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SMALL FARMER CREDIT IN SOUTH AMERICA



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COUNTRY PROGRAM

SMALL FARMER SUPERVISED CREDIT
IN PERU

by:
Octavio Carranza
Ministry of Agriculture

Lima, Peru
December, 1972

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SUMMARY

The Supervised Agricultural Credit Program in Peru began in 1964 with a loan granted by the US Government to the Peruvian Government. Said credit program is oriented to give technical and financial assistance to those small and medium size farmers who cannot obtain credit from conventional sources.

An additional loan of 9 million dollars granted by the US Government to the Peruvian Government in 1966, plus the contribution of the Peruvian Government of 20'700,00' million dollars for the same program for the 1971-72 period, is an indication of the importance of this program in promoting the agricultural development of Peru.

This program does not only raise the level of technological development of the farmer with few resources at his disposal, but it also tends to convert him into someone able to receive credit. Moreover, the development of this program has had to face multiple problems both of an administrative character and of those related to the structural character of the Agrarian situation of the country. On one hand, the difficulties of capitalizing small agricultural properties has been observed, and on the other hand the lack of any evaluation of the program does not allow the technical assistance policy to be readjusted so that it will function more efficiently. In order to carry out an evaluation of the program, it is being recommended that a system be organized to permit the permanent analysis of the data which are collected from the farmer each time that he applies for financial assistance.

INTRODUCTION

The Supervised Agricultural Credit Program, begun in Peru in the year 1964. Is the only form of technical and financial support given to medium size and small farmers on the coast.

Two agencies from the public sector are engaged in this program, viz., the Ministry of Agriculture (MOA) and the Agricultural Development Bank (ADB). The MOA gives technical assistance to farmers, under the program and the ADB acts as Fideicomissary of the Credit Fund.

The administration of the Credit Program is carried out by the Council of the Trust Fund which is made up of delegates both from the MOA and the ADB.

At the present moment, the program has been carried out within the framework of what has been called the "Coast Plan". This name has been used due to the geographical area which the said program serves and which embraces the whole of the Peruvian Coast. There are seven agrarian zones involved in the "Coast Plan":

- Agrarian Zone I (Piura)
- Agrarian Zone II (Lambayeque)
- Agrarian Zone III (Trujillo)
- Agrarian Zone IV (Lima)
- Agrarian Zone V (Ica)
- Agrarian Zone VI (Arequipa)
- Agrarian Zone VII (Tacna)

The Trust Fund Council operates through regional and local credit committees for granting credit to small and medium size farmers.

The Regional Credit Committees have their headquarters in each agrarian zone. They create and designate the location of the Local Credit Committees in those places where agrarian agencies of the MOA operate. The Local Credit Committee reports to the Regional Committee which in turn reports to the Trust Fund Council. The Local Committee selects the farmer to whom the agricultural loan is to be given and coordinates all the technical assistance necessary for the farmer.

Supervised Agricultural Credit is available both to individual farmers and to organizations of farmers, such as Cooperatives, Social Interest Agricultural Societies and other organized groups. At the present moment, it is difficult to give figures on the total number of borrowers and of loans made to farmers, and even more difficult to give a percentage of the rural community which is being benefited by the program. No data has been processed on this point. On the other hand, the type of loan made in relation to the type of crops can be indicated.

More than half of the loans granted in the "Coast Plan" have been

made for the cultivation of corn. The second most important crop is rice, which has absorbed approximately 20% of the total loans granted. Other crops in order of importance are beans and pulses, fruits and vegetables.

One of the main problems which the borrower has had to face, is the level of profitability of his plot of land. In many cases, the smallness of his agricultural property does not allow him to recuperate the investment as he had expected to do. Also the smaller the size of his farm, the more difficult was it for the farmer to obtain a loan.

The inability of the farmer to comply with the payments established by the credit system has given rise to a situation in which 20% of all of the loans made in 1971 are in default.

The absence of an integral system which would allow a stable and permanent evaluation of the program makes it difficult to obtain a more detailed appreciation of the general and specific problems which affect both the borrowers and the program in the same manner.

II. Characteristics.

A. Background.

1. Historical Summary

The Supervised Agricultural Credit Program began with the granting of a 6.6 million dollars loan by the Government of the United States of North America to the Government of Peru on the 8th of July, 1964 (A.I.D. Loan 527-L-029).

The loan agreement defined the project in the following terms:

"As the development of a program of Supervised Agricultural Credit and related services for cooperatives communities and individual farmers, aimed at improving the productivity of farmers with low income and at supporting the general aims of Peru for increasing and diversifying agricultural production and for the reform of land tenure ("Agricultural Program"). The agricultural program will include a provision aimed at financing, through short, medium and long-terms loans both the cultivation of the land and the improvement of farms, plus technical assistance, guidance and control in order to assure that said farms, as a result, increase their production and productivity. The borrowers will give assistance to individual farmers, to communities and to cooperatives. The sub loans will only be granted to farmers who, at the moment of receiving the sub loans, are managing farms which are not bigger than 30 cultivated hectares, and who cannot obtain sufficient credit to finance their real necessities at reasonable terms and rates, taking into consideration the rates of interest and the other conditions established by credit institutions for similar loans, objectives and terms (small farms); sub loans will also be made to communities and cooperatives of small farmers ("eligible farms").

Later on, the Credit Program was consolidated with the USAID Loan N°527-L-047 granted to Peru in late 1966 for an amount of 9.0 million dollars. Presently, this program is being carried out in accordance with the regulations of this loan and the administrative machinery of the Peruvian Government acting through the bodies responsible for agricultural development. This review is being made on the basis of this frame of reference.

As for its funds, the program is being carried out with bilateral contributions basically coming from the Peruvian Government and the Agency for International Development (AID). Thus,

in 1961, the Development Loan Fund granted Peru a loan for 9.0 million dollars for agricultural development and colonization. Later on, part of these funds was transferred to the Trust Fund (in the ADB) of the Supervised Credit Program. In May 1964, the United States Government granted the Peruvian Government Loan 527-L-029 for an amount of 6.6 million dollars for the purchase of machinery and for granting more loans to small and medium size farmers. The portion devoted for more loans was channelled through the Trust Fund. Also in 1964, the Peruvian Government received from the Government of the United States Loan PL-480 (527-22-140-099) for an amount of 1.0 million dollars which was to be used for Supervised Agricultural Credit with the aim of increasing the output of agricultural products for internal consumption and to give support to the beneficiaries of the Agrarian Reform. In the same year, the Export-Import Bank granted Peru a Loan of 1.7 million dollars for the purchase of agricultural machinery. Finally in November 1966, AID granted Peru Loan N°527-L-047 for an amount of 9.0 million dollars, which, according to the Agreement, shall be used entirely for granting sub loans for small and medium size farmers.

With Loan 527-L-047 it was established that the Peruvian Government should make a complementary contribution of 5.0 million dollars to the Trust Fund (Fund).

Recently, the Peruvian Government contributed for the 1971-72 period, the amount of 1,800 million soles to the Trust Fund with the aim of strengthening the activities of the Agrarian Reform.

In 1964, the Trust Fund Council was established to administer the Supervised Agricultural Credit Program and at the same time agreements were made with the bodies responsible for the program. Thus, the Agricultural Development Bank of Peru signed an agreement with the Office of Agrarian Reform (ONRA) and the Forestry and Hunting Service; all these organizations were autonomous bodies of the Ministry of Agriculture. Later on, in 1969, the Agricultural Research and Development Service, the National Office of Agrarian Reform and the Forestry and Hunting Service disappeared as autonomous bodies and all the administrative responsibility for the project was transferred to the Ministry of Agriculture.

The present field of action of the program is that which has come to be called the Coast Plan (+), which is under the

(+) The name of the plan comes from the geographical area which is served by the program and which embraces the whole of the Peruvian Coast.

direction of the General Department for Agricultural Development of the Ministry of Agriculture. Basically the program embraces seven agrarian zones which are Agrarian Zone I (Piura), Agrarian Zone II (Lambayeque), Agrarian Zone III (Trujillo), Agrarian Zone IV (Lima), Agrarian Zone V (Ica), Agrarian Zone VI (Arequipa) and Agrarian Zone VII (Tacna).

The project also includes loans for Forestry Plantations with technical and development assistance being given by the General Forestry, Hunting and Land Utilization Departments. (See diagram of the organization of the Agrarian Sector).

At the present moment, no changes are foreseen in the Project's field of development.

2. Relationship with the National Credit System.

The Ministry of Agriculture (MOA) is the main body responsible for the agricultural development for the country. The total amounts assigned to Agricultural Credit from the national budget to the MOA for 1971 and 1972 have been as follows:

<u>Year</u>	<u>Total amount assigned (millions)</u>	<u>For Credit(millions)</u>
1971	72.4	14.2
1972	174.2	30.0

Moreover, there is the Agricultural Development Bank (ADB), the aim of which is also to provide financial guidance to Peruvian farmers with internal resources provided by the Public Treasury with external financing. The ADB also uses the rediscount facilities financed by the Central Reserve Bank of Peru.

The Supervised Agricultural Credit Program is administered by the Trust Fund Council which is made up of representatives both from the MOA and from the ADB.

3. The state of Agriculture and the Agricultural Potential of the country.

The Coastal Plan is being carried out along the whole length of the Peruvian Coast. This program is aimed at helping small and medium size farmers.

Agriculture on the Peruvian Coast is characterized by two forms of farming. That is to say that there are agrarian sectors which are highly capitalized and have a high technological level, and other sectors where farming is a rather precarious form of existence and is labor intensive. From the technical point of view, Peru possesses

a vast agricultural potential. On the Coast, it is calculated that there is water and land sufficient to increase the area under irrigation by six hundred thousand hectares (600,000), almost double the surface being irrigated at present. On the Coast, the technology available, supported by other production-marketing factors (granting of credit, incentive given by means of providing attractive prices for the purchase of inputs and products) seems to offer considerable possibilities for (a) the use of grain, forages, and cotton-by products, sugar cane and cereals for promoting the intensive development of poultry raising, pig breeding, cattle raising, cattle fattening and the dairy industry; and (b) the increase in the output of corn and sorghum on irrigated lands could be duplicated economically. In the case of rice, it seems that the levelling of land, timely sowing, the application of 320 kilograms of nitrogenous fertilizers per hectare (double that which is being usually applied), can increase yields by 50%; the utilization of varieties developed by the Rice Research Institute could increase these yields by 100%. Similar increase in the yields of canary beans can be expected by using improved varieties, fertilizers and double cropping systems. There is also enormous potential for increasing, in a very short period of time, cattle production, both in regard to the productive unit and to total output, providing that improved feeding is accompanied by elementary sanitary precautions. Improvements in the quality of the breeds offer possibilities for long-term expansion. In the cases mentioned above, the requirements as to seeds, fertilizers, cultivation practices, plants protection, nutrition and animal health are already known and tested (1).

In the Highlands except in the case of potatoes, technology is not so developed as with the crops produced on the Coast.

B. Objectives

1. General objectives.

a. Proposed objectives

Supervised Agricultural Credit is a type of credit which has

(1) Ministry of Agriculture and Agency for International Development "Evaluation of Peruvian Agriculture Relative to USAID Assistance-1971".

developed to meet the needs for credit of small and medium size farmers with low incomes, who are not qualified to receive credit and need to have non-conventional sources of credit at their disposal. When credit is provided on a sufficient scale and used efficiently, it becomes a powerful catalyst for increasing agricultural productivity. Nevertheless, in order for it to be used efficiently, it is essential that it be complemented by an effective technical assistance and training service; if not, it becomes a negative factor which will affect the well-being of the farmer and becomes a heavy burden for the state. It is necessary, therefore, that the borrower should learn how to improve the organization and administration of his farm, how to use equipment and methods for cultivating his crops or raising his livestock at the same time as he is given credit. Moreover, it is as harmful to give a loan to a farmer which exceeds his capacity for repayment and might put him into debt, as to give him insufficient credit which does not allow him to employ improved practices on to make a rational use of his resources.

The Supervised Agricultural Credit Program has the following objectives:

1. To provide assistance through credit to small and medium size farmers with low incomes, principally to the beneficiaries of the Agrarian Reform, who cannot obtain credit from conventional sources in conditions which are in accordance with their needs and at a reasonable rate of interest, be it through organized groups or as individuals;
2. To provide technical assistance, guidance and supervision, in order to insure that the output of the farms increase as a result of the credit which they have received; and
3. To guide the farmers in the correct use of the profits obtained as a result of the credit.

Other objectives of the program may be listed as follows:

- To improve the standard of living of low income farmers and increase the capitalization of their farms through increased outputs.
- To support government activities in the field of Agrarian Reform and increased agricultural output;
- To train those who use the credit so that, within a given period, they will be able to obtain loans from ordinary sources of credit; and
- To achieve the maximum possible recuperation of the loans in order to maintain the resources of the Trust Fund.

2. Terms of Loan.

a. Destination and Periods of Time.

The object of the loan is to provide the resources necessary to attend exclusively to the expenses and investments involved in the applicant's production plans and plans for improving their farms.

Loans granted will have the following aims:

2.A. Agricultural Loans (short and long term).

1. To finance the costs of inputs such as fertilizers, insecticides, fungicides, seeds, shoots, soil analysis, rental of agricultural machinery, and working capital for the payment of the manpower necessary for the efficient running of the farm (measures will always have to be taken to avoid the overpayment of labor provided by the farmer's family);
2. To finance installation and maintenance of fruit trees and other permanent crops.

2.B. Livestock Loans (short and long-term).

1. To buy cattle, cows, pigs, goats, poultry, etc.;
2. To purchase cattle feed, vaccines and medicines, artificial insemination, cattle raising equipment and labor;
3. To purchase cattle raising equipment and buildings, provided that their cost does not exceed 30% of the total amount of the loan.

2.C. Forestry Loans (short and long-term).

1. To finance the costs involved in establishing and managing forestry plantations and national forests; and
2. To finance the exploitation of timbers, rubbers, resins, fruits or any other product obtained from forestry resources.

2.D. Loans for Financing Machinery.(short- and long-term).

1. To purchase agricultural machinery and equipment necessary for farming activities;
2. To finance the installation of equipment for primary

processing plants, for the storage and improvement of farming products and to finance the purchase of vehicles (trucks and pick-up trucks); and

3.To purchase artifacts and materials for small, on-farm, industries which complement any farming inputs.

2.E. Loans for Financing Real Estate (long-term).

1.To finance the cost of developing lands, which will include irrigation system (land levelling, surfacing of channels, storage tanks, removal of stones, land improvement,etc.) and soil preservation;

2.To purchase economically efficient and tested wells;

3.To finance on-farm building and fencing; and

4.To finance the building of plants for the primary processing of products.

2.F. Business Loans (short-term).

1.To finance crops which are already stored in order to help the borrower in the future sale of his products. The items of Loans for Financing Machinery and Equipment and Loans for Financing Real Estate embrace also loans for processing, preserving and improving the quality and presentation of farm produce through the installation and equipping of plants for said operations.

Loans cannot be granted for the following:

1.Planting, cultivation, harvesting, storing or industrial processing of coffee, cacao, cotton and sugar cane;

2. Planting, cultivation, harvesting, storing and industrial processing of rice, wheat, vegetable oils and citrus fruits if these are grown for export;

3.Enlargement of coffee-growing areas;

4.The purchase and leasing of land;

5.The refinancing of debts to third parties;

6.For the payment of interest;

7.For drilling wells;

8.For the direct or indirect financing of the construction of

office premises or social centers of cooperatives, groups, social interest agricultural societies;

9. For the purchase of vehicles and tractors for individuals farmers;

10. For employees or businessmen.

Loans for cattle-raising will not be granted to tenants located in urban expansion areas or on rural or semi-rural plots, unless they are beneficiaries of the Agrarian Reform. The following types of loans can be charged against the Fund for the maximum periods indicated below:

b. Definition of loan terms per type.

