choluteca and Valley
Prepared by: Clemente Meraz Cruz

PRODUCTION

| Product | Units Sold | Detail | Price Lps. | Total Income | Income per animal |
|---|---|---|---|---|---|
| Feeders | 980 | 666 lbs. | .64 | 417,715.20 | 417.72 |

PRODUCTION COSTS

| Labor (man-months) | Total Units | Lps/ Unit | Total Cost | Cost per animal |
|---|---|---|---|---|
| Common Laborers | 36 | 120.00 | 4,320.00 | 4.32 |
| Foreman | 6 | 150.00 | 900.00 | .90 |
| Manager | 6 | 500.00 | 3,000.00 | 3.00 |
| **MATERIALS** | | | | |
| Purchase of feeders - a | 1,000 | 247.50 | 247,500.00 | 247.50 |
| Salt and Minerals | - | - | 1,300.00 | 1.30 |
| Vaccine (2) | - | - | 1,000.00 | 1.00 |
| Insecticide | - | - | 720.00 | .72 |
| Vitamins | - | - | 490.00 | .49 |
| Urea | 358 cwt. | 29.75 | 10,650.00 | 10.65 |
| Molasses | 2220 barrels | 20.62 | 45,830.00 | 45.83 |
| Fuel and Lube | - | - | 2,280.00 | 2.28 |
| Maintenance of Equipment and Improvements | - | - | 3,115.00 | 3.12 |
| **OTHER COSTS** | | | | |
| Interest: Operating Capital - 14% | | 2.58 | 2,576.53 | 2.58 |
| Investment in feeders - 18% | | 22.27 | 22,274.00 | 22.27 |
| Investment in Equipment and Improvements | | 5.54 | 5,536.76 | 5.54 |
| Depreciation: Equipment and Improvements | | 4.36 | 4,364.45 | 4.36 |
| TOTAL PRODUCTION COSTS | | | 355,866.74 | 355.87 |
| NET INCOME | | | 61,848.46 | 61.85 |

TABLE 13: (CONTINUED)

BANCO NACIONAL DE DESARROLLO AGRICOLA
LIVESTOCK BUDGET NO. 05053

Enterprise: 1000 Feeders - 6 months
Region: Choluteca and Valley
Prepared by: Clemente Meraz Cruz

EQUIPMENT AND IMPROVEMENTS FOR 1000 FEEDER UNIT

| Detail | No. Units | Initial Cost | Salvage Value | Useful Life | Interest | Depreciation | Maintenance |
|---|---|---|---|---|---|---|---|
| Materials | - | 100 | - | 3 years | 7.00 | 33.33 | - |
| Tools | - | 500 | - | 10 years | 35.00 | 50.00 | - |
| Feed Bunks | 10 | 3,500 | 500 | 15 years | 280.00 | 200.00 | 50 |
| Tractor | .5 | 16,100 | 1,611 | 10 years | 1,280.73 | 1,448.90 | 650 |
| Pickup | .5 | 6,200 | 620 | 5 years | 4,477.40 | 1,116.00 | 400 |
| Improved Pasture | - | 20,000 | 20,000 | 20 years | 7,700.00 | 3,500.00 | 4,000 |
| Horses | 4 | 1,500 | 200 | 6 years | 119.00 | 216.66 | 120 |
| Corrals | - | 200 | - | 6 years | 14.00 | 20.00 | 10 |
| Fences b | - | 13,720 | 3,000 | 5 years | 1,170.40 | 2,144.00 | 1,000 |
| | | Annual Total | | | 11,073.53 | 8,728.89 | 6,230 |
| | | ÷ 2 = 6 Month Total | | | 5,536.76 | 4,364.45 | 3,115 |
| | | Total/Animal | | | 5.54 | 4.36 | 3.12 |

NOTES:

a 280 Hectares of land with 14,000 meters of fence.

b Each feeder weighs 450 lbs. at L..54/lb.

summing the costs of labor and materials, dividing by two to determine the average annual operating capital during the production period, and multiplying by the current rate of interest charged on livestock loans (14% in the examples).

The remainder of the budget shows the total livestock inventory, values, and total livestock investment. Interest on livestock investment capital is calculated by multiplying total livestock investment by the interest rate. An inventory of all equipment and structures used by the operation in the production process is also presented, with corresponding initial cost, salvage value, useful life, and annual interest, depreciation and maintenance costs. These costs are presented on the front page in summary form. Finally, the production parameters of the operation (annual rates) are presented for reference.

Results and Utilization. The first round of enterprise budget preparation yielded 163 grain budgets which were published in a book entitled Planes de Inversion para Granos Basicos: 1980 [5]. Plans call for publication of this book annually by the Banco Nacional de Desarrollo Agricola. Similar publications for non-grain crops and livestock are planned for the future. This first book of enterprise budgets for Honduras was received eagerly by the Bank, government and educational groups.

Ultimately, the Bank's loan evaluation procedure will use standard budgets directly and eliminate (individual) custom-made budgets for each client. This might not be advisable for large loans, but the majority of the Bank's loans are small amounts which are relatively expensive to administer. Although revised procedures were not completed when the project ended, the expected system is described below.

The Bank loan officer will interview the prospective client to determine which standard budgets pertain to his situation. If there is reason to believe that the client's expected costs and returns are significantly different from the standard budgets, then some detailed questioning and adjustment of standard budget figures will be necessary. If differences are minor the loan officer will simply use the standard budget numbers to calculate expected farm credit needs and loan repayment capacity. Bank policy concerning the relationship between loan amount and expected receipts would then have to be applied to decide whether the loan would be made or not.

In January of 1980 the Bank's Board of Directors officially approved the new grain budgets for Bank use. Subsequently, Credit Division managers decided how the budgets would be used to establish upper limits on loan authorizations per unit of land. The decision was that the loan could exceed total (variable) costs indicated on the standard budget by up to 10%, with written justification by the loan officer. Routine adjustments in production costs due to input price changes will be authorized as they occur, leaving the 10% difference to serve as a true contingency amount. Since all labor is included in the standard budgets at the prevailing wage, and since unpaid family labor is used on most farms, the loans are often substantially more than out-of-pocket cash expenses.

## Collection of Input and Product Prices

Development of input and product price collection programs was prompted primarily by the need for accurate estimates of enterprise costs and returns. Input and product prices are an integral part of enterprise budgets, but at the time the Small Farm Credit Project

was initiated, neither the Bank nor other government agencies had a program for collection of farm level prices. Lack of reliable farmgate product prices was a particularly difficult data deficiency for the Bank and for Honduras to solve because of the difficulties of designing a methodology and managing a price collection program. Rural product markets are highly imperfect over time and space, there are no product grading standards, and accessibility to farms is often poor. Input prices are more easily collected because vendors are concentrated in town with relatively good access to information.