- Short - term.

a) Agriculture Loans:

Up to two years (e.g. food crops in general, bananas, fruit trees nurseries and maintenance of permanent crops).

b) Livestock Loans:

from one to two years (e.g. cattle for the production of meat, etc.).

c) Forestry Loans:

From eight months to two years (e.g. tree nurseries, timber extraction, rubbers, etc.).

e) Loans for Financing Machinery and Equipment:

From one to two years (sprayers and hand tools, etc.).

f) Business Loans:

From one to six months.

- Long - term.

a) Agricultural Loans:

From three to twelve years (e.g. alfalfa, bananas, fruit tree nurseries, fruit trees in development and installation of fruit trees).

b) Livestock Loans:

From three to twelve years (e.g. dairy cattle and breeding of other species; for meat cattle in areas of the jungle which are just to be developed up to twenty years can be given).

c) Forestry Loans:

From three to twentyfive years (e.g. tree nurseries, management of Forestry Plantations and woods).

d) Loans for Financing Machinery and Equipment:

From three to twelve years (e.g. threshing machine, machines for cutting up pastures, tractors, trucks, portable sawmills, pumping equipment, plants for the primary processing of products).

e) Loans for Financing Real Estate:

From three to twenty years (e.g. farm buildings, soil improvement, irrigation systems, the purchase of tubular wells, the building of houses).

Although maximum periods have been established for loans, the repayment dates will be fixed in accordance with the economic study made of each loan and measures will be taken so that they can be repaid in the shortest time possible.

In regard to long-term loans, the payment of interest and the repayment of the loan can be postponed for five years, as from the data on which the loan was granted, when the respective economics studies justifies this measure. For forestry plantations the maximum period for these payment will be twenty years, beginning from the first felling of the timber.

C. Organization

1. General Structure.

The administration of the Trust Fund is the responsibility of the Fund Council. It operates through regional and local credit committees. (See the attached chart which shows part of a specific case).

The Fund Council is integrated by the following persons:

A. Three representatives of the Ministry of Agriculture (MOA):

- a) One from the General Department of Agricultural Development;
- b) One from the General Department of Agrarian Reform and Rural Settlement; and
- c) One from the General Forestry, Fishing and Land Utilization Department.

B. Two representatives of the Agricultural Development Bank (ADB):

The Administrator of the Fund acting as secretary to the Council, and the executive coordinator of the MOA may attend the meetings of the Council; they may participate in the discussions but have no right to vote.

The Council is headquartered in Lima. It is empowered to perform the following activities:

1. To administer the Fund and to establish the norms governing the loans in regards to legal documents, the amount of the loans, the period for their repayment, the interests to be charged,

guaranties and other conditions.

2. To comply with and inforce compliance with the agreements signed between the Peruvian Government and AID and between the MOA and the ADB on loans granted by and charged to the Fund;
3. To determine and solve the cases not provided for in the agreement which are necessary so that the loan policy established for the Fund may be complied with, provided that it does not contravene the terms of said agreements; if this should happen the cases will be previously submitted to the Board of Directors of the ADB and of AID for their approval;
4. To authorize the creation of the Regional Credit Committees;
5. To authorize the creation of Local Credit Committees in those cases in which were necessary and at the proposal of the Regional Credit Committees;
6. To solve the conflicts which might arise in the Regional and or Local Credit Committees;
7. To solve the problems or questions presented to it by the Regional and.or Local Credit Committees;
8. To decide upon applications for loans which exceed the amounts which the Regional and Local Credit Committees are authorized to give;
9. To authorize advance payments up to the amount which it considers convenient on the loans approved by the Council;
10. To approve the annual programming of Credit;
11. To establish the regulations governing the Trust Fund Council and those also governing the Regional and Local Committees;
12. To agree upon provisions and norms of a general character for the supervision, application and utilization of the resources of the Fund;
13. To evaluate the results of the Supervised Agricultural Credit granted to the agrarian zones; and

14. To recommend the application of sanction when the members of the Regional and/or Local Committees are guilty of misdemeanours.

The Council elects from among its official members a chairman by a majority of votes; he will hold the post for a period of one year and can be reelected.

The Ministry and the Bank will moreover nominate substitute members to replace the official ones in the case of the temporary absence of the latter. If a place on the Council becomes vacant, the substitute member continues to form part of the Council until the new official member is designated.

Ordinarily the Council meets once a month on the days and at the hours which it itself agrees upon.

The Council has extraordinary meetings when these are summoned by its chairman or at the request of two or more of its members. There is a quorum when three of its members are present. Decisions are approved by a majority vote. In the case of a tie, the chairman has the casting vote.

The sessions of the Council are recorded in the book of minutes, which are signed by those present at the session. The members of the Council are jointly responsible for the acts of the Council.

The Regional Credit Committees.

The Regional Credit Committees are headquartered in the main city of each Agrarian Zone. Each committee is integrated by the following members:

- A. To representatives of the MOA, viz. the Sub-Director of Agricultural Development who will act as chairman, and the Sub-Director of Agrarian Reform and Rural Settlement;
- B. The Sub-Manager in charge of loans for the ADB;
- C. The credit specialist for the zone who will act as secretary in the committee. He may participate in the discussions but will have no right to vote.

Any changes in the composition of the Committee must be approved by the Council.

The Forestry, Hunting and Land Utilization Sub-Department of Agrarian Zone may attend the sessions of the Regional Committee with the right to vote when applications and/or problems on forestry

loans are involved.

Agrarian zones dealing with credit to cooperatives will have a representative of ONDECCOP appointed to the committee. This delegate will have the right to take part in the discussions but no right to a vote.

The MOA and the ADB will moreover appoint substitute members to replace the official members in the case of a temporary absence of the latter. If the Committee should declare a vacancy, the substitute will continue to act on the Committee until a new official representative is appointed.

The Regional Credit Committees have the following duties:

1. To propose to the Council that Local Credit Committees be created and suggest where they should be established, these proposals should be accompanied by the reasons supporting them;
2. To comply with and enforce the compliance of the agreement signed between the Peruvian Government and AID, and between the MOA and the ADB, and also the agreements approved by the Council;
3. To appoint the members who will make up the Local Credit Committee, duly informing the Council about these appointments;
4. To coordinate the activities of the MOA and the ADB in order to achieve the optimum utilization of the loans granted within their jurisdiction, in accordance with what is stipulated in the agreements which have been signed;
5. To give their opinion on the estimates of the costs, yields and sales prices which will serve as a general basis for studying each loan, proposed by the Local Credit Committees;
6. To solve the conflicts which might arise in the Local Credit Committees within the shortest possible time. If these conflicts should not be solved they should be submitted to the Council for solution;
7. To study and decide upon the applications for Credit which are submitted to it by the Local Credit Committees in accordance with the respective regulations;
8. To carry out, in the loans which they have approved, changes, extensions, suspensions, and carry overs of debit balance for

up to five years, and also to attend to those sent by the Local Committees requesting balance carry overs for more than three agricultural years;

9. To submit to the Council, with their own evaluation, the applications which, in accordance with the provisions now in force, the Local Committees submit to them for their consideration;
10. To approve the granting to cooperatives, rural communities, social interest agricultural societies and other organized groups, of short-term and long-term loans for up to 3 million soles, including the debit balances of the loans made to these groups or organizations; applications which are outside these limits must be submitted to the Council for its approval;
11. To submit to the Council the conflicts which might arise;
12. To formulate provisions so that the economic resources and the inputs and services necessary for the execution of the loans can be made available to the borrowers on a timely basis;
13. To assign the resources which the Council makes available to the Regional Committees in accordance with the priorities and criteria which it considers appropriate;
14. To gather together the monthly information on credit from the Local Committees; this will be processed by the specialist on credit and submitted to the Credit Division of the General Department of Agricultural Development;
15. To prepare the reports requested by the Council;
16. To supervise and control the work of the Local Credit Committees under its jurisdiction and to answer the questions and problems which said Committees submit to it; and
17. To submit to the Committee the recommendations which it considers would improve the execution of the program.

The Regional Credit Committee has an ordinary session two times a month on the days and at the hours which it itself agrees upon and can hold an extraordinary session when it is summoned by the Chairman or by two or more of its members. There is a quorum when two of its members are present. Decisions are taken by majority vote. In the case of a tie the chairman has the casting vote. The sessions of the Committee are recorded in the book of minutes which are signed by those present.

The members of the Committee are jointly responsible for the acts of the Committee and only those members who register in the minutes their vote against the decision will be exempted from said responsibility in concrete acts.

The Regional Credit Committees are responsible for the control and recuperation of all the loans granted within its jurisdiction.

On its being established, the Regional Credit Committee, in the case of negligence, notorious carelessness in the control of credit, etc., will recommend sanctions which should be applied in accordance with the gravity of the misdemeanour.

Local Credit Committees

A Local Credit Committee is installed in those places where Agrarian Agencies of the MOA taking part in the Credit Program are operating; these committees are made up of the following members:

- a. Two representatives of the MOA, one from the General Department of Agricultural Development, will act as chairman and the other will act as secretary; and
- b. A representative of the ADB.

In these places where there are offices of the Forestry, Hunting and Land Utilization Department, a representative of these offices will attend sessions of the Local Committees and will have the right to speak and to vote, when application and/or problems about forestry loans are being dealt with.

The members of the Local Committees are appointed by the Regional Credit Committees.

The Local Credit Committees have the following powers:

1. To classify the list of applicants and to approve those farmers who are apt to receive loans;
2. To decide about the crops and/or breeding activities which can or ought to be financed in the area under its jurisdiction, in coordination with the planning offices of the Agrarian Zones;

3. To approve the estimates of the costs, yields and sales prices, submitted by the representative of the Ministry; these will serve as a general basis for the study of each loan and will be submitted for the consideration of the Regional Committee;
4. To study and to decide upon the applications for credit which are submitted for its consideration;
5. To approve, (at the request of the MOA and the ADB or the interested party) changes in the investment plan, increases in the amount of the loan, suspension of the loan, modifications in the repayments plan provided that there is no security provision and no recuperation pledge.
6. To approve loans with debit balance carry-overs of up to three years, provided that the economic study requires this;
7. To submit for the approval for the Regional Committee the applications for credit, which, in accordance with the economic study require that a debit balance carry-over for more than three agricultural years be made;
8. To submit to the Regional Committee the applications for loans, which due to conflicts have not been decided upon, or which, due to the provisions in forced, cannot be approved, together with the opinions which each representative wishes to express on the matter;
9. To submit to the Regional Committee or the Council for their final approval and through the regular channels the applications for loans which exceed the maximum amount which the Local Committees can authorize; said applications should be accompanied by the respective approval of the Committees;
10. To suggest to the Regional Committees the recommendations which it considers useful;
11. To make a monthly report to the Regional Committee on the implementation of the loans and provide other reports which the Regional Committee might request;
12. To transfer to the ADB, so that it can attend to them with its own resources, those farmers which have received credit from the Fund and have acquired the technical and administrative capacity to be classified as persons qualified to receive credit;

13. To see that the provisions contained in the agreements of the Peruvian Government (MOA and ADB), AID, and those established by the Council are complied with.

The Local Committee shall hold an ordinary session once a week at the days and at the hours which it itself agrees upon, and will hold an extraordinary session at the request of the chairman or of two of its members to study the portfolio provided by the ADB which is in default and to consider possible solutions for reducing the factors which cause balances in default and to improve the system of recuperation.

Moreover, during the same meeting, a study will be made of the conditions of the borrowers who have debit balance carry-overs for more than two agricultural years, in which the amount carried over shows no sign of decreasing in order to prevent the portfolio in default from increasing in the future.

The Local Credit Committees shall hold an extraordinary meeting in March every year in order to determine the loans which are considered uncollectible. Said information is strictly confidential and cannot be made public for any reason whatsoever.

The respective office of the ADB sends to the Administrative Board of the Fund the list of the uncollectible loans with an indication of their amount and the interest due.

There is a quorum when two of its members are present. Decisions are taken by unanimity.

The sessions of the Local Committees are recorded in a book of minutes and then signed by those present. In the case of the session not being held due to the lack of a quorum, this fact is recorded in the book of minutes.

The members of the Local Credit Committee have a joint responsibility for the acts of the Committee and are directly responsible for the timely processing of the application, the visits to control the implementation of the loans, the provision of technical assistance during the whole cycle of production which is being supported by the loan and for the recuperation of all the credit granted by the Trust Fund within its jurisdiction.

D. Beneficiaries.

1. Selection Criteria and Classification Procedures

The applications for credit submitted by cooperatives and rural communities, social interest agricultural societies and other legally

constituted rural groups are subject to the following provisions:

1.1 For Cooperatives, Rural Communities and Social Interest Agricultural Societies.

The application shall be accompanied by the following documents:

- a) A certified copy of its official recognition (required for the first loan).
- b) A certificate that it has been registered in the public records (required only for the first loan).
- c) A certified copy by the notary or, in the absence of one, by a Justice of the Peace of the minutes of the Assembly, which contain the following:
 - 1) The authorization for requesting the loan.
 - 2) The object and the amount of the loan.
 - 3) The nominal designation of its representatives for processing and contracting the loan.
 - 4) The authorization for the Ministry to supervise the loan.
 - 5) Joint responsibility until the loan has been paid.
- d) The legal documents or titles which accredit the ownership, possession or management of the lands by the cooperative, rural community or social interest agricultural Society.
- e) A copy of the company's sheet for the last year, or in the absence of this, the last balance sheet which was prepared (this is not necessary for rural communities) and a list of all the commitments and annual repayments of said companies; and
- f) A list of the members, with an indication of the area, amount by type of credit and total commitment of each beneficiary, when the credit has been granted to give sub-loans to the members.

1.2 Other Rural Groups.

The applications presented by other rural groups shall be accompanied by the same documentation required from cooperatives and social interest agricultural societies. If points a) and b) are not pertinent, these will be substituted by the incorporation authority or papers, legalized by a public notary.

In granting credit to production cooperatives, the responsibility will fall on the cooperative.

In granting credit to agrarian service cooperatives, two alternatives can be considered:

- a) Loans to Cooperatives for the purchase of common goods. (rice mills, tubular wells, pumping equipment, etc.). In this case, the responsibility for repaying the loan falls on the cooperative which, with its own financial resources will assume the repayment and not with the output of the plots of lands of the members.
- b) Loans to Cooperatives for Sub-Loans to their members. The loans application will include a list of the sub-borrowers, indicating the area, the amount by type of credit and the total commitment of each of the sub-borrowers. The member who receives the sub-loan from the cooperative will be responsible for repaying the commitments, capital and interest derived from said sub-loan.

Should failure to repay the sub-loan be due to the fact the member has made use or disposed of the pledge, the cooperative will cover the amount owed with its own resources.

Should failure to repay the sub-loan be due to justifiable reasons, the amount owed is considered together with other sub-loans in a similar condition, for the effects of postponing the payment. The borrower is responsible to the cooperative until the loan is fully paid.

The members of cooperatives who receive sub-loans are under the obligation to channel through their cooperative the amount devoted to inputs or other services which it provides. No member can receive, at the same time, a sub-loan from his cooperative and a loan as an individual person, whatever its purpose may be.

If a farmer is in debt and wishes to join and become a borrower of the cooperative, he shall proceed as follows:

1. For farmers who owe money to the ADB:
 - a) He shall pay the debt in order to receive a loan from the cooperative, or
 - b) He undertakes to pay the balance in default according to the plan approved by the Local Committees and the ADB.
 - c) Farmers who have loans which are not due shall obtain loans from the cooperative for crops which have not been financed,

without this meaning that they cease to owe money to the ADB or that the guarantee of their undebtedness is compromised. The cooperative guarantees to pay the debt and once this is done they will be able to be classified as users of the FUND.

2. For farmers who owe money to the FUND, the cooperative, if the committee is favorable to such a measure, assumes the undebtedness by means of the appropriate document of transfer, which the interested party and the cooperative sign before the ADB.

1.3 Individual borrower requirements.

1. To be at least 21 years old or legally qualified;
2. To be not more than 60 years old, or, if this is the case, to have a son old enough to work with the borrower. In special cases, the borrower can be older provided his state of health has been checked;
3. To have the ability and will to work necessary for farming the land and the agricultural experience which will allow the borrower to achieve a reasonable level of success;
4. To work the land directly;
5. To have a good reputation;
6. To accredit his tenure of the land through a document granting him the land, a certificate of feoffment, title deeds, a contract of lease or another document issued by the General Department for Agrarian Reform and Rural Settlement or other competent authority or, in the absence of these, a certificate or document of management issued by an official of the MOA which attests to the fact that the plots of land are being worked directly;
7. Not to be managing or running more than thirty (30) hectares with permanent irrigation, sixty (60) hectares with occasional irrigation, ninety (90) hectares of dryland farming and four hundred and fifty (450) hectares of natural pastures. The members of one single family (mother, father and sons) who live together as one family will be considered as one single borrower;
8. To have a rural property no smaller than that fixed for the family agricultural unit by Law 17716, excepting those farmers whose properties are smaller but who have the possibility of receiving more land (as direct beneficiaries of the Agrarian Reform) or who farm highly profitable land;

9. To be unable to obtain, from normal sources of credit, loans which are sufficient for the borrower to farm his land and which are granted at reasonable rates of interest and for reasonable periods of time;
10. To accept technical assistance, guidance and supervision from the MOA,
11. To have no loans outstanding from the ADB, unless these be for purposes which cannot be financed with loans from the FUND or which are within the limits of the following clause. In the case of forestry loans, the borrowers can receive, moreover, other types of ordinary loans from the ADB (agricultural loans, livestock loans, etc.);
12. No farmer can receive a new long-term loan after being 10 years in the program or a short-term loan five years after having received the first short-term loan. A farmer can retain his long-term loan granted by the FUND and, at the same time, request another short-term loan from fund belonging to the ADB.

Those farmers, who prove that they work the lands of farms whose ownership is subject to litigation, can receive short-term loans from the Fund. Moreover farmers, who have documents issued by the Department for Agrarian Reform and Rural Settlement, are eligible to receive loans, even though the ex-owner might have left the farm indebted to third parties.

Those borrowers in default with the ADB who have the necessary qualifications to be eligible to receive these loans, can receive them, provided that they undertake to repay their debt separately under the condition established by the ADB and the Local Credit Committees considering the registration of the outstanding pledge.

2. Number and Type.

- a) Number of borrowers. There is no information available on the number of individual borrowers. This is due to the fact that the necessary information, both from the Agricultural Research and Development Service and the ADB, was compiled on a per loan basis instead of on a per borrower basis. The borrower farmers usually have more than one loan.

Nevertheless, from the census^{1/} data it can be estimated that from 13,000 to 15,000 farmers have received loans through the "Coast Plan" (up to March, 1968).

^{1/} This census was carried out in 1967 by the Evaluation Team of the North Carolina Mission on the first two years of operation (1964-65 and 1965-66).

The first year of the program (1964-65) reached nearly 6,700 farmers and the second (1965-66) about 3,800 more. It is estimated that more farmers received loans in the 1966-67 period.^{2/} For 1971 there is no information on the number of borrowers. It is difficult to calculate this variable due to the fact (1) that the information is compiled on a per borrower basis and (2) that the Fund attends more to cooperative groups than to individual farmers (~~see Table VI~~).

b) Type of Loans. The most important crop in the "Coast Plan", both from the point of view of the number of loans and of the area under cultivation is corn. More than half of the total number of loans granted have been provided to finance this crop. The second most important crop is rice; this crop has absorbed approximately 20% of all the loans which have been made. Other crops, in order of importance are dried beans, fruit, various types of vegetables, lentils and tomatoes. The order for classifying the crops is the same when one uses the amounts lent as classification criteria.

The majority of the loans for cattle raising have been granted in the Arequipa area, principally for milk production and cattle fattening. In the last three years 20% of the short-term credit has been provided for cattle raising and 80% for agricultural production.

c) Characteristics of the borrowers. A sample (1967) of the borrowers of the Coast Plan was taken from five agencies. All the information and conclusions which are presented in this section are based on these interviews. The sample of the borrowers was not a probabilistic sample for all the borrowers of the Coast Plan; for this reason it cannot be considered as statistically representative of this population. The results can only be used in a general manner. The degree in which the rest of the areas are represented by the sample, depends on similarity of these areas with those which have been sampled.^{3/}

^{2/}. North Carolina Mission.- Evaluation Team; Evaluation Program on Supervised Credit. 1968.

^{3/}. North Carolina Mission.- Evaluation Team work quoted above pp.72,73 and 74.

TABLE I

Amounts and percentages of the area being cultivated which has been affected by loans under the Coast Plan, for agricultural years 1964-1965 and 1965-1966.

Item	Agricultural Year	
	1964-1965	1965-1966
Area being cultivated-information from the census.	20,266.20 Has.	15,152.00 Has.
Number of loans-information from census.	5,975.00	5,382
Average areas being cultivated per loan.	3.39	2.81 Hs.
Total number of loans executed in the Coast Plan.	7,508.00	8,368.00
Estimate of total area affected by Coast Plan.	25,452.00 Hs.	23,514.00 Hs.
Total area cultivated on the Coast.	647,345.00 Hs.	647,345.00 Hs.
Percentage of total cultivated area affected by the Coast Plan.	3.9%	3.6%
Total cultivated area on the Coast excluding cotton and sugar cane.	285,565.00 Hs.	285,565.00 Hs.
Percentage of cultivated area on the Coast excluding cotton and sugar cane affected by the Coast Plan.	8.9%	8.2%

The estimate of the total area affected by loans granted under the Coast Plan was obtained by multiplying the average area per loan, obtained from information from the census, by the number of short-term loans made by the Coast Plan program.

Agricultural Statistics-Peru, 1965. Ministry of Agriculture's Statistics Office, Ministry of Agriculture, Lima, Perú, 1966.

- d) Size of Farm. The average size of the farms in terms of the number of hectares worked, varies considerably from one agency to another. For the five agencies which were studied, the average size varies from between 2.6 to 7.4 hectares, as is shown in Table II.

Other estimates of a central tendency about the sizes of items related with the size of the farm are also probably exaggerated by the information given in the sample.

As was found in the distribution of loans according to their size, the size of the majority of the farms is smaller than the average. According to the information obtained by the census, 61.4% of the Coast Plan loans were for farms with less than 3.6 hectares of arable land. In zone I, more than 80% of the loans were for farms with 3.6 hectares or less. The most common size of farms, indicated by the biggest number in the column "Number of Loans", was from 0.6 to 1.5 hectares in Zone I, VI and VII. The agencies in Zone II, III and IV worked with farms which were slightly bigger. (See Table III).

Using once more the result of the sample, it was found that the agencies in Zarumilla and Cañete were significantly different from the other three agencies in terms of the average area worked per farm. The average size of the farms of each agency on the Peruvian Coast can only be understood in conjunction with the study of the availability of water. Both Huacho and Cañete have a relatively good supply of water while both Motupe and Zarumilla have limited water resources. Therefore a hectare worked in Motupe is not equivalent to an hectare in Huacho or Cañete. This can help to explain the high average and standard deviation of size of farms in Motupe.

3. Other sources of Credit.

The alternative source of credit to the Trust Fund of the Supervised Agricultural Credit Program is the ADB. Often, many borrowers in default with the ADB are rehabilitated by the Supervised Agricultural Credit Program. The reverse does not take place.

4. Profile of Farm. 4/

- a) Size of family.- In subsistence farming, the size of the family is important in the operation of the farm for two

4/. North Carolina Mission - Evaluation Team -

Work quoted above, pp. 73, 74, 75, 76, 77, 78, 79 and 80.

TABLE II

Average are worked by the borrowers under the Coast Plan who were interviewed, by Agencies, 1967.

<u>Agencies.</u>	<u>Average number of hectares worked</u>	<u>Standard Deviation</u>
Cañete	4.07	2.7
Huacho	5.47	3.7
Pacasmayo	5.54	4.94
Motupe	7.44	10.30
Zarumilla	2.61	1.5
Average of the sample	5.29	

Using the information provided by the census, the average size of farm of the borrowers under the Coast Plan was calculated at 4.3 hectares (cultivated area). The average for the sample of the five Agencies was calculated at 5.3 hectares, which means to say that the sample overestimated the average size per farm by one hectare.

TABLE III

Number and percentage of loans according to size of farm in each Agrarian Zone.

Size of Farm (Has.)	Zone I		Zone II		Zone III		Zone IV		Zone VI		Zone VII		TOTAL	
	Number of loans	Accrued Percentage	Number of Loans	Accrued %	Number of Loans	Accrued %	Number of Loans	Accrued %						
Less than 0.6	109	6.0	23	1.4	44	1.5	7	0.5	2189	10.7	44	13.3	445	4.3
0.6 & 1.5	658	42.3	254	16.9	550	19.8	97	6.7	672	43.6	97	42.7	2,328	26.7
1.6 & 2.5	457	67.5	294	34.9	488	36.1	231	21.6	428	64.5	64	62.4	1,962	45.7
2.6 & 3.5	230	80.2	271	51.4	349	54.4	304	41.2	244	76.4	34	72.4	1,632	61.4
3.6 & 4.5	139	87.9	147	60.4	285	63.9	113	48.5	109	81.8	17	77.6	810	69.2
4.6 & 5.5	91	92.9	139	68.9	145	68.8	141	57.6	82	85.8	21	83.9	619	75.2
5.6 & 6.5	28	94.5	144	77.7	245	77.0	134	66.3	50	88.2	10	86.9	611	81.1
6.6 & 7.5	28	96.0	50	80.7	95	80.1	75	71.1	64	91.4	6	88.7	318	84.2
7.6 & 8.5	14	96.8	41	83.3	70	82.5	63	75.2	34	93.0	2	89.4	224	86.3
8.6 & 9.5	4	97.0	33	85.3	102	85.9	93	81.2	21	94.0	5	90.9	258	88.8
9.6 & 12.5	30	98.6	141	93.9	190	92.2	147	90.7	34	96.7	21	97.3	583	94.4
12.6 & 15.5	17	99.6	70	98.2	168	97.8	92	96.6	34	98.4	5	98.8	386	98.2
More than 15.5	7	100.0	30	100.0	64	100.0	52	100.0	33	100.0	4	100.0	190	100.0
	1,812		1,637		2,995		1,549		2,043		330		10,366	

Obtained from the information of the partial census. This Table includes information for the agricultural years 1964-1965 and 1965-1966.

reasons. Firstly, the bigger the size of the family, the more manpower there is available. Secondly, the bigger the size of the family, the greater is the need for food and other services. In the five agencies which were studied, it was found that the average size of the family was 7.2 persons. This includes the father, the mother and the children. The average number of persons economically dependent on the head of the family was 6.7 persons. See Table IV for the distribution according to the agencies.

The Agency of Zarumilla registers an average family size of more than 8 persons, of which more than 7 are economically dependent on the head of the family; this average is higher than that of other agencies. Moreover the arable area per person is much less, being only 0.3 hectares per dependent. The other agencies have characteristics similar to the average with the exception of Motupe, where the average of arable area per member of the rural population was calculated at 0.66 hectares in 1965. Once more, the sample overestimated the measurements related to the size of farm.

b). Age of the borrowers.- The age range of the borrowers who were interviewed, as is shown in Table V, shows that more than one fifth of the farmers interviewed were 60 years or more. It can be observed also that less than 28% of the borrowers were less than 40 years old. Due care should be taken in granting loans to farmers advanced in years, if one wishes to insure the recuperation of the loan.

Although this also applies to borrowers of any age, borrowers of advanced age obviously represent a greater risk for the program.

Another point related to the age of the borrowers is that which refers to the supervision and technical assistance provided by the program.

The principal value of the program is in changing the production practices and techniques learned by the farmers so that they will be used and repeated in the future. The loan is only a mean to bring about and facilitate these changes. Unless a borrower of advanced years has a son or member of his family with whom he can learn the new techniques, a great part of the effects of the supervision will be restricted to the limited number of years which the borrower has left to live. Moreover, it could be argued that farmers of an advanced age are less willing to change their methods or techniques and, therefore, require more supervision. On the other hand, it could be argued that positive effects would be achieved, if the farmers who do not work with the Coast Plan imitate the new practice adopted by older borrowers. Possible the older borrower can have a greater influence in this respect than those who are relatively young.

c). Educational Level. The educational level of a farmer will reflect, his ability to learn new agricultural techniques and

TABLE IV

Average sizes of the families, numbers of dependents and the area able to be cultivated per dependent for the agencies of the Coast Plan of which samples were taken in 1967

Agency	Average size of family	Number of dependents	Average area able to be cultivated per dependent
Cañete	6.92	6.51	0.625
Huacho	6.52	6.40	0.855
Pacasmayo	6.95	6.70	0.826
Motupe	7.63	6.38	1.166
Zarumilla	<u>8.11</u>	<u>7.62</u>	<u>0.343</u>
Average of the sample	7.22	6.67	0.793

TABLE V

Grouping of Borrowers under the Coast Plan According to Age Groups and per Agencies, 1967 (given as percentages)

Age in Years	Cañete	Hiacho	Bacasmayo	Motupe	Zamunilla	Total
Less than 25	4.5	--	--	5.1	--	2.1
25 to 29	--	8.8	7.3	10.0	9.3	7.2
30 to 39	12.1	19.4	20.4	19.0	23.4	18.9
40 to 49	30.3	20.2	30.8	25.1	31.3	27.9
50 to 59	25.8	22.6	25.0	17.0	19.8	22.0
More than 59	<u>27.3</u>	<u>29.0</u>	<u>16.5</u>	<u>23.8</u>	<u>16.2</u>	<u>21.9</u>
Sample Total	100.0	100.0	100.0	100.0	100.0	100.0

to become a farmer with an efficient and commercially sized farm. Moreover, it will reflect the type of employment which he will be able to obtain.

In the five agencies which were studied, more than 10% of the borrowers had received no kind of formal education. In fact, in Motupe and Zarumilla more than 15% and 21% respectively had undergone no kind of formal education. In comparison, in the agencies of Cañete and Huacho there were few farmers who had not received a formal education. The education level of the borrowers, by agencies, is shown in Table VI. More than 80% of the borrowers had five years or less of primary instruction.