Product Prices. The product price collection program is a systemmatic scheme for determining the average prices received by farmers for their products in selected regions of the country over time. The objective of the program is to construct time series of price data which can be used in the economic analysis of both production and marketing of crop and livestock products. Some specific kinds of economic analysis required by the Bank are (1) estimation of future product prices using past price levels and trends as a base; (2) estimation of crop and livestock enterprise profitability; (3) estimation of farm profitability and loan repayment capacity; (4) estimation of the economic returns to investment in production infrastructure and equipment; and (5) estimation of the economic returns to investment in marketing facilities (e.g., grain storage bins).

The "farm level product price" is the price per unit the producer recieves less transportation cost beyond his farm. The simplest case is that in which the producer receives a cash payment from the intermediary who picks up the product at the farm. If the producer himself

takes the product to a nearby town and sells it, the cost of transportation must be subtracted from the pirce he received to obtain the farm level price.

Sometimes there are different marketing practices in a particular region which must be taken into account. For example, vegetables in the Comayagua Valley are sometimes sold after harvesting and packing by the producer, and sometimes sold in the field for harvesting by the buyer. The most common marketing practice is therefore described for each product in each region. Each product is also identified in terms of its variety, condition and unit of sale. For example, "yellow corn, shelled and dry, in sacks of 100 lbs.," or "small pear tomatoes, sorted and packed in boxes weighing 44 lbs. each."

The country was divided into 14 regions identical to those for enterprise budgets. Crop and livestock products financed by the Bank are listed on a product price collection form for each region. A form from the Danli region (Jamastran Valley) is shown in Table 14. A number of price collection locations corresponding to production centers are listed for each crop. A limit of five locations per crop was initially set to keep the amount of work required to collect prices at a reasonable level. The only reason for specifying so many locations is to obtain price differences; if no significant difference in price is detected between adjacent locations over time, then one of the two locations could be eliminated from the program. Special market conditions could be the determining factor in specifying a particular price collection area. For example, the price of corn in Guarita, State of Lempira, is typically high because of its proximity to the El Salvador market.

BANCO NACIONAL DE DESARROLLO AGRICOLA

TABLE 14. PRODUCT PRICE COLLECTION FORM FOR THE JAMASTRAN VALLEY

Loan Officer: Jorge Rodriguez  Date: April/16-21/79
Region: Jamastran Valley

| Crop/Location | Unit | Prices | | | Total | |
|---|---|---|---|---|---|---|
| | | Producer | Buyer | Other | | |
| **Rice** | | | | | | |
| Jutiapa | QQ | 40.00 | 40.00 | $^{p}$40.00 | | |
| El Obraje | QQ | 39.00 | 38.50 | $^{p}$37.00 | | |
| Chichicaste | | --.-- | --.-- | --.-- | | |
| El Matasano | QQ | 38.00 | 39.00 | $^{c}$40.00 | | |
| Sartenejas | QQ | 39.00 | 40.00 | $^{c}$40.00 | | |
| Total | | | | | 470.50 | ÷12=39.20 |
| **Coffee "Uvas"** | | | | | | |
| Jutiapa | QQ | 150.00 | 149.00 | $^{c}$147.00 | | |
| El Obraje | QQ | 151.00 | 160.00 | $^{p}$153.00 | | |
| Chichicaste | QQ | 148.00 | 151.00 | $^{c}$150.00 | | |
| El Matasano | | --.-- | --.-- | --.-- | | |
| Sartenejas | QQ | 150.00 | 149.00 | $^{c}$149.00 | | |
| Total | | | | | 1807.00 | ÷12=150.58 |
| **Coffee "Pergamino"** | | | | | | |
| Jutiapa | QQ | 180.00 | 182.00 | 181.00 | | |
| El Obraje | | --.-- | --.-- | --.-- | | |
| Chichicaste | QQ | 178.00 | 180.00 | 179.00 | | |
| El Matasano | | --.-- | --.-- | --.-- | | |
| Sartenejas | QQ | 181.00 | 181.00 | 182.00 | | |
| Total | | | | | 1624.00 | ÷9=180.44 |
| **Coffee "Oro"** | | | | | | |
| Jutiapa | | --.-- | --.-- | --.-- | | |
| El Obraje | | --.-- | --.-- | --.-- | | |
| Chichicaste | | --.-- | --.-- | --.-- | | |
| El Matasano | | --.-- | --.-- | --.-- | | |
| Saretenejas | | --.-- | --.-- | --.-- | | |
| Total | | | | | | ÷15= |
| **Red Beans** | | | | | | |
| Jutiapa | QQ | 37.53 | 41.00 | $^{c}$40.00 | | |
| El Obraje | QQ | 39.00 | 39.00 | $^{p}$38.00 | | |
| Chichicaste | QQ | 40.00 | 43.00 | $^{p}$39.00 | | |
| El Matasano | QQ | 38.00 | 41.00 | $^{p}$38.00 | | |
| Sartenejas | QQ | 39.00 | 38.00 | $^{c}$40.00 | | |
| Total | | | | | 590.50 | ÷15=39.38 |

TABLE 14. (continued)

| Crop/Location | Unit | Prices | | | Total | |
|---|---|---|---|---|---|---|
| | | Producer | Buyer | Other | | |
| **Corn** | | | | | | |
| Jutiapa | QQ | 14.00 | 13.75 | $^{c}$14.00 | | |
| El Obraje | QQ | 13.00 | 14.00 | $^{p}$14.00 | | |
| Chichicaste | QQ | 14.50 | 15.00 | $^{c}$15.00 | | |
| El Matasano | QQ | 15.00 | 16.00 | $^{p}$15.00 | | |
| Sartenejas | QQ | 16.00 | 15.50 | $^{p}$16.00 | | |
| Total | | | | | 220.75 | ÷15=14.71 |
| **Small Pineapple** | | | | | | |
| Jutiapa | c/u | 0.30 | 0.30 | $^{p}$0.30 | | |
| El Obraje | c/u | 0.25 | 0.30 | $^{c}$0.35 | | |
| Chichicaste | c/u | 0.30 | 0.30 | $^{p}$0.30 | | |
| El Matasano | c/u | 0.35 | 0.35 | $^{c}$0.35 | | |
| Sartenejas | c/u | 0.29 | 0.80 | $^{c}$0.30 | | |
| Total | | | | | 4.50 | ÷15=0.30 |
| **Medium Pineapple** | | | | | | |
| Jutiapa | c/u | 0.45 | 0.40 | $^{p}$0.45 | | |
| El Obraje | c/u | 0.50 | 0.50 | $^{c}$0.50 | | |
| Chichicaste | c/u | 0.50 | 0.50 | $^{c}$0.47 | | |
| El Matasano | c/u | 0.40 | 0.50 | $^{p}$0.40 | | |
| Sartenejas | c/u | 0.45 | 0.47 | $^{p}$0.45 | | |
| Total | | | | | 6.90 | ÷14=0.46 |