If one considers the level of education imparted in rural schools and the very few years during which the borrowers attend said schools, one might think that a great percentage of the borrowers would not know how to read or write well. Nevertheless, it was found that of a high number of borrowers regularly bought newspapers. This could indicate that a process of learning took place in this aspect after the period of formal education had been completed or that one of the members of his family could read well. In the same way, they probably have difficulties with reasonably sophisticated arithmetical calculation. Therefore, the technical assistance bulletins and other written means of information probably will not be effective for the majority of these borrowers. The field personnel of the Agricultural Research and Development Service seem to be aware of this situation, since only 7% used publications as a means for technical assistance. Of course, the use of written publications also depends on their availability. The records for controlling operations and production should be designed and prepared in a very simple manner and visits should be made to a certain number of farms in order to show the farmers how to fill in the form and records which are required.

d) Availability of manpower.- The manpower available in each family for the operation of the farm was calculated in terms of man day; each member of the family was weighted in accordance with his age and sex. The factors utilized in this weighting were as follows:

	<u>Factor</u>	
	<u>Man</u>	<u>Woman</u>
12 or less years of age	0.2	0.2
13 to 18 years	0.5	0.5
More than 18 years	1.0	0.6

No distinction between the sexes has been made until the age of 18. It is assumed that at this age women will devote part of their time to household activities. On the basis of these calculations, the

TABLE VI

Borrowers grouped according to their educational level, 1967 (given as percentages)^{1/}

Educational level reached	Cañete	Huacho	Pacasmayo	Motupe	Zarumilla	Total
<u>Primary School</u>						
None	1.6	3.2	10.4	15.2	21.9	10.8
1 - 2 yrs.	13.6	19.4	35.0	25.1	28.8	25.6
3 - 4 yrs.	30.3	21.8	27.7	28.6	38.8	29.3
5 yrs.	27.3	37.0	15.4	21.2	6.2	20.5
<u>High School</u>						
6 - 7 yrs.	7.6	7.3	3.5	4.3	4.3	5.1
8 - 9 yrs.	12.0	8.1	1.1	1.3	--	3.9
10 yrs.	6.0	3.2	5.8	3.0	--	3.9
<u>University</u>	<u>1.6</u>	<u>--</u>	<u>1.1</u>	<u>1.3</u>	<u>--</u>	<u>.9</u>
Sample total	100.0	100.0	100.0	100.0	100.0	100.0

^{1/} Sample of borrowers obtained from the Coast Plan.

average amount of manpower available from each family for working on the farm in the five agencies was 1.9 men per family.

The amount of manpower available from each family varied considerably from one family to another as a result of the great differences existing between the size of the families. No relationship was found between the amount of manpower available from the family and the size of the farm, while the amount of manpower which was contracted increases with the size of the farm, as can be seen in Table ~~XI~~, ~~V~~. This relationship is seen in each of the five agencies sampled. Using the same information it was found that as the size of the farm increased, the amount of contracted manpower per hectare tended to decrease. This implies greater mechanization less intensive crops or greater efficiency in utilization of manpower. The correlation coefficient was negative - 0.40. The percentage of borrowers who contracted manpower from outside the farm varied from 52% in Motupe to 70% in Huacho.

E. Lending Policies and Procedures.

1. Funds.

Table VIII shows details of the Funds committed to the Supervised Credit Program up to the 31st of December 1971, both by AID and the Peruvian Government. On December 31st, the total value of the Funds was equal to 43.0 million dollars. The amount involved in the Trust Fund was 37.1 million dollars, of which 27.5 million had already been received. The interest received by the Fund and capitalized reached the sum of 655,610 dollars on the date mentioned above.

It should be pointed out that the 11 million dollars which appear as a contribution of the Peruvian Government represent three loans made by AID to Peru. These loans were given in 1963 and 1964, and in the Loan Agreement 527-L-047 it was established that the repayment of these three loans should be used to form part of the Trust Fund. At a later date, AID and the Peruvian Government agreed that 20% of these funds should form a sub-fund to give technical support to the Credit Program.

Table IX shows the number and amounts which have been approved, executed, disbursed and reimbursed for the Credit Program for the period between 1964 and 1971; these loans were granted through the Trust Fund. During 1964 through 1971, 74,049 loans have been approved for a total amount of 66 million dollars of which 47.14 million dollars have been disbursed. The repayments made by the borrowers are equal to 29.3 million dollars, that is to say 62%.

TABLE VII

Manpower available from the family and contracted manpower by size of farm, for the Agencies from which a sample was taken, 1967.

Agencies and size of farm	Manpower available from family (man/day)	Contracted manpower (man/day)
<u>Cañete</u>		
0.1 - 3.0 Has.	2.5	4.1
3.1 Has. or more	<u>2.4</u>	<u>10.8</u>
Agency average	2.5	6.2
<u>Huacajo</u>		
0.1 - 3.0 Has.	1.9	4.1
3.1 - 7.0 Has.	1.6	4.7
7.1 Has. or more	<u>2.3</u>	<u>21.8</u>
Agency average	1.9	10.8
<u>Pacasmayo</u>		
0.1 - 3.0 Has.	1.4	10.8
3.1. Has or more (a)	<u>1.6</u>	<u>49.5</u>
Agency average	1.4	24.6
<u>Motupe</u>		
0.1 - 7.0 Has. (b)	2.0	16.1
7.1 Has. or more	<u>1.6</u>	<u>19.5</u>
Agency average	1.8	17.4
<u>Zarumilla</u>		
0.1 - 3.0 Has.	1.9	7.0
3.1 - 7.0 Has.	2.2	13.0
7.1 - Has. or more	<u>2.2</u>	<u>21.0</u>
Agency average	1.9	8.0
Average of sample	1.8	15.0

(a) The second and third sizes of farm are combined due to the sparse information on the subject.

(b) The first and second sizes of farm are combined.

TABLE VIII

Statement of Funds Committed to the Supervised Agricultural Credit Program, December 31, 1971
(in dollars)

<u>AID</u>							
Loan # 527-L-020 (DLF-204)	9'000,000	8'484,134	5'470,806	3'013,328 ^{1/}	--	--	--
Loan # 527-L-029	6'600,000	5'923,788	5'923,788	--	--	--	--
Loan # 527-22-140-099	1'000,000	335,521	335,521	--	--	--	--
Loan # 527-L-047	9'000,000	7'200,830	6'765,334	435,496 ^{2/}	378,616	378,616	--
Grant (Disaster Area)	<u>780,000</u>	<u>780,000</u>	<u>--</u>	<u>780,000</u>	<u>--</u>	<u>--</u>	<u>--</u>
Sub-Total (1)	<u>26'380,000</u>	<u>22'724,273</u>	<u>18'495,449</u>	<u>4'228,824</u>	<u>378,616</u>	<u>378,616</u>	<u>--</u>
<u>Peruvian Government</u>							
Counterpart Funds to 527-L-047	5'000,000 ^{3/}	5'000,000	5'000,000	--	--	--	--
AID Loans Funds to Peru PL-480 Title IV-Sales Agreement	<u>11'000,000</u>	<u>8'800,000</u>	<u>3'399,500</u>	<u>5'400,500</u>	<u>2'200,000</u>	<u>849,775</u>	<u>1'350,225</u>
	3,664	3,664	3,664	--	--	--	--
Sub-Total (2)	<u>16'003,664</u>	<u>13'803,664</u>	<u>8'403,164</u>	<u>5'400,500</u>	<u>2'200,000</u>	<u>849,775</u>	<u>1'350,225</u>
<u>Capitalized Interest (3)</u>	<u>655,610</u>	<u>655,610</u>	<u>655,610</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
General Total (1)+(2)+(3)	<u>43'039,274</u>	<u>37'183,547</u>	<u>27'554,223</u>	<u>9'629,324</u>	<u>2'578,616</u>	<u>1'228,391</u>	<u>1'350,225</u>

Source: Financial Reports of the Trust Fund of the Agricultural Development Bank.

- ^{1/} Amount to be repaid by the sub-borrowers of the San Lorenzo Colonization and Irrigation Project.
^{2/} Amount lent to the sub-borrowers in the disaster area. The repayment will increase the Fund.
^{3/} Loans granted by AID to Peru to be sub-loaned to Government bodies; the total amount of the loans was 12.8 million, but, due to the devaluation of the sol in 1967, it is considered that the figure given represents the total net amount.

TABLE IX

Number and amounts of loans approved, executed, disbursed, reimbursed under the Supervised
Agricultural Credit Program-between 1967-1971
(in millions of dollars)

Year	<u>APPROVED</u>		<u>EXECUTED</u>		<u>DISBURSEMENTS</u>	<u>REIMBURSEMENTS</u>
	Nº	Amount	Nº	Amount	Amount	Amount
1964	809	0.2	665	0.1	0.04	
1965	14605	5.9	13082	5.3	3.30	0.9
1966	10832	5.0	10561	4.8	4.30	2.4
1967	8554	6.9	9589	6.6	5.00	2.9
1968	12153	14.3	10826	13.3	9.10	4.3
1969	12916	12.3	11568	11.7	10.20	6.6
1970	8433	10.1	7862	10.1	8.30	7.0
1971	<u>5747</u>	<u>11.3</u>	<u>5112</u>	<u>9.2</u>	<u>6.90</u>	<u>5.2</u>
Totals	74,049	66.0	69,265	61.1	47.14	29.3

Table X~~E~~ shows the loans approved for the period 1965-1971 and the respective amounts assigned to each crop. Table XI shows the percentage distribution of the absolute values of Table X. It will be observed that during the whole of the period it has been the rice crop which has received the greatest amount of money that is to say 32.7%. In second place is corn with 19.7%. In third and fourth place are potatoes and dried beans with 14% and 10.5% respectively.

As for the hectares cultivated by the sub-borrowers of the Credit Program, it will be observed in Tables XII and XIII that, up to 1971, 234,425 hectares had been worked; 31.8% were devoted to corn, 24.2% to rice and 13.1% to dried beans. It will also be observed that in 1965, 43,157 hectares were affected, in 1971 only 25,702 hectares were being work this represents 60% of those being worked in 1965.

2. Interest Rates.

1. For cooperatives, rural communities, social interest agricultural societies and other rural groups, there will be a deductible annual rate of interest of 7% for any kind of loan except forestry loans, which will pay a 2% commission without any other charge for the borrower.
2. For individual farmers with loans devoted to the production of the agricultural and livestock foodstuffs, the rate of interest without any other charge is:

Up to S/.150,000.00.....	7%
From S/.150,001.00.....	9%

The rate of interest now in force in the ADB will be applied, without any extra charge, for agricultural loans not devoted to the production of foodstuffs and for loans for financing movables and real estates; then rates of interest are as follows:

Up to S/.50,000.00.....	7%
From S/.50,001.00 up to S/.100,000.00.....	9%
From S/.100,001.00 to 150,000.00.....	10%
From S/.150,001.00 to 200,000.00.....	12%

3. For business loans and loans on products:

Any amount10%

4. For loans related to the establishment and management of forestry plantations, the borrowers will pay an annual 2% deductible commission and no other charge will be made.

TABLE X

Distribution of short- and long-term loans in the Coast Plan
Per crop and per year during 1965 through 1971 (in thousands of dollars)

Crops	Amounts Approved						Amount Accrued	
	1965	1966	1967	1968	1969	1970		1971
Rice	1.11	1.6	2.4	2.7	3.1	2,232.5	1,744.2	3,987.6
Corn	1.7	1.1	1.6	1.3	1.5	1,325.6	1,070.0	2,402.8
Potatoes	0.3	0.4	0.5	0.6	1.4	930.2	767.4	1,700.8
Dried Beans	0.5	0.3	0.4	0.3	0.7	744.2	535.0	1,281.4
Fruit	0.1	0.4	0.4	0.4	0.3	93.0	1,000.0	1,094.6
Vegetables	0.3	0.2	0.2	0.2	0.2	139.5	116.3	256.9
Alfalfa	0.2	0.1	0.2	0.4	0.2	93.0	256.0	350.1
Tomatoes	0.2	0.2	0.2	0.1	0.2	93.0	70.0	163.9
Others (a)	0.4	0.7	0.5	0.6	0.8	558.0	395.0	956.0
TOTAL	4.8	5.0	6.4	0.6	8.4	6,210.8	5,953.9	12,195.9

(a) Includes crops such as onions, chile, garlic, alfalfa, pastures, sorghum, manioc, sweet potato, coffee, grapes, olives, aniseed, and minor fruits.

SOURCE: Summary of reports from the Local Committees obtained through the Department of Agricultural Development and Research.

TABLE XI

Distribution of loans per crop and per year during 1965 through 1971 (percentum) 1/

Crops	Percentum Distribution							Total Accrued
	1965	1966	1967	1968	1969	1970	1971	
Rice	23.3	32.3	36.2	41.5	37.3	35.9	29.3	32.7
Corn	34.6	21.5	23.7	19.7	18.0	21.4	18.0	19.7
Potatoes	5.9	8.3	7.9	8.5	16.8	14.9	12.9	14.0
Dried Beans	10.6	6.8	6.9	3.9	7.8	12.1	9.0	10.5
Fruit	2.1	7.5	6.2	6.1	3.9	1.5	16.8	9.0
Vegetables	7.2	4.9	3.3	2.4	2.3	2.2	1.9	2.1
Alfalfa	3.6	2.0	4.0	6.9	2.2	1.5	4.3	2.9
Tomatoes	4.6	3.9	3.3	1.9	2.1	1.5	1.2	1.3
Others	<u>8.1</u>	<u>12.8</u>	<u>8.5</u>	<u>9.1</u>	<u>9.6</u>	<u>9.0</u>	<u>6.6</u>	<u>7.8</u>
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Refer to Table X.

TABLE XII

Area farmed with short and long-term loans per crop and per year during 1965 through 1971 (in hectares)

Crops	Hectares Worked							Total Accrued
	1965	1966	1967	1968	1969	1970	1971	
Rice	5,282	9,592	8,348	9,320	10,819	7,786	5,553	56,700
Corn	15,186	9,037	11,518	10,756	12,007	9,714	6,412	74,630
Potatoes	972	806	1,113	1,932	4,606	2,630	2,063	11,492
Dried Beans	4,868	3,419	3,919	2,780	5,891	6,190	3,767	30,834
Fruit	1,526	464	606	1,060	871	321	2,299	7,147
Vegetables	3,460	1,299	1,324	1,195	1,321	994	734	10,327
Alfalfa	1,483	420	1,362	2,518	961	569	1,165	8,478
Tomatoes	1,112	821	856	602	706	473	296	4,866
Others	<u>9,628</u>	<u>655</u>	<u>3,585</u>	<u>3,499</u>	<u>3,702</u>	<u>2,829</u>	<u>3,413</u>	<u>29,951</u>
TOTAL	43,157	29,513	32,631	33,662	40,884	31,506	25,702	234,425

TABLE XIII

Area farmed per crop and per year during 1965 through 1971 (percentum distribution) ^{1/}

Crops	Percentum Distribution							Total Accrued
	1965	1966	1967	1968	1969	1970	1971	
Rice	12.2	32.5	25.6	27.7	26.5	24.7	21.6	24.2
Corn	35.2	30.6	35.3	32.0	29.4	30.8	25.0	31.8
Potatoes	2.3	2.7	3.4	5.7	11.3	8.3	8.0	4.9
Dried Beans	11.3	11.6	12.0	8.3	14.4	19.6	14.7	13.1
Fruit	3.5	1.6	1.9	3.1	2.1	1.2	8.9	3.0
Vegetables	8.0	4.4	4.1	3.5	3.2	3.1	2.8	4.4
Alfalfa	3.4	1.4	4.2	7.5	2.4	1.8	4.5	3.6
Tomatoes	2.6	2.8	2.6	1.8	1.7	1.5	1.2	2.2
Others	21.5	12.4	10.9	10.4	9.0	9.0	13.3	12.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^{1/} Refer to Table XII.

3. Collateral

The guaranties for the loans are as follows:

1. Agricultural loans: First pledge on crops and harvests.
2. Livestock loans: Pledge on the cattle, offspring and production.
3. Loans for financing machinery and equipment: Pledge on goods and second pledge on crops and/or products.
4. Loans for financing real estate:
 - a) In the case of individual farmers: A mortgage on the real estate, if this is possible, and/or an agricultural pledge.
 - b) For cooperatives, social interest agricultural societies, associations and groups of farmers, a mortgage on real estate, if this is possible, or an agricultural pledge on future crops.
 - c) For rural communities: an agricultural pledge on future crops. In this respect, it must be kept in mind that the profitability of the farm, as determined in the respective economic study, should be sufficient for the loan to be recuperated and for the commitments previously contracted to be complied with.
5. Forestry loan: Pledge on plantations and crops.
6. Business loans: The products being stored which must be insured and the endorsed policy.