c=buyer
p=producer
c/u=each one
QQ=hundred weight

Three persons at each location are questioned about the price of a particular product. One of these must be a buyer and one a seller, and the third may be either a buyer or seller. The Bank loan officer selects these persons according to his confidence in them and their availability at the time he wants the information. Product prices are collected monthly, twice a month or weekly depending on the price volatility of the particular product. Grain prices are collected monthly because they tend to be relatively stable from month to month. Vegetable prices are usually collected weekly because of relatively large price variations during short periods of time. Product prices collected on a monthly basis are obtained within three days before or after the 15th of each month. Prices collected twice a month are obtained within three days before or after the 1st and 15th of each month. Weekly prices are collected at the convenience of the loan officers, but an effort is made to collect the prices at least five days apart.

The average product price for a region is the arithmetic mean of all the prices collected; no attempt is made to weight the prices by volume sold because sales volumes are unknown. A sample calculation is shown on the price collection form for the Jamastran Valley. A list of product prices from each region is sent to the Bank each month. Loan officers in each region enter the prices on the appropriate forms in their regional field manual, the Manual Pericial [6].

Input Prices. An input price list was developed (not shown) on which loan officers enter prices three times a year. The input price program is tailored more to the Bank's needs than to the general public because of the source of the prices obtained. The Bank operates a

chain of input supply stores, and production loans sometimes carry the condition that borrowers obtain their inputs from the Bank outlet. Consistency within the institution requires that Bank input prices be used in the enterprise budgets to calculate expected costs. Items the Bank does not stock are priced at outlets in the same town as the Bank branch office. There is no specific methodology for obtaining an average price, so loan officers take the lowest price in town. There are usually few vendors in a town, so it is a simple task. The inconsistency of this method is that the Bank's input prices are usually the highest priced in town, so the resulting input price list reflects a mixture of highs and lows.[1]

Results and Evaluation. The product price collection program began on a trial basis in the Jamastran Valley in November, 1978, and in the Comayagua Valley in January, 1979. Once the methodologies for product specification, source of information, and timing and location of price collection had been developed, the quality of data were deemed acceptable. The program was expanded to more regions in September and October of 1979, but results were mixed. The principal problem encountered in trials and the expanded program was periodic failure to obtain prices, leaving gaps in the price series. Failures to obtain prices were due to lack of loan officers to take care of routine work and the low priority given to the price collection program by branch managers. It would have been advisable to include branch managers in project training programs because they lacked understanding of and commitment to the program.

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[1]The objective of the Bank's input sales program is not to make profit, but to provide competition in rural towns where price exploitation might otherwise occur. Bank prices therefore act as a ceiling price under which private vendors must set their prices to compete.

Nevertheless, prices were collected in approximately half the 13 regions until the Bank's reorganization in April, 1980. Many loan officers were fired, which aggravated the existing personnel shortage and terminated price collection in all but a few areas. The input price collection program met the same fate, although at least one price list had been obtained from each region by April.

The price collection program is envisioned as an important Bank activity. Full implementation of the program will require institutional stability and commitment of managerial and loan officer time. The methodology described herein is simple in concept and appropriate to the situation in the Bank and in Honduras.

## LOAN ADMINISTRATION PROGRAMS

Loan administration is a comprehensive term which refers to evaluation, supervision and processing of a loan. Except for the program in group loans, the "programs" described herein were byproducts of other programs; they are included in this section because they fall outside the scope of data collection and processing.

Loan Evaluation Procedures and Policies. A number of procedural and policy changes were recommended for consideration and testing during the course of the project. The principal ones are as follows:

1. Include fixed costs of production in estimates of production costs;
2. Adjust expected gross revenue for on-farm use of products, such as consumption, seed, and storage losses;
3. Abandon use of the IBRA price for calculation of expected gross revenues and develop more realistic price estimates based on historical prices in each region;
4. Include an estimate of family living expenses in the calculation of loan repayment capacity;
5. Replace custom-made production costs estimates with the new standard budgets;
6. Adopt a client classification scheme to make loan administration more efficient; and
7. Make it easier for clients to extend the loan repayment deadline for grains beyond March 31 so they can capture higher market prices.

Unfortunately, some of these policies were not implemented during the project life. The principal reason for delay was the presence of a consulting firm which was charged with completely reorganizing the Bank, including loan administration.

Client Classification Scheme. As previously described, practically all loans were processed the same way regardless of loan amount or credit history of the client. It is believed that a more efficient procedure could be achieved if paperwork and farm visits were reduced for good clients,

with Bank personnel time allocated more to potential problem clients. A prototype client classification scheme was designed based on existing client information stored in the Bank's computer. Because so little information is available, the scheme is based almost entirely on repayment history.

Client categories are shown in Table 15. Each of the four categories has three sub-categories indicating the Bank's exposure to loss. Group loans--particularly in the land reform sector--have been particularly risky.

The simplicity of this scheme makes it easy to understand and, since the information is on the computer, the classification could be done rapidly and frequently. Determination of which loan administration procedures can be simplified awaits implementation of a classification system.

The Loan Officer's Field Book. As data were generated by the SFC project, it became necessary to develop a notebook in which loan officers could carry the information. Other uses of the notebook were conceived to help loan officers keep their paperwork organized and improve their efficiency. A looseleaf binder titled the Manual Pericial was designed which includes the sections described (6).

1. Enterprise Budgets. All of the crop and livestock enterprises for the particular region are in the binder. Extra copies should be carried to give to clients.

2. Product and Input Prices. Current and past product prices occupy one section. There is a printed form for each crop on which the loan officer enters farmgate prices collected in his area using the prescribed methodology. The form includes the price series for the previous 36 months. Eventually these price series will be used to help predict future prices and client income. A list of current input prices is included in a separate section.

3. Client Information. A prototype computer printout was developed which loan officers can have at hand to remember details about a client and his loan (Table 16). The reason for development of this form was that

TABLE 15. PROTOTYPE CLIENT CLASSIFICATION SCHEME

| Classification | Description |
|---|---|
| 1 | At least four consecutive loans repayed on time |
| 1A | Loans greater than L 2,000 |
| 1B | Loans less than L 2,000 |
| 1C | All loans to groups--cooperative farms, etc. |
| 2 | Two or three consecutive loans repaid on time |
| 2A | Loans greater than L 2,000 |
| 2B | Loans less than L 2,000 |
| 2C | All loans to groups--cooperative farms, etc. |
| 3 | All new clients, plus clients who repaid defaulted loans and now have thier first loan since repayment. |
| 3A | Loans greater than L 2 000 |
| 3B | Loans less than L 2,000 |
| 3C | All loans to groups--cooperative farms, etc. |
| 4 | Clients in default on a loan and clients who are inelegible for other reasons. |
| 4A | Loans greater than L 2,000 |
| 4B | Loans less than L 2,000 |
| 4C | All loans to groups--cooperative farms, etc. |

TABLE 16: COMPUTER PRINTOUT FOR A TYPICAL CLIENT SHOWING LOAN SITUATION

| Enterprise | Budget No. | No. Manzanas | Estimated Production | Quantity For Sale | Expected Unit Price | Estimated Gross Income | Loan Amount Authorized | Amount Disbursed |
|---|---|---|---|---|---|---|---|---|
| Corn | 11012 | 10 | 330QQ | 300QQ | 13L/qq | L3900 | L3200 | L3200 |
| Sesame | 11063 | 10 | 140QQ | 140QQ | 50 | 7000 | 4040 | 4040 |

| Collateral | Value | Description |
|---|---|---|
| Fixed assets | 0 | |
| Movable assets | 10,900 | crop |
| Unsecured | 0 | |

loan officers have too many clients to remember, they change assignments frequently, and they spend time writing the same old information on loan applications annually for repeat clients. The printout gives the loan officer a current profile of the loan, and it can be used to make changes for the central files. A change in estimated production, for example, could be written on the form itself and sent in for updating. There is potential for this idea, but to date the information is not obtainable from loan forms. However, prototype forms were developed (in Spanish) and printed by the Bank's computer for future consideration.

4. Activity Log. A log of the loan officer's client visits and activities is included for managerial purposes.

The Manual Pericial was assembled in prototype form, but copies had not been distributed in any region when the project terminated. Introduction of the book in the Choluteca region was planned for late in 1980.

## Group Loans

Production loans to groups of farms is one alternative for reducing the high administration cost associated with small farms. The Bank had made loans to farmers' cooperatives in Honduras and to cooperative farms established under the land reform program, but there was need for a methodology to administer group loans directly so that small farm clientele could be served on a larger scale at reduced unit cost.

Agricultural Committees. Impetus for experiments in group loans was provided by the Bank president's request that SFC personnel examine the feasibility of the Bank's participation in the Western Region Development Project (PRODERO). The Bank was asked to extend production credit to a new category of groups called Agricultural Committees. An Agricultural Committee is an association of 10 to 30 independent farmers who live in one town, but more than one can be located in a town if there are enough members.

PRODERO was anxious for the Bank to start giving credit to the 54 Agricultural Committees already organized. Government funds were insuf-

ficient to meet demand created by technical assistance in the use of improved seeds, chemicals and fertilizers, international money was not yet available, and neither PRODERO nor the Ministry of Natural Resources (Agricultural Ministry) had the personnel or experience to administer the rapidly expanding credit program they had initiated. All parties involved know that the Bank would take a dim view of loaning money to these groups which had no legal status, were untested, and had virtually no collateral besides the crop. For these reasons PRODERO made no official request for Bank credit, and the Bank did not offer.

Following meetings and discussions with all parties involved, SFC project personnel proposed experimental loans to three Agricultural Committees for the second crop of 1979. This experiment would provide an opportunity to develop administrative procedures, establish a pattern of cooperation with PRODERO and agricultural extension agents, and satisfy all parties that something was being done. The Bank approved the experiment on the conditions that credit would be authorized only for seed, fertilizer and chemicals. and that only physical inputs would be delivered--not cash. These conditions were identical to those set by PRODERO in its incipient credit program.

Three Agricultural Committees were selected and the Bank office in Santa Rosa de Copan--the site of PRODERO headquarters--was authorized to administer the loans with guidance from the SFC project. The three villages--El Porvenir, Vivistorio, and Santa Rita (Figure 3)--are located in rugged mountains characteristic of the area. Less than 20 percent of the farmland is on a slope less than 20 percent. The farmers employ the most rudimentary production methods and live in severe poverty. Before PRODERO they used no fertilizer, insecticide or improved seed, but since

the advent of the technical assistance program yields have at least doubled. There is usually only one Agricultural Committee in a village, and membership is voluntary. The society is traditional and intimate; a half-dozen surnames typically dominate a village. Informal but culturally relationships influence every aspect of life, including agricultural production and distribution of the harvest. For example, labor is typically shared on a barter basis and products are traded among residents at a fraction of the outside market price. These facts are mentioned because they seem to have a strong and positive influence on the willingness and ability of the group to handle credit responsibly.

All three Agricultural Committees repaid their loans on time. The only problem occurred when the improved bean seed provided to El Porvenir only had a 10% germination rate. Fortunately, the loan was so small (L. 1,132.00) that repayment was possible.

Some important lessons were learned in the experiment. First, the loan control book designed by the SFC project was too complicated for this group. The bank loan officer and agricultural extension agent wisely terminated its use. The farmers had no trouble keeping their own list of inputs received by each person. A second lesson learned was that the transactions cost of getting a Bank loan was very high, both relative to the loan size and in absolute terms. The Bank required all of the members of each group to complete all the documentation required of a regular client, plus they had to visit the Santa Rosa de Copan office to sign the contract. The documents required were:

1. Birth certificate - available in home town (not necessary if the client already has an identity card);

2. Identity card--available in the state capital;

3. Federal tax requisition--available in the state capital;

4. Municipal property tax registration--available in home town; and,

5. Legal recognition of the group--available from the sponsoring agency.

Obtaining documents in the state capital is usually a tedious process which requires more than one visit. The tax registrations are particularly troublesome because many peasant farmers have never registered before, or have failed to pay taxes for some years. When they register they are required to pay assessments in arrears. Although the amounts are very low, they are indeed an obstacle for peasant farmers.

Transportation is a serious problem for farmers who live in the mountains. They typically must walk long distances to a bus route, then spend one or two nights in the state capital. The cost in time and money is formidable. To expedite the experiment the loan officer and the extension agent took people to Santa Rosa de Copan by jeep, helped them obtain their documents from government agencies, and took care of them every step of the way. This kind of attention will be impossible when all the Agricultural Committees receive credit.