4. Techniques for Evaluating Loans.

The methods employed for processing the applications for loans are as follows:

1. The applications for loans are studied in the following order of priority, agrarian cooperatives formed by beneficiaries of the Agrarian Reform, rural communities, social interest agricultural societies, and other organized groups or individuals located in any of the agrarian zones embraced by the program.
2. The Ministry, through its body of experts on agricultural assistance, is responsible for drawing up the applications for loans in collaboration with the interested parties. It is responsible for guiding them in the preparation of their applications in the following manner by:
 - a) Receiving and processing the registration of all the farmers and groups which apply for loans;
 - b) Submitting the registration of the applicants to the local committee so that they can be classified and approved;

c) Making sure that the applicant for the loan manages the land on a direct and permanent basis; by determining if the land is suitable for the purpose for which the loan is being granted;

d) Planning the loan:

- By determining the amount of the loans.
- By establishing whether the loan is feasible in view of the guaranty which is being offered.
- By preparing the investment plan.
- By fixing reimbursement dates in accordance with the level of income.
- By preparing and processing the applications.

In the case of forestry loans, technical advice will be provided by the sub-departments or offices of the General Forestry, Hunting and Land Utilization Department.

3. In drawing up the reimbursement plan for loans financing machinery and equipment and real estate, not only the capital but also an estimate of the interest which must be reimbursed by the borrower must be included when determining the repayments.
4. Once the application for credit has been filled, the official of MOA who has taken part in its preparation will make a note of his own technical evaluation and recommendations on the said application. In the case of forestry loans, it will be the representative of the Sub-Department or Office of the General Forestry, Hunting and Land Utilization Department, who will be responsible for the study.
5. Technicians of the MOA refrain from offering any assurances on the approval of the credit which has been requested; this is quite definitely the responsibility of the Credit Committee. Efforts must be taken to avoid work being carried out and services given in anticipation of the possible approval of the loan.
6. The loan documents duly prepared by the official of the MOA are submitted to the appropriate local committee so that it can decide upon the case if it is within the limits of its autonomy; if it is outside its autonomy, the Local Committee submits the documents with its report and opinion to the respective Regional Credit Committee. The Regional Committee will decide upon the application if it is within the limits of its autonomy or it will submit it, with its report and opinion to the Ministry of Agriculture in Lima, if it is outside its autonomy. The MOA in Lima, will then send the document with its own report and opinion to the board administering the Fund, so that it can be submitted to and decided upon by the Fund Council.

When the Loan documents have been decided upon by the Council and have been signed by its representative, the Board Administering the Fund will send the loan documents to the respective office of the ADB so that it will proceed to draw up the loan contract and execute it in accordance with the norms which have been established; the Board Administering the Fund will send a copy of the letter of remittance to the offices of origin.

When the regional committees submits documents to the Council for its approval they send five copies.

6. With all loans approved by the Fund Council and by the Regional Credit Committees, a copy of the loan documents is sent to the respective General Department and another to the Board Administering the Fund for their information and for their files.

F. Collection.-

1. List of Reimbursements.

The annual reimbursements of the Program are detailed in Table IX. Only the levels of default of the Credit Program will be discussed in this section. Thus, Table XIV shows the distribution of the Funds resources for the year 1968-1971. It will be observed that the portfolio due for the year 1968 was 18.9% of the resources of the Fund and that for 1971 it had climbed to 33.2%. Table XV shows the amounts in default accruing by 3 monthly periods. It is worth noting that the level of default for the last 3 monthly period of 1971 is 248% bigger than the level for the first 3 monthly period of 1968, which is 100%.

The line of regression for the historical series is equal to:

$$D = 81.4 + 18.6 T_i$$

in which:

$$\begin{aligned} D &= \text{quarterly level of default} \\ 81.4 &= \text{Interception of the straight line} \\ 18.6 &= \frac{dD}{dT_i} = \text{the curve of the function} \end{aligned}$$

$$T_i = \text{Time (in three monthly periods)}$$

The curve of the line of regression indicates that every three months the level in default increases by 18.6 million soles.

2. Methods.

All loans can be paid totally or partially before they are due.

The loans which have been granted can be cancelled in any of the following cases:

Table XIV

Distribution of the Fund During 1968 Through 1971 (in thousands of dollars) ^{1/}

	1968		1969		1970		1971	
	(\$ 000)	%	(\$ 000)	%	(\$ 000)	%	(\$ 000)	%
Cash on hand	1,753	14.8	-165	<u>2/</u>	-306	<u>2/</u>	3,225	14.0
Portfolio current	7,828	66.3	12,436	78.8	13,957	71.0	12,158	52.8
Portfolio past due	2,228	18.9	3,351	21.2	5,708	29.0	7,653	33.2
Fund ^{3/}	11,809	100	15,787	100	19,665	100	23,036	100

^{1/} Estimated in June of each year.

^{2/} Percentages have not been calculated of minus amounts. The monthly reports of the Board Administering the Fund show minus cash balances for June 1969 and 1970. This means that the Fund obtained money temporarily from other sources.

^{3/} In this Table, the word "Fund" applies to the sum of three components: cash on hand, portfolio current and the amounts in default.

According to this definition, the Total of the Fund must exceed the resources, contributed to the program by AID and the Government by the amount of the interest owed by the borrowers.

SOURCE: Monthly Reports of the Board Administering the Fund. - Agricultural Development Bank.

TABLE XV

Accrued Quarterly Amounts in Default (in millions of dollars)

Year	Quarter	Amount in Default	Growth rate	
			%	% <u>1/</u>
1968	I	90.0	2.1	100
	II	95.8	2.2	105
	III	131.6	3.1	145
	IV	139.7	3.2	154
1969	I	140.7	3.3	155
	II	144.1	3.4	159
	III	206.0	4.8	227
	IV	214.9	5.0	236
1970	I	221.3	5.1	243
	II	245.4	5.7	270
	III	300.8	7.0	331
	IV	307.8	7.1	339
1971	I	320.7	7.4	353
	II	329.0	7.6	361
	III	342.8	7.9	376
	IV	316.6	7.3	348

SOURCE: Table prepared with information obtained from the monthly statistical reports of the Trust Fund.

1/ The first quarter of 1968 has been selected as base 100.

1. Due to the fact that the term of the contract has expired;
2. If the borrower refuses or does not accept the technical guidance of the official of the Ministry who is supervising the credit;
3. If the borrower refuses to allow the loans to be inspected or to provide information which is requested in relation to said loans;
4. If the borrower should use or dispose of all or part of the pledge without the authorization of the creditor;
5. If the borrower were to use the loan, which he has received, for purposes which are different from those indicated in the respective contract; and
6. Through non compliance with any part of the contract.

All reimbursements are applied firstly to pay the interest due on the loan and the balance is used to repay the capital lent.

When short-term loans give backing to long-term loans, the payment of money made by the ADB to the borrower are used to repay the short-term loans, until they have been fully repaid and the balance, if there were one, will be used to repay the long-term loans.

Borrowers which are in default to the Bank, and at the same time receiving loans from the Fun, will first repay back to Fund. The balance, if existing may then be utilized for paying back the Bank.

If it should be necessary to sell the goods offered as a guarantee, the product of said sale is employed in the following manner:

1. The money produced by the sale is employed to pay the interest due and the capital;
2. When the guarantee is real-estate, when it is sold, the money produced is used to pay the loan which was made for said guarantee; and
3. If the guarantee to be sold is considered as a source of income to repay the loan (cattle, machinery), measures will be taken to modify the reimbursement plan in accordance with the new economic study. The money forthcoming from the sale is employed to pay part of the loan.

Under no circumstances can the personnel from the Ministry receive money from the borrowers in order to make repayments on the loans, but they can collaborate in the recuperation of said loans.

4. Extension of the reimbursement schedule.

The extension of the loan is possible when bigger areas than those stipulated in the loan contract are sown or when the items contemplated in the investment plan cost more than was planned.

The Regional Credit Committees have the power to approve, in cases of emergency, increases in loans which when added to the amount of the loans approved could exceed the maximum limit authorized for the purposes of agricultural, livestock and forestry loans, and loans for financing real estate. This would be done to save the crops and/or cattle which would allow the whole of the addition to the loan to be recuperated and all or the majority of the original loan to be recuperated. The Regional Committee shall inform the Council of this measure.

The Local Committee may extend the expiry date of short-term loans;

1. When, due to justifiable reasons the work for which the loan was approved begins at a later date than that indicated in the investment plan contained in the application.
2. When adverse conditions exist which cause the growing period to be extended and therefore the postponement of the harvest.

The extension of a loan is granted as soon as it is known that the loan will not be paid on the date which was fixed, and in any case the extension is granted before of the expiry date of the loan, after it has been proved that there is a pledge or security.

For long-term loans in which the conditions indicated above appear measures are taken to formulate a new reimbursement plan.

Any sum of the loans not paid on the expiry date is known as a default balance. The following measures are taken in the case of delinquent borrowers:

1. An investigation of the cause of the default will be necessary;
2. If the default is due to causes beyond the borrower's control resulting from bad weather conditions or the abnormal situation of the market, measures should be taken to achieve a satisfactory solution so that the loan can be extended under a new set of installments, carrying the balance of the loans granted over to the next agricultural year;
3. If the default is found to be due to technical or administrative deficiencies, a plan should be worked out to overcome them;
4. If the default is caused by the defective use of the loan or through the disposal of the pledge, the respective legal proceeding should immediately be taken to insure the collection of the loan;
5. When necessary an audit in order to recuperate the loans, any of the members of the Local Committee, who approved the granting of the loan can give orders for such auditing to be carried out; said members will have the responsibility for

explaining why this measure was taken at the next session of the Local Committee at which it shall be decided by a unanimous vote who shall pay for said audit. In the case of disagreement, the matter shall be submitted to the Regional Committee. Special care should be taken in arranging for the loan to be audited before the pledge disappears.

The Regional and Local Credit Committees hold extraordinary meetings every three months in order to study the portfolio in default provided by the Ban, and in order to consider possible solution for reducing the reasons which cause the balance in default and to improve the system of recuperation.

Moreover, during the same meetings, attention should be paid to the conditions of the borrowers who have loans in arrears for more than two agricultural years, and in which no reduction of the amount in arrears can be observed, in order to avoid the portfolio in default from increasing in the future. The Local Credit Committees hold extraordinary meetings in the month of March each year with the object of determining those loans considered uncollectable. Said information is strictly confidential and cannot be made public for any reason whatsoever.

The respective office of the Bank sends to the Administrative Board of the Fund a list of the uncollectable loans with an indication of the extra charges and interests due.

No borrower with a loan which has been declared uncollectable can receive a new loan; he moreover, continues to have the responsibility of paying the loan which is due.

The Local Committees grant debit balances carry-overs on the loans which they have granted up to a maximum of three successive agricultural years.

The Regional Committees can approve loans that are in arrears up to a maximum of five agricultural years.

In spite of what has been said in the previous paragraphs, it should be kept in mind that the time necessary for paying the debit balance is fixed in accordance with the farming unit's capacity for repayment, which is determined by the economic study which has been carried out.

At the same time it should be pointed out that, if in the agricultural years in which debit balances are carried over, a bigger income is obtained, be it through higher yields and/or higher prices for the sale of the products than those calculated in the study, the borrower will be asked to make higher payments on the debit balance than those fixed in

in the loan application, in order that the balance in default may be recuperated in the least time possible.

When it is observed that there are cases in which the balance being carried over or in default are increasing from one agricultural year to another, the Credit Committee carries out an exhaustive study of the causes for the default with the object of correcting the causes, this can be done by considering changes in the type of farming and by intensifying the amount of technical assistance being provided.

The Local Committees only grants carry-overs of balances on new loans when it can be shown, through information given in writing by officials of the Ministry who are supervising the loans, that the lack of payment on the date stipulated in the contract is due to causes beyond the borrower's control.

All the officials of the Credit Committee are jointly responsible for the efficient progress of the program which has a notable influence on the recuperation of the amounts which have been lent; the Bank is the body responsible for recuperating said amounts.

When it is found that farmers, who have ceased to be borrowers, having debit balances on loans charged against the FUND, or had loans that have been declared uncollectible, with holdings on the farm which has received loans in previous agricultural years (financed with resources other than these of the FUND), the officials of the local credit committee must inform the Trust Committee, so that it can take the necessary measures to recuperate the outstanding balances.

G. Costs and Financing.

1. Administrative Costs.

In accordance with the Agreement 527-L-047 the Agricultural Development Bank receives 6 1/4 percent for its services as Fideicommissary of the Trust Fund. The costs of administering the technology are covered by contributions from the Peruvian Government which are provided through the Ministry of Agriculture's budget.

2. Savings of the beneficiaries.

There is no organized program to promote savings among the borrowers; nevertheless it should be pointed out that technical assistance and agricultural development agents are trying to guide the farmer in the habit of saving and in the need to do so.

3. External Financing.

This point has been dealt with in the Section "Funds".

H. Complementary Factors.

1. Technology.

a. Tied Loans.

The Agricultural Credit Program does not condition the use of technologies or inputs. The innovations and improvements offered to the farmers are done so only as recommendations.

Technical Assistance and Supervision of the Program.

The bodies supervising the loans carry out the following work:

- They determine the crops and the livestock which are suitable for the zones and sectors in which the loans are being granted.
- They establish the real cost of production of each crop or the breeding of the particular kind of animal, and they make an estimate of the probable yields and sale prices; this information serves as a basis for determining the amounts of the loans which are to be granted during the agricultural years and the respective repayment plans.
- They promote the organization of farmers in order to facilitate the granting of the loans.
- They provide technical and social assistance to the beneficiaries.
- They manage the indirect items with the authorization of the borrowers.
- They make field inspections in order to check on the state of the activities being financed, the execution of the work laid out in the plans stipulated in the loan contract and production estimates.
- They provide facilities for the marketing of the products.

Other Procedures employed for Spreading new Technology.

The technical assistance service which forms a part of the Credit Program constitute the only mean for introducing innovations and raising the technological level. In the agricultural zones where the program is being carried out, it has been necessary to combine economic and technical assistance to help the farmer to raise his standard of living and agricultural output.

b. Type of Technology.

The Credit Program provides credit for new varieties of seeds, fertilizers and other inputs as part of the Program to increase agricultural outputs. This topic has already been dealt with in the section on "Conditions for Granting Loans", contained in this report.

2. Supplies and Sales.

a. Supplies for the Program.

The program has no system for supplying the farmer with inputs. The program recommends the kind of input which should be used for each crop. The farmer obtains his inputs by buying on the markets.

b. Guaranteed sales and systems for supporting prices.

The program in itself has no system for supporting prices or guaranteeing the sale of the borrowers' product. The farmer makes use of the general policy of the Government which is aimed at protecting the small farmer and insuring the sale of his products on the market. The program has provided the farmers with silos for storing their products; this is a valuable contribution for the marketing of said products.

c. Insurance.

Neither the program nor the Peruvian Government have developed an insurance system designed to protect crops against damage and lost.

III. Evaluation.

A. Results of the program.

1. Apparent utilization of the Loans.

In general, it can be said that the borrowers taking part in program comply with the investment programs recommended to them when they receive the loan.

2. Effects.

a. Production.

There are no data on output before the loan was made. This makes it difficult to measure the degree in which output has varied due to the influence of the program. Nevertheless, it should be pointed out that the contribution of the program has allowed the borrower to undertake production activities, which he was not able to do beforehand due to the fact that he had no access to conventional sources of credit.

b. Income from the farm

The University of North Carolina examined a sample from five zones where technical assistance agencies of the Credit Program operate. The data referring to farm income is shown in Table XVI~~5~~.

The highest total gross income per farm and agency was found in Pacasmayo with 2,112 dollars. The lowest total gross income was found in Zarumilla with 331 dollars per farmer. The relatively high total gross income on the farms of 7 or more hectares in Pacasmayo and Cañete was caused by relatively big farms, specializing in the production of rice and potatoes respectively. Both crops use relatively large amounts on inputs and generally produce high incomes per hectare. The average total gross income per farmer in the five agencies was 1,493 dollars, of which 169 dollars came from non-farm activities. In all cases there is a direct relationship between the average of the size of the farm and the average of the total gross income.