Another problem is that of input quality. Although seed was the only problem in the experiment, some Agricultural Committees have purchased adulterated inputs from private vendors.

Transport of inputs from town to village is usually accomplished with a combination of motor vehicle and mule, and it is a particularly difficult task for some isolated communities. The loan officer and the extension agents hauled inputs to the three groups in the experiment, but this will not be possible for all of the Agricultural Committees seeking loans.

For 1980, the following policies were implemented in answers to previous problems and changed conditions.

1. Only two representatives from each Committee must have all the documents mentioned and must sign the loan contract. Reduction of the number of documents required for a loan is prohibited by Bank charter.

2. Each Committee must keep a record of how much each member receives, but the form of the record may be determined by the Committee. The loan officer and extension agent must see the record and understand it.

3. Fertilizer, seed and chemical supplies must be obtained from the Sales Department of the Bank to assure input quality. If the Board does not have the supplies the Committees may obtain them elsewhere with approval of the loan officer and extension agent.

4. Inputs can be delivered to five distribution points: Gracias, Ocotepeque, Santa Rosa de Copan, La Entrada and San Marcos. The local offices of Ministry of Natural Resources will hold the supplies until the Committees can arrange transportation to the villages. Extension agents assigned to Agricultural Committees are expected to help them if necessary.

5. The Bank will finance other inputs such as backpack sprayers, storage sheds, and equipment, but not the labor required to install or use them. Materials for perennial crops will also be financed (principally coffee seedings).

6. Neither the Bank nor the Ministry of Natural Resources will assist the groups in marketing their products, but the Ministry will continue to provide technical assistance in production.

The experiment in loans to Agricultural Committees was successful in that it broke the impasse between the Bank and PRODERO, satisfied international institutions that the Bank would manage the production credit component, and forced development of a methodology to manage this type of loan. The Bank will likely be forced to finance Agricultural Committees eventually, but SFC project personnel clearly provided impetus and organization that would otherwise have been missing. Expansion

of the program will probably result in new problems of coordination, however, completion of another year of experience should result in a model to be used in similar situations.

Ajuterique. The farm records program in Ajuterique led to formation of a group for the purpose of receiving a Bank loan. Eight of 13 records program participants were included in the first loan of L. 10,638 which was primarily for vegetable production. The loan was ultimately repaid (two weeks late), and in 1980 the group was expanded to 17 participants with a total loan of L. 59,818.

The first loan resulted in many problems which mandated changes in procedures for the second loan. The first loan was essentially a collection of individual loans because the procedures were no different than for individuals. Each participant was interviewed about his production practices and costs using the standard budgets already prepared by the SFC project. Each participant had to personally visit the Bank in Comayaqua to obtain his money and repay his portion of the loan, hence there was no saving in transactions cost. Some confusion was created because eight persons were included in one loan file. Since the Bank parcels out funds in three installments for each crop (land preparation, cultivation, harvest), there was a great deal of paper generated to handle the transactions. This was complicated by the problem described below.

The three loan disbursements are made according to a predetermined schedule corresponding to the budget. If the client's budget indicates harvest in August, for example, he cannot withdraw the portion of funds allotted for that activity before August. An extraordinarily heavy rainfall in Ajuterique destroyed onion and tomato seedbeds shortly before transplanting. Six of the eight participants had to replant.

Bank policy would not permit withdrawal of money intended for cultivation activities to reinvest in seed, labor and chemicals lost in the initial effort. Personal intervention by project personnel was necessary to obtain premature disbursement of funds intended for the cultivation stage, but the total amount authorized remained unchanged.

Several other problems emerged in this group loan. The Bank loan officer assigned to attend the group did not trust some of the participants and his negative attitude was noticeable. On several visits to the Bank to obtain funds or resolve a problem they were made to wait at least four hours before being attended, contributing to a feeling of frustration and animosity. These incidents resulted from poor communications, disorganization in the Bank and the participants' failure to adhere to the original credit disbursement schedule. At times the project personnel seemed to be playing the role of mediator between the group and the Bank branch office personnel, but as time passed the relationship improved. Project and Bank personnel were in agreement, however, that some of the group participants exaggerated their problems with the Bank, and that some of the "problems" hardly qualified as such.

The financial results of the first loan were not good. All six of those who produced onions suffered losses because of low market prices, resulting in net farm losses for at least three of them as of April 30. Two of the others might have suffered net farm losses also, but records are incomplete because they repaid their loans and dropped out of the program. One was angered because he did not want to reveal incomes and expenses for enterprises not financed by the loan, and the other would not say why he dropped out.

As the April 30 deadline approached it became obvious that a rescue effort was necessary. One participant could not obtain money to repay his loan, so six others loaned him a total of L. 625. By this time the second loan was being prepared for the expanded group, so both existing and prospective participants made sure the first loan was paid. They waited to pay until the day project personnel were scheduled to arrive to terminate the loan program.

The overall attitude of the group was very positive with respect to the concept of a group loan. It took time for them to understand how the Bank operates and what the groups responsibilities are, but except for the two dropouts they wanted to obtain a second loan for an expanded group. Mixed reactions were obtained from them and non-loan participants about keeping farm records, but once they saw the results they realized the value to themselves and the group of making the record book a requirement for participation in the loan. As one farmer put it, "we want to make sure that participants spend the money as they are supposed to." This concern was expressed strongly when it became evident that default was imminent and that lighter supervision would have to be maintained in another loan.

As the first loan drew to a close, project personnel came to the conclusion that credit alone is not a strong enough bond to hold this group together. The Agricultural Committees have the advantages of a society which borders on an extended family, but Ajuterique farmers are more independent and commercially oriented. An agricultural extension worker in the area expressed willingness to provide technical assistance to the group as a means of improving group identity and their production methods. This procedure might be followed for future group loans.

Participants in the second Ajuterique loan included four of the first loan participants, three previous record book participants and ten new members. Admission of new members to the group was left to the discretion of the group. Surprisingly, they denied admission to three prospective entrants on grounds that they did not own the land they farmed. The decision was significant because the three persons were respected friends of the others.

To avoid the high transaction costs associated with the first loan, a new system of disbursement was designed. One disbursement of funds was made to the group on the first weekday of each month. The group selected two to four persons to pick up the money and bring it to Ajuterique for disbursement. Each person knew in advance exactly how much he was to receive because it was all calculated in advance using the crop budgets. The first two disbursements went smoothly, and the Bank helped by putting the exact amount for each participant in a separate sealed envelope.