The average amount spent on consumption according to estimates given by the farmers in the five agencies, was 683 dollars per year. The average amount spent for the family varies between agencies from 640 dollars up to 795 dollars- there being a very high variation within each agency. It can be expected that the level of consumption varies according to the size of the family and the level of income. It can be observed that the average income of the father of the family does not cover the amount consumed by the families on farms with less than 3 hectares excepting those in the agencies of Cañete and Pacasmayo.

c. Technology.

There is no information on the use of technology by the borrowers prior to their receiving the loans; as a consequence of this, the impact of the program in this field cannot be determined. Nevertheless, the degree in which fertilizers are now being used gives an indication of the impact of the program in relation to the use of this input, provided that the recommendation to use fertilizers is accompanied by the granting of credit. Appreciable differences in the use of fertilizers were observed between the five agencies, of which samples were made. In two of them, Zarumilla and Motupe, the average amount of nitrogen applied by the borrowers was only 10.8% and 9.6% respectively of the amounts which had been recommended; while the farmers in the other agencies of Pacasmayo, Huacho and Cañete applied 27.3%, 101.7% and 63.5% respectively. It is understandable that the first two agencies should have applied less nitrogen, given the fact that in both areas there are limited water resources. The situation is similar in the case of phosphorus, where the amount applied in all agencies is considerably less than

TABLE XVI

Income from off-farm activities, gross income from on-farm activities, total gross income and annual consumption of the borrowers who were interviewed, averages by agencies and size of farm (in dollars)

	Income from off-farm activities	Gross income from on-farm activities	Total gross income	Annual Consumption
<u>Cañete</u>				
0.1-3.0 Has.	197	865	1,062	705
3.1 has. or more	<u>129</u>	<u>3,969</u>	<u>4,098</u>	<u>800</u>
Average for the Agency	177	1,844	2,021	735
<u>Huacho</u>				
0.1-3.0 has.	204	419	623	779
3.1-7.0 has.	170	862	1,032	640
More than 7 has.	<u>16</u>	<u>2,083</u>	<u>2,099</u>	<u>937</u>
Average for the Agency	135	1,069	1,204	795
<u>Pacasmayo</u>				
0.1-3.0 has.	147	590	737	566
3.1-7.0 has.	209	2,106	2,315	636
More than 7 has.	<u>300</u>	<u>8,711</u>	<u>9,011</u>	<u>969</u>
Average for the Agency	<u>183</u>	<u>2,112</u>	<u>2,295</u>	<u>640</u>
<u>Motupe</u>				
0.1-3.0 has.	203	211	414	471
3.1-7.0 has.	124	891	1,015	634
More than 7 has.	<u>218</u>	<u>1,146</u>	<u>1,364</u>	<u>797</u>
Average for the Agency	188	800	988	653
<u>Zarumilla</u>				
0.1-3.0 has.	148	314	462	645
3.1-7.0 has.	74	319	393	642
More than 7 has.	<u>165</u>	<u>937</u>	<u>1,102</u>	<u>1,102</u>
Average for the Agency	132	331	463	654
Average for all those interviewed	169	1,324	1,493	683

SOURCE: North Carolina University, Supervised Agricultural Credit Evaluation Program, Lima, 1968.

that recommended. The majority of the borrowers applied less nitrogen than was recommended by the soil analysis report.

In regards to the type of seed used, it is difficult to determine with any precision what changes took place, due to the fact that the quality of the seed varied, even when dealing with improved and selected seeds. Nevertheless, one can conclude that the percentage of farmers using selected seed is considerably bigger than the percentage using it before they took part in the program. The utilization of selective seed for a given crop is dependent of the availability of water, the use of fertilizers and soil and climate conditions.

d. Savings and other Sources of Financing.

There is no formal program for promoting savings among borrowers. At the same time, there are no data which allow one to determine to what extent the farmers saved on their own initiative.

In regards to other sources of credit, as far as the Coast Plan of the Supervised Agricultural Credit Program is concerned, more than 20% of the borrowers also obtained loans from other sources, as can be observed in Table XVII. More than half of the farmers who managed to obtain loans in addition to those granted under the Coast Plan, received them from local businessmen, friends or relatives. There is no information available on the amount lent by other sources as compared with that lent under the Plan.

A different System of Credit existed before the Coast Plan as is illustrated in Table XVIII. More than 25% of the farmers taking part in the Coast Plan in the agencies which were interviewed did not use any form of credit before 1964.

e. Opportunities of employment.

No information has been compiled on whether the farmer borrowing under the program is the owner of the land or not. However, agricultural loans have allowed, specially on the small farms, the whole of the borrowers family to be assimilated into farming activities. Another positive effect of the program has been that on the medium size farms the agricultural loans have permitted an increase in the employment of temporary labor.

f. Political Social Structure.

The Credit Program has complemented the Agrarian Reform process which began with the establishment of small and medium size properties for farmers who were working as laborers on the farm. The position of being owners has allowed wide sectors of the rural population to become more directly part of the credit and marketing system. Obviously this process has caused the social position of the farmer to be modified. The status of new owner permits the farmer to use credit in his agricul-

TABLE XVII

Percentage of the borrowers interviewed from the Coast Plan, who have other sources of credit, by agencies, 1967 (a)

Sources of Credit	Agencies					Total
	Cafete	Huacho	Pacaz - maye	Metupe	Zarumilla	
Coast Plan only	71.2	75.8	78.8	94.0	38.1	74.7
Commercial banks	—	1.6	2.3	—	—	0.9
Businessmen	6.1	4.0	4.2	1.3	20.5	6.3
Private persons and relatives	4.5	17.0	12.3	—	2.9	7.0
Agricultural Develop- ment Bank, Property owner	15.2	1.6	1.2	1.3	—	3.0
Land Bank	—	—	1.2	—	1.8	0.6
Cooperative (b)	—	—	—	3.4	30.6	5.5
No information available	3.0	—	—	—	1.8	0.8
Others	—	—	—	—	4.3	0.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

a) Some of these farmers are not working with the Coast Plan.

b) Some cooperatives organized by the Agricultural Research and Development Service are now providing farmers with money coming from formal loans granted by the Fund.

Source: North Carolina University. Supervised Agricultural Credit Evaluation Program, Lima 1968 p.87

TABLE ~~XVIII~~ XVIII

Sources of credit available to the borrowers, who were interviewed, before the implementation of the Coast Plan, by agencies, 1967

(Percentages)

Sources of Credit	Agencies					Total
	Cafete	Huacho	Piscasmyo	Motupe	Zarumilla	
None	4.5	22.0	31.9	42.0	21.7	26.7
Commercial Banks	--	6.5	5.4	1.7	--	2.8
Businessmen	38.0	11.4	13.5	6.1	3.6	14.3
Friends and Relatives	12.1	33.3	17.3	13.0	6.1	15.7
Agricultural Development Bank	33.3	20.2	7.7	9.5	8.6	14.6
Landowner, property-owner	12.1	1.6	21.1	1.3	--	8.7
State Tobacco Monopoly Company	--	--	--	--	60.0	900
No information available	--	5.0	3.1	26.4	--	8.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: North Carolina University, Supervised Agricultural Credit Evaluation Program, Lima 1968, p.88

tural transactions.

4. Image.

a. Attitudes of the farmers.

In regard to the opinion of the borrowers, 60% of those who were interviewed said that they preferred dealing with what was the Research and Extension Service, only 9% showed a preference for the Agricultural Development Bank and very few farmers showed any preference for credit institutions other than the Research and Extension Service and the Agricultural Development Bank. There is a close relationship between the opinions on credit and capital as a factor in output. The borrowers under the Coast Plan were asked why their output had not increased or what was the most important element for increasing their productivity and income. 13.8% of the borrowers said that capital was the most limiting factor, while 41.6% of those who were interviewed said that water was the most limiting factor on production.

b. General attitude towards the Program.

The Credit Program has been considered by the Government as one of the most important mechanisms for incorporating small and medium sized farmers into the production framework.

From the time the program began up to the present, the Government has seen that its activities in the agricultural field have been more effective through the loans made to small farmers. In this way the farmers have found a means of obtaining capital and source of incentive to produce more not only due to the loans which they received but also due to the technical assistance which accompanied these loans.

B. Evaluation procedures and feedback .

1. Procedures for evaluating the program.

No research has been done to permit an integral evaluation of the program. The studies which have been carried out are of a partial character and only indicate what could be taking place in the whole program. But the greatest difficulty with which one comes up against in trying to evaluate the program is the lack of processed data on the condition of the borrowers and his farm when the credit assistance began or when he applied for a new loan. The farmer, on

requesting a loan, provides information on a card which includes data on the characteristics of the farm: its size, topography, water resources, manpower availability, capacity to produce forages, buildings, equipment and the type of farming being practiced. Moreover, data is compiled for livestock on specific technical aspects: feeding, rate of births and deaths and a picture of the availability of forage, condition of health, for insemination and reproduction. In regard to economic factors, information is collected on the available markets and methods of marketing the products, income, expenses and probable profits are also taken into consideration. The investment payments and reimbursement plans are also detailed. All this information is collected by a technician sent by the program to the farm; he submits it in a report and includes his own opinion as to whether he is or is not recommending the loan.

2. Data on the effects of the program, the attitude of the farmers and the changes in the program.;

In the absence of any integral evaluation of the program, the changes which have taken place in agricultural credit policy and procedures have been based on the recommendations made by the technicians and others involved in providing assistance to the farmers. In general terms, these modifications have been aimed basically at making assistance more meaningful and the borrowers more willing to receive it.

C. Problems.

A list of major problems follow:

1. Deficiencies in the installed capacity of the institutions directly responsible for the program.
2. Very frequent changes in the personnel in charge of administering the program; this has made it more difficult to achieve a higher level of training in the management of the various operations involved in the program.
3. Loans in default. The problems deriving from technical assistance, the selection of borrowers or the coordination between bodies and institutions are reflected in the fact that many loans are not being repaid.

By the 31st of December, 1971, of the 20.2 million dollars owed by the borrowers, 28% or 7.3 million dollars was in default. A high rate of default has a direct influence on the availability of the resources of the program, and, if it reflects a high proportion of uncollectible loans, the cost of the program, high in itself due to the cost of technical assistance, rises yet further.

4. The program lacks systematic evaluation. This makes it difficult to apply effective readjustment in the development of supervised loans.

5. It appears advisable to integrate the management of the program. The Ministry of Agriculture is the body which has most influence in the selection of the borrowers, while the Agricultural Development Bank collects the loans. This appears to have something to do with the large number of loans in default. The author believes that ideally, only one body should be responsible for managing the loans.

D. Conclusions on Loans for small farmers.

1. The main problems facing small farmers.

The economic problem facing small farmers is the limited size of their plots of land, which are uneconomic to farm. As discussed previously, according to samples taken in five agrarian agencies for the agricultural years of 1964-1965 and 1965-1966 in the Coast Plan 75% of the loans were for less than 490 dollars. There is a direct correlation between the size of the loan and the size of the plot of land; this allows us to deduce that in regards to the agricultural years mentioned above the size of the plots of land were very small. The volume of the output of small farms does not permit the marketing of outputs and therefore small farms are run for the subsistence of the farmer and his family.

Very often it proves that agricultural credit granted to small farmers puts them in an even worse position due to the fact that they run into debt through their inability to repay the loan,

Social problems which face small farmers are as follows:

- (1) Their level of education is very low, and their desire to progress both qualitatively and quantitatively is limited.
- (2) They are unwilling to adopt new techniques or crops which are better adapted to the limitations of the land which they work.

2. The Role of Credit in the Solution of their Problems.

Generally small farmers did not have access to the conventional sources of credit such as private commercial banks or State Development Banks. The Supervised Agricultural Credit Program has contributed to incorporate these small farmers into the credit system by granting soft loans, that is to say loans with low rates of interest. Moreover, the program has contributed to improving the educational level of the farmer by making him tacitly carry out social activities to obtain his loan. Thus for example, the farmer who requires a loan from the Fund has to leave his rural area and go to the city to visit the officials of the bodies which are carrying out the program.

Credit has not been able to change the low profitability of the plots of land which are uneconomical through limited size.

3. Credit and new Technologies.

a. Beginning the Development of Small Farmers and Maintaining the Development of Small Farmers.

For the small farmer who works an uneconomic plot of land, no amount of credit will be sufficient to transform him into a subject qualified to have access to conventional sources of credit. Those farmers with economically viable farms need to receive technological assistance and permanent supervision in a more intensive manner, rather than a new injection of credit. Many credit agencies would make funds available to these farms for the purchase of inputs if technology and supervision was available on a more extensive scale.

4. Conditions which lead to success or failure.

There is no evidence that the program would have been more successful if the process of granting and recuperating the loans had been administered by one body instead of two, that is to say the Ministry of Agriculture (which grants the loans and gives technical assistance) and the Agricultural Development Bank (which recuperates the loans). Nevertheless, there is evidence that when the process is combined under one single body better results are obtained (as is the case of Supervised Agricultural Credit in Colombia) than in a program in which responsibilities are divided (as is the case with the Supervised Agricultural Credit Program in Bolivia which was a failure and disappeared). Perhaps the Supervised Agricultural Credit Program would have been more successful if it had only worked with farmers who had economically viable farms and if technical

assistance had been given in a more intensive manner. That is to say that it would have been better to maximize technical assistance rather than the number of agricultural loans. In fact, the program in Peru has been conceived in such a way that it plays a social role, by helping the small and medium size farmer, and an economic role by improving these farmers so that they may have access to conventional sources of credit in the future.

5. Suggestions for improving the program.

a. Coordination and the need for a central body of credit.

A Supervised Credit Program aimed at supporting the small farmers of the country is in no way a simple operation; on the contrary, it is very complex and requires the combined efforts of the institutional bodies and the farmers so that it can achieve the objectives which have been established; this means, apart from conducting an efficient service of technical assistance, that the following things have to be done:

- a. Plans and programs must be drawn up on a national, regional and local level.
- b. The progress obtained should be evaluated on a permanent basis so that the problems arising may be identified and solved in an effective and timely manner.
- c. A dynamic flow of information must be available leading to reliable research work and decisions, and,
- d. All the bodies taking part in the program must be actively coordinated in order to guarantee the efficient execution of the program.

IV. Technical Assistance.

Technical assistance is the most important and costly factor of a Supervised Credit Program. It is necessary to provide good technical assistance, including the necessary equipment, sufficient transport and personnel. Without sufficient resources the efforts devoted to training and controlling the use of the credit will be extremely diluted with the result that said credit will have almost no effect on output. There also must exist a careful balance between the number of farmers and technical assistance services.

An efficient technical assistance service must include three important aspects:

1. Simplified administrative procedures for the approval of loans.
2. The permanent preparation of personnel.
3. The careful selection of the borrowers.

Little can be expected of a technical assistance service if, for example, the head supervisor has an overloaded timetable of administrative duties and does not have the time or the means to visit the farms. It would be unfortunate if only technical assistance agents attend the farmers in view of their low level of training and preparation.

Technical assistance agents are the people who work directly with the farmer and therefore it is they who are responsible for bringing about changes and introducing new techniques. Their duties are not limited only to those of an agricultural technician; in addition to these activities, they advise, plan, organize and help the farmers to make sound decisions. With the development of the cooperative movement during the last few years, the demands made on his abilities are even greater especially due to the amounts of money involved. This calls for the continuous preparation of field personnel.

Even in a Supervised Agricultural Credit Program, it is necessary to carry out some kind of selection of borrowers. Unless the resources of personnel and capital are unlimited (and this is not so), those responsible for the credit must direct the program at those farmers who have the best possibility of success within the group of farmers which are to be benefited by this program. Their possibilities of success must be evaluated in accordance with the objectives of the program, and in accordance with the characteristics and potential ability of the borrower to achieve said objectives. Among the economic criteria for selecting the future borrowers who are most likely to achieve the aims and objectives of the program, we can quote the following:

1. Profitability of the investment.
2. The borrower's ability to repay the loan.
3. The borrower's capacity for assuming risks.

The criterion on profitability refers to the economic feasibility of the activity being financed, the second point refers to the analysis of all types of income and expenses, and the third point refers to the farmer's capacity to absorb losses, especially those caused by the variations in the availability of water, the fluctuations in the level of prices, pests or diseases.

The following measures can be recommended in order to make the technical assistance service more efficient:

- a. Determine the correct number of farmers and organized groups that can be properly attended by a technical assistance agent.
- b. Establish the minimum size of farm, which, having potentially productive resources, can be farmed on a permanently profitable basis.
- c. Provide the agencies with an installed capacity in proportion to the number of borrowers.
- d. Simplify the procedures for granting loans in order to avoid overloaded administrative work and permit more time to be devoted to technical assistance.
- e. Provide constant training for field personnel on the following aspects (among others):
 - The organization of and assistance to cooperatives.
 - The objectives and aims of the program.
 - The plans and evaluation of the farms on a local level.
 - Operational procedures.
 - Agricultural loans and techniques.
 - Rural administration.

Personnel training should be based on short periodic courses and on informing the agencies of the results of experiments which are being carried out. The short courses will contribute not only to raise the level of preparation of the field personnel on subjects directly related to loans, but also to establish greater coordination with executing bodies on a national level.

Statistical Information and the Evaluation of the Program's Impact.

It is essential to have an effective system of control, evaluation and supervision so that a permanent source of information both on accounting matters and of a general evaluation character can be made available. One of the factors which makes it difficult to appreciate the impact of the credit program on farmers is that there is no information available on the situation before the program was established; therefore, it is not possible to make any comparison between the previous situation and the one which now exists.

The information of an accounting character provided by the Agricultural Development Bank is quite abundant, but in some cases, it is also defective. Among other things, there is monthly information on the amounts which have been approved, executed, drawn, and reimbursed; this information is organized by years and periods of payment. There is also information on the number of loans, but unfortunately it does not tell us how many farmers have been benefited by the credit - there are only estimates on this point (the number of loans is not necessarily correlative with the number of farmers, since one farmer can have one or more loans).

Permanent information for general evaluation has never been compiled. At the present moment there is interest in obtaining the results of a new statistical record which includes detailed information on the farmer and the characteristics of his farm for each one of the loans.

Information is necessary on various levels: on the national, regional and local level. Most attention has been given to compiling information in order to analyze it on a national level; little interest has been paid to the zonal and local levels. It is desirable that, with a rapid and efficient data processing system, this information would be made available to the local and regional committees which are the bodies which are most closely connected with farmers, and could use its results to the greatest effect.

It has been found that the local offices have no adequate filing system and rarely have information on loans in default; this represents an obstacle to providing good technical assistance service. In some cases work is being duplicated or the information is too detailed and repetitive. The greater part of this information is only of importance to the Supervising body, that is the technical assistance agencies.

These deficiencies in the statistical control and evaluation of the program make it difficult to improve the program and to carry it out more efficiently. Therefore it is necessary to organize a system for permanently evaluating the progress of Supervised Agricultural Loans.

Preferential Rates of Interest.

Preferential rates of interest should be given to associated groups of farmers in order to give them incentives. Further incentives may be given by assuming part of the operational cost.

Powers and Responsibilities of the Credit Committees and their Areas of Influence.

The autonomy of the local and zonal committees in both the financial and administrative fields should be increased regarding the development needs of the area.

The administrative bodies making the funds available should be made uniform; in this way the powers and the responsibilities of the various credit committees will be uniform.

One set of regulations should be followed in the administration of the different trust funds.

Efforts should be made to identify the limit of responsibilities and authorities of the regional and zonal committees and special zones should be fixed by the Sectorial Agricultural Planning Office and the Agrarian Reform.

The participation of farmers as members on the zonal and local committees should be promoted.

The Work of Technical Assistance.

The program has been conceived on a socio-economic basis, the philosophy of which appears in the "Agricultural Credit Manual". From the social point of view, it has tried to incorporate the farmer into the system of credit from which he has been barred, and economically is trying to convert him into someone able to receive and manage credit. The program itself has been aimed at giving technical assistance to the farmer through agricultural credit. It is difficult to evaluate the success or failure of the program in relation to technical assistance, since the effect of the technology depended on the viability of the farm or the type of crop.

However, on the other hand, the greatest difficulty encountered in trying to evaluate the effect and use of technical assistance is the absence of data which would permit a comparative analysis to be made of the situation before the program began and that which existed after it had been carried out.

Recommendations.

The author considers that AID should advocate:

1. An increase in the use of new technologies.
2. Technical assistance should be provided in a manner commensurate with the number of borrowers, and,
3. A continuous and permanent evaluation of the development of the program should be made.

BIBLIOGRAPHY.

- Trust Fund (Agricultural Development Bank). Monthly and three-monthly Statistical Reports.
- Ministry of Agriculture. Agricultural Development Bank: Supervised Agricultural Credit Program. Credit Manual. Lima, 1971.
- North Carolina University. Evaluation Program of Supervised Credit. Lima, 1968.
- Ministry of Agriculture. Evaluation Program of Supervised Credit. Lima, 1971.
- Ministry of Agriculture. National Training and Research Center for the Agrarian Reform (CENCIRA). National Seminar on Supervised Agricultural Credit. Final Report, Lima, 1971.
- Jorge Baanante Murguía. "Some Problems in the Development of the Supervised Agricultural Credit Program. Ministry of Agriculture (CENCIRA), Lima, 1971.
- Ministry of Agriculture . National Training and Research Center for the Agrarian Reform. (CENCIRA). Second National Seminar on Supervised Agricultural Credit. Final Report. Lima, 1971.
- Other reports of the National Seminar on Supervised Agricultural Credit Joint Meeting of the Bodies directing Fields of Work. From the 5th to the 8th of April, 1971.

COUNTRY STUDY

A REVIEW OF SMALL FARMER CREDIT
IN BOLIVIA

by:
Tom C. Royden
Utah State University
for USAID/Bolivia

La Paz, Bolivia
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A REVIEW OF SMALL FARMER CREDIT

BOLIVIA

I. SUMMARY

Bolivian agriculture is comprised of two sectors, the overpopulated highlands and the underpopulated lowlands. It is only in the tropical lowlands that major advances in crop production are being made. Agriculture in the overpopulated highlands has been characterized since the Agrarian Reform by low productivity, "minifundia" and rural underemployment.

The Agrarian Reform of 1953 freed the Indian from his semiserfdom of the hacienda system, and converted him into a small farmer or "campesino" owning his own land. However, it left him without capital or technology to work his new lands, except on a very primitive basis.

The historical inefficiency of the Bolivian government institutions and the lack of development of modern socio-economic institutions in the rural areas has seriously impeded rural progress in Bolivia. The various government agencies working in the rural sector have not been in a position to respond to campesino needs. As a consequence, the campesino sector has stagnated and has been a serious drag on the economic development of the country.

In an effort to get credit resources and technology to the campesino after the Agrarian Reform, the Bolivian Agricultural Bank was reorganized and given responsibility for a supervised credit program with campesinos. The supervised credit program was run by the Inter American Agricultural Service in conjunction with the Bank from 1956-1963 and then directly by the Bank from 1964 until the present.

The experience of the Bank with the supervised credit program has not been a happy one and the resources channeled to the campesino sector have been declining in recent years. The problem of the Bank is that it is uneconomic to give loans to campesinos. The Bank does not cover its costs on the large number of small loans made. Supervision is extremely difficult and expensive. The Bank tried grouping campesinos into hastily organized cooperatives to lower their administrative and supervision costs. Because of the lack of preparation of the campesinos in formation of cooperatives and the subsequent lack of support, many cooperatives failed. The Bank experienced considerable losses. The Bank has recently suggested that responsibility for credit for the campesino sector be passed to a Rural Cooperative Bank that would receive a government subsidy and would specialize in an integrated approach to the campesino problem.

Because of the inherent difficulties of working with the campesino sector, private banks and commercial houses have extended little credit. The produce-middlemen, commercializing the campesino's crops, have been the most active in extending credit apart from various philanthropic agencies working with campesinos.

II. INTRODUCTION - HISTORY AND BACKGROUND

A. Population and Status of Agriculture

Bolivia's population was estimated to be 4.7 million in 1970. Those classified as non-urban constituted 65% of the total 1/. The overall population density was eleven persons per square mile, but this statistic is misleading because 70% of the population lives on the Altiplano and in the high valleys. Large areas of the lowlands in the upper Amazon basin are virtually uninhabited. Sixty per cent of the population is of pure Indian blood, (and largely comprises the rural sector), 12% is of European extraction and the remainder, or 28% is mixed. Although Spanish is the official language, many people speak only indigenous languages, principally Aymara or Quechua.

Bolivia is predominantly an agricultural country, with two thirds of her population engaged in agricultural activities. Agriculture's contribution to the country's annual gross domestic product (GDP) in recent years has averaged about \$175 million (at current prices) 2/. This amounts to 20% of the total GDP according to estimates of the Ministry of Planning. Agriculture's contribution to the total GDP is twice that of the mining sector and nearly 50% greater than that of manufacturing.

Thus as an employer and as a contributor to the GDP, agriculture is vital to the Bolivian economy.

Sixty-seven per cent of the population earns its living farming and the vast majority of these farmers own and work their own land. Since the Agrarian Reform in 1952, Bolivian agriculture, except for Santa Cruz, has been characterized by small owner operated farms or "minifundia" ranging in size from less than one hectare 3/

1/ Estadísticas Económicas USAID/Bolivia No. 13, Page 3

2/ Estadísticas Económicas USAID/Bolivia No. 13, Page 6

3/ FAO Statistics give 0.16 Ha. of cultivated land per inhabitant in Bolivia.

(Cochabamba valley and Altiplano near Lake Titicaca) to approximately 30 hectares, with some individuals owning as many as 10 parcels scattered over a wide area. The majority of the campesinos practice subsistence farming. However, in the tropical lowlands of Santa Cruz, the land ownership patterns are typified by large haciendas worked by wage labor. It is on these farms that the major increases in agricultural production such as sugar cane and cotton have been registered. Colonization by campesinos moving from the over-populated Altiplano and valleys to the tropical lowlands has been responsible for the increases in rice, citrus fruit and banana production.

B. Natural Geographical Regions

Geographically, the country can be divided into three major regions--the Altiplano, comprising 16% of the total land area, with about 60% of the population; the Valleys, comprising 14% of the total land area with about 30% of the population and the eastern lowlands with 70% of the total land area but with less than 10% of the population. (See Figure 1).

1. The Altiplano at 12,000 to 14,000 feet is characterized by significant variations in daily temperatures, frequent frosts (at any time during the year) and hail storms during the growing season that at times cause significant crop damage. It is also characterized by extensive eroded areas and generally depleted soils. Despite conditions which are hostile to agriculture (on average only 2 years out of seven can be considered good crop seasons), the Altiplano, especially those areas near Lake Titicaca, traditionally have been the centers of population and agriculture in Bolivia.

Because of the harsh environment of the Altiplano, where mean annual daytime temperatures range from 45 to 50 degrees Fahrenheit, only the most cold-hardy crops can be cultivated. Included in this small group of traditional crops are several which are indigenous to the Altiplano, including potatoes, oca (a tuber) and the native grain quinoa. Barley is cultivated with modest success, being used for grain, if it escapes being frosted, and for fodder for farm animals if frosted. Oats are grown to a lesser degree and wheat and corn to a very limited extent in a few favored areas. Large numbers of sheep, llamas and alpacas are widely grazed on the remnants of natural pastures, that have been so overgrazed for centuries, that there is little hope for any rapid recovery from

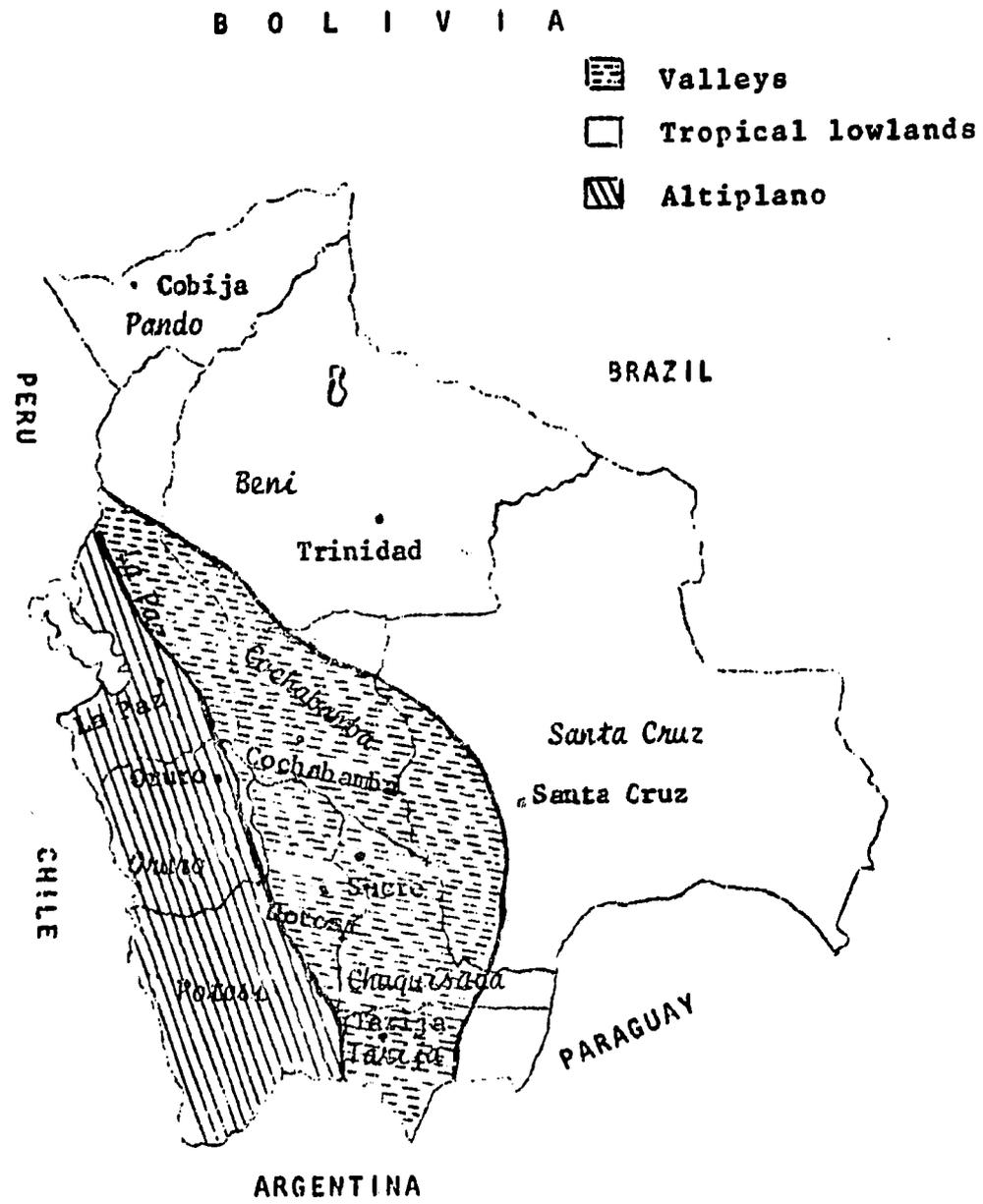


Figure 1. Physiographic Regions and Political Departments

their present state of degeneration. ^{4/} However, it is felt that in the long run the entire emphasis in the Altiplano region, except in a few limited areas, should be on animal rather than crop production because the climatic conditions make the return from crop production too low to support anything but subsistence agriculture.