Among the general lessons learned in Ajuterique are the following:

1. The most difficult objective to achieve in group loans is reducing transactions costs to the farmer and the Bank;

2. Groups should ideally consist of ten to twenty participants;

3. Joint responsibility for repayment is essential;

4. The rules and conditions of the loan should be explicit at the outset, leaving nothing of importance for later resolution;

5. Additional reasons other than credit should exist for maintaining group solidarity; and,

6. Each group has its own personality and credit needs, so there should be some flexibility for adjusting policies to fit the situation.

Prospects for continued organization of group loans by the Bank are not good in the short run because of personnel shortages. Considerable time is required to organize and educate a group concerning how to estimate credit needs, control the funds, and resolve problems. Formation of new groups (as in Ajuterique) seems unlikely in the near future but prospects are somewhat better for providing credit to groups like the Agricultural Committees which were already organized.

## PERSONNEL TRAINING PROGRAMS

The training topics selected under the auspices of the Small Farm Credit Project were heavily oriented toward the general field of farm management. These topics, which build upon the enterprise budget data base generated by the project, include budget synthesis (variable and fixed costs), enterprise profitability, loan repayment capacity, cash flow planning, partial budgeting analysis and general investment analysis. Courses of this nature had not been previously given for Bank personnel. Topics and participants were chosen not only for general education purposes but also to help institutionalize new loan evaluation and supervision procedures designed for the Bank by project personnel. In the process it was also deemed desirable to prepare a core group of persons who could continue the training program once the project terminated, and to share this experience with others who have similar ambitions. In summary, the multiple objectives of the SFC training program were to:

1. Improve the general knowledge of Bank personnel so they can do their jobs better;
2. Institutionalize reforms in procedures and policies designed by the Small Farm Credit Project;
3. Prepare a core group of persons to continue the training programs;
4. Design training program courses and materials which can be adapted for use in other countries.

Although the training topics and methodologies reported herein were designed to meet some specific needs and conditions encountered in this particular institution, the experience yielded some useful lessons for others. The training topics are so universal that they would be useful in most agricultural credit institutions. This report includes a brief discussion of the particular situation encountered in the National Agricultural Development Bank, how training needs and participants were

determined, how the program was organized and conducted, and an evaluation of the experience. Particular experiences are expanded to generalizations when possible. A more complete discussion is in a separate report [7].

Previous Courses

An important consideration in designing a training program is examination of the successes and failures of past courses. Interviews with participants in previous courses given to Bank personnel revealed the following general criticisms.

1. Topics were not directly relevant or useful. This problem sometimes occurred simply because the wrong persons were selected to take the course. For example, a loan officer has little need to learn about managerial accounting, and does not typically have the background necessary to understand it. The primary problems, however, were that the courses were too abstract or unrelated to Bank operations.

2. The usual course format was all lecture and no practical exercises or class participation. There is a tendency in Latin American culture to let the professor expound on theoretical matters, and students are expected to absorb this wisdom and relate it themselves to the real world. Participants quickly get bored with such a format, realizing of course that there will be little practical usefulness of the material. This problem has been acute in Bank training courses because teachers are outsiders who are unfamiliar with Bank problems and training needs.

3. Courses were scheduled in blocks of one week, whether or not warranted by the subject matter. The topic was often exhausted before the time allotted, which was inefficient for both the Bank and the trainee.

Given the general criticisms of previous training programs, some general guidelines were established for the training program:

1. The course curriculum must stress participation and practical exercises;

2. The number of participants should not exceed 30 in one course to facilitate participation;

3. The subject matter must relate clearly to Bank needs and the jobs of the participants; and,

4. Courses should not exceed one week, but regardless of the duration there must be more than enough material on hand in case it is covered more rapidly than expected.

Course Scheduling and Participant Selection

Training courses must be scheduled when loan activity is slack so that field personnel can find time to attend. The best time in Honduras was October to mid-March, but even then there was difficulty getting participants due to vacations, special credit programs (e.g., loan recuperation) and other training programs. Scheduling and logistical tasks associated with each training session proved that once a participant was committed to the session it was efficient to keep him a week. Shorter courses of two days were quickly abandoned. Futhermore, invitations and confirmations were by necessity obtained two weeks in advance of the session. Courses were given at three convenient locations in the country--Tegucigalpa, San Pedro Sula, and La Ceiba--to minimize transportation and per diem costs of participants.

Project programs dealt primarily with farm level data and the loan evaluation process, which led to selection of field personnel as the primary group for training. The principal participants were loan officers and credit analysts from branch offices, plus agronomists from the central office.

The first session of each training course was composed of a key group of loan officers--one from each of thirteen geographic regions. These loan officers were usually the best available, hence it was a select group by Bank standards. Following the course they were charged with the responsibility of preparing or coordinating preparation of crop and livestock budgets in their respective regions.

Topics and Results

The topics selected for training programs focused on traditional farm management. The first course entitled "Economic Analysis of the Farm Firm" concentrated on the concepts of variable and fixed costs, synthesis of enterprise budgets, and use of budgets in farm financial analysis. Of the topics presented in the first course (Table 17), variable cost was the easiest concept to teach because the participants were familiar with the items the Bank finances. Interest was intense in subjects which people had taken for granted but never actually studied. For example, what is the "quantity of production," what product price should be used to calculate gross revenues, and of what economic value is "technology?" Exposure to costs such as depreciation, interest on invested capital and maintenance of equipment was an entirely new and difficult experience for all of the participants. Even the best of the participants still lacked confidence of their knowledge of this material at the end of the course.

Practical exercises in filling out prototype loan application forms were useful in inducing participants to think in economic terms--enterprise profitability and loan repayment capacity. They were also forced to consider total farm and household expenditures including enterprises not financed by the Bank.

TABLE 17. OUTLINE OF TRAINING COURSE ONE: ECONOMIC ANALYSIS OF THE FARM FIRM

1. Review and discussion of the Bank's traditional enterprise budgeting system.

2. Preview of new budgeting system as it pertains to loan evaluation

3. Variable costs of production
   A. Definitions and examples
   B. Definitions of "yield" and "production"
   C. Labor
   D. Contracted services
   E. Materials
   F. Estimation techniques
   G. Practical Exercises

4. Other costs of production
   A. Interest on operating capital
   B. Interest on invested capital
   C. Depreciation
   D. Maintenance

5. Financial analysis
   A. Enterprise profitability
   B. Loan repayment capacity
   C. Cash Flow

## Training The Teachers

The first session of each course was taught by project staff, both Americans and Hondurans. Some participants from the first session were selected to help teach subsequent sessions. Selection was based on (1) their understanding of the materials, (2) ability to speak and explain concepts to a group, and (3) willingness to participate in teaching. In eight sessions of two courses, a total of nine different persons helped the project team teach. Their response and that of the other participants was exceptionally favorable; it was gratifying to see the competence and enthusiasm that teachers and participants manifested. The advantages of this approach are that the teachers learn the topics thoroughly, and they relate very well to the questions and problems raised by their colleagues. The persons recruited for teaching also developed a kind of "esprit de corps" because they were honored to have been selected. This helped build dedication to the project and to the procedural reforms which were later to be introduced. However, project team members must always be present to rescue the teacher is case he commits an error or cannot answer a question. The use of persons not accustomed to teaching is somewhat inefficient in terms of time and clarity of presentation, but the benefits appeared to be greater than the costs.

The teaching aids employed consisted of blackboard, overhead projector and handouts. These proved to be entirely satisfactory and sufficient. Participants were called upon to respond to questions with great frequency, as well as to work on problems on the blackboard. Practical exercises were done by forming teams of two to four participants, each team with at least one portable calculator.

Evaluations of the First Course tended to be uniformly excellent. Criticisms were that the course was too short given the complexity of the material, and that supervisors (principally branch office managers) did not take the course. The first criticism was valid in that some persons simply could not master the subject matter, and repeated exposure and practical experience with the concepts is necessary to really learn. The second criticism was valid; the course was geared to training the lower ranks without bringing in managers. This created some misunderstandings among loan officers, branch managers and the SFC project. In retrospect branch managers and other middle level managers should have been included in training programs early on. In total, 112 persons took the course in five different sessions (Table 18).

All 83 of the participants in the Second Course were required to be graduates of Course One (Table 19). The material was more difficult than the First Course and it assumed basic knowledge of enterprise budgets for crops. Among the topics taught in this course (Table 20) the lecture and practical exercises in livestock budgets proved to be the most difficult to understand. Additional sources of difficulty were that participants had never seen a livestock budget before, and the concepts and mathematical manipulations were not as easy to learn as for crops.

A section on present value as applied to perennial crops had limited practical usefulness. Participants understood the concept well enough, and it is seemed worthwhile to teach the subject just for its educational value. Sections on partial budgeting, grain marketing and investment in a grain storage shed were generally good.

Criticisms of the second course were identical to those of the first--too much material in such a short time, and failure to include more super-

TABLE 18: PARTICIPANTS IN FIRST COURSE ON ECONOMIC ANALYSIS OF FARM FIRMS

| Place and Date | No. Participants | Teaching Assistants |
|---|---|---|
| Tegucigalpa, D.C. | 12 Loan Officers | |
| September 11-13, 1979 | 4 Agronomists | - 0 - |
| | 3 Loan Officer Supervisors | |
| | 1 Head of Field Operations | |
| Tegucigalpa, D.C. | 13 Loan Officers | Armando Ramirez |
| October 8-11, 1979 | 3 Agronomists | Odilio M. Guevara |
| | 4 Credit Analysts | Roberto Sierra |
| San Pedro Sula | 26 Loan Officers | J. Hector Munoz |
| October 16-19, 1979 | 4 Credit Analysts | Luis Serrano |
| | 2 Credit Supervisors | |
| San Pedro Sula | 12 Loan Officers | J. Hector Munoz |
| October 30 - November 2, 1979 | 2 Agronomists | Miguel Leiva |
| | 6 Credit Analysts | |
| Tegucigalpa, D.C. | 10 Loan Officers | Clemente Meraz |
| November 20-23, 1979 | 3 Agronomists | |
| | 2 Loan Officer Supervisors | |
| | 4 Loan Analysts | |
| | 1 Credit Supervisor | |
| | 112 Participants | |

| TOTALS | | |
|---|---|---|
| | 73 Loan Officers | 5 Loan Officer Supervisors |
| | 12 Agronomists | 3 Credit Supervisors |
| | 18 Credit Analysts | 1 Head of Departments |

TABLE 19: PARTICIPANTS IN SECOND COURSE ON ANALYSIS OF AGRICULTURAL INVESTMENTS

| Place and Date | Participants | Teaching Assistants |
|---|---|---|
| Tegucigalpa, D.C. | 13 Loan Officers | |
| January 29 - February 1, 1980 | 2 Agronomists | - 0 - |
| | 2 Credit Analysts | |
| | 2 Loan Officer Supervisors | |
| San Pedro Sula | 21 Loan Officers | Clemente Meraz Cruz |
| February 12-15, 1980 | 3 Agronomists | Roberto Sierra |
| | 4 Credit Analysts | |
| | 1 Loan Officer Supervisor | |
| Tegucigalpa, D.C. | 22 Loan Officers | Carlos Mayorga |
| March 4-7, 1980 | 4 Agronomists | Manuel R. Valdés |
| | 7 Credit Analysts | |
| | 2 Credit Supervisors | |
| TOTALS | 83 Participants | |
| | 56 Loan Officers | |
| | 9 Agronomists | |
| | 13 Credit Analysts | |
| | 3 Loan Officer Supervisors | |
| | 2 Credit Supervisors | |

TABLE 20. OUTLINE OF TRAINING COURSE TWO:

ANALYSIS OF INVESTMENT IN AGRICULTURE

1. Basic Economic Concepts

2. Partial Budgeting
   A. Principles of partial budgeting
   B. Simplified example of partial budgeting
   C. Practical exercises in partial budgeting
      (1) Increased use of fertilizer and herbicides on corn
      (2) Investment in an irrigation system for rice and sugar cane
   D. Checklist of budget changes caused by selected investments

3. Present Value
   A. Lecture on concepts
   B. Practical example/exercise: Investment analysis of a perennail crop

4. Practical Exercises in Grain Storage and Marketing
   A. Investment in a grain storage shed
   B. Marketing strategy for stored grain

5. Investment in Livestock Enterprises
   A. Lecture and example of cow/calf enterprise budget
   B. Practical exercise in estimating cattle budgets

visors. In our defense with respect to the first criticism, Bank employees were not accustomed to working so hard in training sessions. Extensive use of practical exercises both interested them and tired them; there was no way to doze off or be ignored.

## Overall Topic Evaluation

The evaluation of topics taught in these courses is presented in Table 21. Each topic is subjectively ranked from one to three in the categories of (1) comprehension on the part of participants, (2) practical usefulness in the Bank at the time, and (3) the interest manifested by the participants. The educational value of the topics was uniformly high, so no rating scheme is included for such a category.

In retrospect, elimination of the topics of cash flow and present value should be considered, but the topics of livestock analysis and partial budgeting expanded. This is not to say that some topics are not useful; the problem is one of priorities in the Bank. Once the Bank has completely institutionalized some of the more basic methodologies introduced by the project it will be appropriate to dwell on topics of a more sophisticated nature.

## Organizational Evaluation

If it could all be done over again, what should be done differently?

1. Include managerial level personnel from the outset;
2. Schedule courses and obtain confirmations on attendance further in advance, and do not schedule courses back-to-back;
3. Prepare more complete course syllabi; and,
4. Have the methodologies more thoroughly developed.

TABLE 21: EVALUATION OF TRAINING COURSE TOPICS

| Topic | Comprehension | Practical Usefulness | Interest of Participants |
|---|---|---|---|
| | Rank | | |
| Variable costs | 3 | 3 | 3 |
| Other (fixed) costs | 2 | 3 | 2 |
| Loan evaluation forms | 3 | 3 | 3 |
| Cash flow | 2 | 1 | 2 |
| Partial budgeting | 3 | 3 | 3 |
| Present value | 2 | 1 | 2 |
| Perennial crops | 3 | 2 | 2 |
| Grain storage bin | 2 | 3 | 3 |
| Grain marketing strategy | 3 | 2 | 3 |
| Livestock budgets | 1 | 3 | 3 |

Rank: 3 = very good
2 = good
1 = fair

Preparation of more complete syllabi for the courses would have been desirable because methodologies were being revised and teaching materials were being revised until the last moment little time was left for revision between sessions. Final development of loan evaluation forms was still not complete by the time the project ended, and other methodologies were still to be revised. It is not advisable to introduce a methodology at an intermediate state of development because the participants will have to be taught again when the methodology is finalized. Also, it erodes confidence in the competence of the project group. In retrospect, the introduction of loan evaluation forms should have been delayed because new forms were subsequently designed.

## Followup

During the training sessions numerous questions were raised by participants regarding area-specific problems which did not pertain to the rest of the group. Questions and problems which could not be immediately resolved were noted and subsequent contact with the participant was made to resolve the issues. For example, a participants wanted to know how to include cooperative farms, if at all, in the sampling process for budget synthesis because his area included virtually no private farms.

Participants were given a "certificate of completion" for each course (Figure 4). Diplomas and certificates are very important in many LDC's because education is important and difficult to obtain. The visual impact of the certificates created a great deal of good will for the project and for the cooperating universities.

# El Banco Nacional de Fomento
# y
# La Universidad Del Estado de Oklahoma

*Certifican que*

_____

*Ha participado en el Curso:* _____

*Cubriendo un total de* _____ *horas de instrucción teórica y práctica*

*Extendido en Tegucigalpa, D.C., a los* _____ *días del mes de* _____ *de 19*___

_____ _____

Presidente, Banco Nacional De Fomento

Representante, Universidad Del Estado de Oklahoma

Figure 4. Course Completion Certificate

## CONCLUSIONS

The principal objective of the Small Farm Credit Project in Honduras was to increase farm income and production. While many possibilities exist for increasing farm income and production in Honduras, the joint Oklahoma State University - Colorado State University project was defined very narrowly. The project was designed to work with a single banking institution (BNF) rather than with a host of other institutions or with technology groups working directly with farmers in the country. Operating within the confines and administrative structure of the bank, the project's sub-objectives were to improve the farm management information base, improve bank loan evaluation and administration procedures, and improve bank credit policies. The project was primarily methodological in nature. This methodological focus is emphasized in the sub-objectives of developing methodologies for collecting and processing farm management data and designing appropriate methods and procedures for farm financial analysis. A final sub-objective was to utilize the information collected and processed to design and conduct training programs for bank personnel.

Four programs were developed to assist in collecting and processing data to improve the farm management information base within the Bank. These programs, all of which were discussed earlier in the body of this report, include (1) an analysis of loan file information; (2) development of a methodology for collecting detailed information for entry into a record book at the farm level, the creation of Spanish and English language versions of the farm recordkeeping book, and development of a summary of the information and experiences obtained in the farm records program; (3) development of a methodology for constructing enterprise budgets for crops and livestock, and the creation of crop and livestock budgets for

alternative regions of the country; and, (4) the development of a system for collecting input and product prices throughout the country and using them in financial analysis at the farm level.

A number of program components was focused on the objective of improving bank loan evaluation and administration procedures and credit policies. Efforts to accomplish this objective within the Small Farm Credit Project were complicated by the presence of a consulting firm involved in a complete reorganization of the BNF. Nevertheless, a number of recommendations were made during the course of the project and some of these recommendation were implemented before the termination of the project. In addition, a client classification scheme was developed to simplify and speed the processing of loan applications and a loan officer's field guide was developed which contained budgets and input and output price information to simplify and facilitate processing loan applications. Also, a methodology was developed for processing and evaluating group loan applications. The client classification scheme, loan officer's field guide, and group loan evaluation procedures were designed to improve the bank loan officers' expertise in farm financial analysis.

To accomplish the final objective of conducting training programs for bank personnel, a number of training sessions dealing with farm financial analysis, investment analysis, and farm records were conducted for personnel of the bank and the bank's regional offices throughout the country. Despite the short two-year time frame for the project and the methodological focus of the objectives, much progress was made toward the accomplishment of the objectives of the Small Farm Credit Project in Honduras.

Considerable thought and attention was given to means whereby the programs developed under the Small Farm Credit Project might be institutionalized and continued after the termination of the project. The recent reorganization of the bank creates considerable institutional uncertainty and raises the possibility that certain key personnel may no longer be serving the banking institution. Continuation of the budgets, record-keeping procedures, and training programs depends upon having qualified people in the banking institution to carry on these activities. The reorganized bank formally accepted the proposed plan of work for a Farm Data Analysis Unit prior to termination of the project. A commitment to retain highly qualified individuals to carry on the work of the Farm Data Analysis Unit is essential to its success. This program will be only as strong as the institution and its commitment to maintain highly trained individuals in key positions. Had the Small Farm Credit Project been continued for an additional year, the likelihood of institutionalizing the programs and procedures developed would have been somewhat higher.

Even though the objectives of the project had a narrow focus, the two-year time frame for the project did not provide enough time to insure continuation of the programs in the banking institution. Nevertheless, the project objectives were in large part accomplished. Part of the success of the project resulted from the commitment made by the BNF to support the Small Farm Credit Project and to provide counterparts with adequate technical training to perform in an outstanding manner. In addition, major contribution was made by the support team at Oklahoma State University. Contributions ranged from moral support to valuable technical

advice on farm records, enterprise budgets, farm financial analysis, and training techniques. Without this support, the accomplishments of the project surely would have been less significant.

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