Even in the more favored areas, the soils are extremely depleted. Chemical fertilizers are sparingly applied to a few crops. Fertilizer use is risky due to the possibilities of frost, hail storms, drought, etc. Rocky and hilly terrain in much of the country limits the use of machinery. A modest surplus is produced for urban markets, probably of the magnitude of 25% of total output ^{5/}. Crop yields per hectare are extremely low.

2. The Valleys, accounting for 14% of the total land area, are densely populated when compared to the limited amounts of good arable land available. There is considerable human pressure upon the land, and as a consequence, farming units tend to be small and uneconomical. Also because of the human pressure on the land and the steep landscape, soil erosion in large areas has reached the irreversible stage, and the land is badly deteriorated.

In the traditional areas of departments such as Chuquisaca and Tarija, officials of the Extension Service of the Ministry of Agriculture feel that agricultural production is declining year by year from erosion, notwithstanding the use of new technology such as fertilizers. Principal valley crops are wheat, corn, potatoes, barley, vegetables and fruits. The yields are good when soil and moisture conditions are adequate. The centers of dairy and poultry production are located in these valleys.

The dense population and small farming units makes the introduction of new technology extremely difficult even though the return is large.

3. The Eastern Lowlands account for 70% of the total land area, but is by far the least developed region in the country. Its agricultural potential has not as yet been fully assessed. Population density averaged less than two persons per square mile. Of the

^{4/} Final Report Bolivian Mission International Development Service Contract with Govt. of Bolivia, La Paz, November 1969, page 22.

^{5/} Agricultural Discount Fund Govt. of Bolivia, La Paz, 1971, page 6.

total 76 million hectares comprising this region only 200,000 are under cultivation, almost all in the Department of Santa Cruz. In the Departments of Pando and Beni, wild rubber and Brazil nuts are cash crops. The southern part of the Beni is predominantly a livestock area of large haciendas. In the absence of surface transportation meat is flown to the markets of La Paz and the mines. Santa Cruz is well suited to agriculture and has rich alluvial soils that were carried by the rivers from the eroded Valleys and Altiplano. The main crops produced are sugar, rice, cotton, corn, cattle, fruits, yuca, fibers, and oil-seeds.

Fertilizers are hardly used in this new "frontier" area because it is more economic to exploit the fertility of the easily available virgin forests.

C. Present State of Bolivian Agriculture

1. Production and Land Use

Between 1958 and 1968 agriculture's contribution to gross national product declined from 32% to 23% and population dependent on agriculture declined from 65% to 63%; total output expanded at an average of 1.66% annually and rural population increased at 2.24%; consequently, gross output per capita in agriculture decreased at 0.6% per year to a level of \$52 in 1968/69 ^{6/}. In 1969 the annual per capita income of the rural population was calculated at \$44 giving a monthly income of only \$3.33 per man, woman and child: ^{7/}

Table I shows the evolution of production of the twelve principal crops from 1962 to 1971.

It will be noted that all major expansions in production over the past decade have been in the tropical areas, particularly in the Santa Cruz region which has developed since the completion of the Cochabamba-Santa Cruz-Montero highway in 1956. This highway provided access for the tropical crops to be marketed in the urban and mining centers of the valleys and Altiplano. During this period, Bolivia reached self-sufficiency in, and became a limited exporter of rice, sugar and longstaple cotton. Meanwhile, production in the traditional farming areas (Valleys and Altiplano) which contain a rural population of 3 million, which is 90% of the national rural population, has remained virtually stagnant during this period. (See Table I)

^{6/} Methodology and Analysis Bolivian Agricultural Production and Marketing Loan by D. Carton M. Nelson, L. Sleeper, La Paz, Bolivia

^{7/} Presencia, Wednesday, July 12, 1972.

TABLE I

PRODUCTION OF SELECTED AGRICULTURAL CROPS

1962 - 1971

(In thousands of metric tons)

<u>Altiplano and Valleys</u>	<u>1962</u>	<u>1971</u>	<u>% Increase</u>
Potatoes	531	698	31.4
Maiz <u>1/</u>	312.2	378	21.1
Barley grain	60.5	65.7	8.6
Wheat	40	68.5	71.2
Quinoa	10.2	10.5	2.9
<u>Amazon Lowlands & Chaco</u>			
Sugar cane	652.5	1,467.7 <u>2/</u>	124.9
Cotton fiber	1.1	10	809
Coffee	4	19	375
Rice	27	50	85.2
Banana and Plantain	164.1	327	99.3
Yuca and sweet potatoes	145	246.8	70.2

1/ Includes the increased production of maiz from the tropical areas.

2/ The sugar cane data is for the year 1970. 1971 was a drought year and production fell drastically.

Source: Ministry of Rural Affairs and Agriculture. Division of Economic Studies and Statistics.

The exceptions are potatoes and wheat (increases of 31.4% and 71.2% respectively) which have been priorities of the Bolivian Government's and USAID's programs where research results, credit and technology have been made available. It is interesting that the potato crop area decreased from 107,500 Ha. in 1961 to 87,765 Ha. in 1968, while total production increased from 516.0 to 597.6 metric tons. 8/

2. Constraints Facing the Agricultural Sector

The most difficult problems facing Bolivian agriculture in general, but the campesino sector in particular, are the low levels of technology, production and production efficiency, and marketing inefficiencies. While production of certain crops has expanded considerably (See Table I), agriculture still employs over sixty per cent of the labor force, while producing only one fifth of the GDP. This low level of domestic production results in excessive foreign exchange being spent on imports of foodstuffs. Combined with marketing shortcomings, the low level of production also results in high cost food to urban consumers, which depresses demand and discourages increased production. Finally, it leads to low utilization of the rural labor force and low rural incomes.

3. Future Prospects

Apart from the lack of domestic demand, the difficulties in competing for export markets due to high transport costs poses another severe constraint on agriculture. Unless ways can be found to increase domestic demand and reduce the number of people in agriculture, there is little hope of raising the levels of living in rural areas over the next two or three decades.

Whether or not the slow migration from the Altiplano and Valleys to the tropical lowlands continues, the same market constraints will apply. The only hope lies in import substitution and expansion of breakthroughs into export markets such as has occurred with cotton in Santa Cruz.

D. Major Problems of Rural Sector

The rural sector in Bolivia is plagued by almost every known impediment to development. Generally, it lacks the application of known technology in adequate quantity and quality to spur production. It lacks marketing

8/ Estadísticas Económicas USAID/Bolivia 1971, No. 12, Page 12.

systems to replace those destroyed with the hacienda. Its storage and processing facilities are rudimentary and often inadequate to support modern agriculture. It lacks an organized structuring in the rural areas with the indigenous Indian population, that permits the needed social, economic, and political development and integration of the country.

The following specific impediments have special importance in the Bolivian situation:

1. Large components of the rural population are not integrated into the economy or society. Despite efforts of the GOB, the use of Spanish and a feeling of Bolivian nationality are uncommon in many rural areas. The subsistence farmer does not consider himself to be a part of the economy of the nation. He does not participate in it for lack of basic knowledge of how to participate, to organize and use what is available to him. As of 1967, the period when a concerted effort was made to get credit into the "traditional" rural areas, 60.3% of the population of Bolivia was illiterate ^{9/} and at least 90% of this illiteracy was found in the rural areas. In 1966, of a total of 1,080,700 children of school age (5-14 yrs.), only 622,366 were in school. A large proportion of the schools are still in the urban areas. In the rural areas, the children are often used to herd the flocks of sheep and for other agricultural work.
2. The effective integration of the rural sector requires competent management personnel working at the farmer level in cooperatives, associations and other local institutions to work with production, credit and marketing. Unfortunately, due to the low status of agriculture, almost all able and better educated people from the rural areas immigrate at the first opportunity to the towns to try to improve their lives, leaving a management vacuum or shortage, which in Bolivia has led to the failure or serious limitation of some well designed projects.
3. Transportation and communications are critical bottlenecks. Bolivia, in surface area, is the fifth largest country in South America with an area of 1,098,581 sq. km. However, the total road network extends only 28,119 kms. of which 1,104 kms. are paved. Seasonal earth roads extend for 15,529 kms. and gravelled all weather roads extend for another 11,486 Kms. ^{10/}

^{9/} Data provided by the Director of Educational Statistics. Department of Educational Planning - Min. of Education.

^{10/} Estadísticas Económicas, USAID/Bolivia 1972 No. 13, Page 19.

This minimal road network isolates the potential productive areas from their urban markets. However, more troublesome than the actual distances to markets is the time factor in travelling extremely poor, sometimes impassable roads. Frequently, trucks or other means of transport are not available when needed, regardless of cost. (This applies particularly to the colonization areas). Even where trucks are available, only the lure of high profits will attract truckers to potentially rich areas, which are serviced by poor roads. Thus, it is obvious that the marketing system and the economics of farm production depends heavily on the development of roads and transport.

4. After 19 years of land reform in some areas, the campesinos do not have title to the land which they occupy; and, with this obvious insecurity, are not making investments to improve production and/or living conditions.
5. The responsibility for food policy, import levels for essentials, price fixing, and program financing lies not only with the Ministry of Agriculture, but is also shared with other ministries. Over the years, the government has depended upon a policy of cheap food for La Paz and the mines for political support. This would seem to suggest in all out agricultural program. But such has not been the case. Rather the government elected to subsidize food imports, using export earnings from mining to subsidize food costs at the mines, and to control the price of certain food items, including beef and flour. This caused conflict of interest between the Ministry of Agriculture and other ministries. The coordination of an overall rural development policy, though vital, has been extremely difficult.
6. Appropriate, adequate, and timely rural credit has been, and is, a major problem particularly with the campesino sector. No economically viable system has been found to channel credit to the campesino sector. This subject which is the major part of this report will be dealt with in Part IV.

E. Role of the Campesino in Bolivian Agriculture

1. General

The Revolution of 1952 and the subsequent Agrarian Reform Law caused profound social, political and economic changes in Rural Bolivia. Of greatest importance was the freeing of the Indian from the semi-serfdom of the hacienda system, his occupation of

former hacienda lands, and his gradual entry into the market economy as both a producer and marketer of agricultural production, and as a limited consumer of manufactured goods.

The revolution of 1952 resulted in the Indian being converted to a "campesino" or small farmer owning his land. The disappearance of the "latifundios" and the large landholding "patron" (the tropical lowlands excepted), converted Bolivian agriculture to essentially a small-holder subsistence-type activity. Because of the pressure on the land, the Agrarian Reform Law 11/ defined the maximum size of land holding for campesinos or small farmers as:

Altiplano:	a) near Lake Titicaca	10 hectares		
	b) near Lake Poopó	15 hectares		
	c) southern Altiplano	35 hectares		
			Non-	
		<u>Irrigated</u>	<u>Irrigated</u>	<u>Vineyards</u>
Valleys:	a) high Valleys	6 Ha	12 Ha	3 Ha
	b) lower Valleys	4 Ha	8 Ha	3 Ha
	c) Region near Altiplano	20 Ha		
Tropical Regions:	a) Yungas	10 Ha		
	b) Santa Cruz	50 Ha		
	c) Chaco	80 Ha		

These different sizes of holding were derived from the differences in estimated productivity.

Practically, all agricultural areas are now labor intensive and capital poor, except in the tropical lowlands. Farming methods are primitive dating from Spanish colonial times and yields are very low.

2. Marketing Development

The campesino, in general, was not equipped mentally or materially in 1952 to take on his new role as individual producer and marketer. While the "patron" practically disappeared, his place was taken over by other leaders, particularly in the early years, by the

11/ Derecho Agrario - Abraham Maldonado, La Paz, Bolivia, 1956, Page 331.

"sindicato" leaders in order to secure definite possession of the land for the campesino. Later, "comerciantes" or produce middlemen appeared to develop new marketing channels, functions that before 1952 had been performed by the "haciendas" in assembling, transporting and marketing of agricultural products.

In response to the chaotic and inefficient marketing situation that developed after the Agrarian Reform and the excessive profits that were reputedly made by "comerciantes" the government set up a whole series of state institutions to stimulate and commercialize agricultural production.

CONAR	-	rice
INBOLCA	-	coffee
CONCOFRUT	-	fruit
COMBOFIA	-	wool
INT	-	wheat
CONQA	-	self-sufficiency in ag. products for the country

unfortunately, the institutions had little technical knowledge--were badly administered--lost money and are now almost moribund. They have been of little help to the campesino.

In response to this situation, a new initiative started in about 1965 to link community development, rural cooperatives, and "vertically integrated" projects with crops such as wheat and potatoes for a package approach to the campesino problem. Included in the package was new technology such as improved seeds, fertilizers, etc., as well as extension support, credit and partial price support. There have been some limited success as shown by the statistics of Table I.

3. Flow of Government Resources

In response to the social inestability in the traditional areas after the Reforma Agraria and the grave national food shortages, most public and private resources channeled into agricultural development went to the tropical lowlands, and, particularly, Santa Cruz. These investments resulted in sizeable increases in sugar, cotton, rice and cattle production. The areas of traditional agriculture where the vast majority of Bolivia's rural population were left behind.

About 1965, corrections started to be made in the distribution of resources between the traditional and tropical areas. For example, substantial financial and man power resources were devoted to the wheat program, which was designed to reach a maximum number of campesinos in the traditional areas. Increasing emphasis was also put on the improvement of the quality and management of sheep on the Altiplano, and the marketing of sheep and wool.

Further indications of efforts to help the small farmer in the traditional areas were: 1) The program for acceleration of the Land Titling process under the 1953 Agrarian Reform Law. 2) Stepped up community development programs and projects with more adequate funding, and 3) the beginnings which were made in channeling rural credits to cooperatives and pre-cooperatives. The two former programs received financial and technical assistance from the USAID Mission, while the latter was sponsored by the Inter American Development Bank.

4. Main Characteristics

The campesino sector, however, still shows the following disadvantages:

- 1) Extremely small land holdings or minifundia.
- 2) Low productivity (subsistence farming).
- 3) Under employment of the great mass of farmers.
- 4) Low level of income.
- 5) Inability to generate surpluses.
- 6) Inability of the campesinos to integrate into the economic, social and political life of the country.

Since the labor and technology are not limiting on a national basis, the reasons for under-production are considered to be the following:

- 1) Lack of incentives.
- 2) Ignorance of existing technology.
- 3) Traditional reluctance to experiment.
- 4) Lack of capital.
- 5) Inadequate marketing.

F. Appraisal of Institutional Setting

1. Appropriations for investment in agricultural services such as credit, extension and research are not a very significant portion

of the total government budget, when compared to the importance of agriculture in the national economy. (See Table II). Also, as a result of inadequate financial support, what services are available, are inefficient and unproductive. For example, in the extension service, there is a constant lack of funds to pay wages and travel expenses resulting in low personnel moral, high turnover and little effective work done.

The technicians are thus restricted to making plans, and have little chance to act or produce. The dissemination of agricultural technical information to farmers is therefore minimal, contributing to the fact that agriculture, with the exception of the Santa Cruz area, has stagnated in recent years causing a decline in gross output per capita in agriculture as well as a continuing unfavorable balance of trade.

2. Frequent political changes (between 1964 and 1971 Bolivia has had nine different governments) have resulted in equally frequent changes of personnel at the policy making level. Since these changes usually extend down to the Director General and often lower levels, there is a notable lack of continuity in the development of public policies. Furthermore, programs and operations are often disrupted while the new officials familiarize themselves with the situation and attempt to reorganize services in their own image. An example of the latter are the frequent changes in the recent past in the structure and organization of the services dealing with extension, community development and cooperatives in the Ministry of Agriculture.

Also, not only are priorities poorly defined owing to lack of overall planning, but budgetary procedures are seriously deficient. For example, even though certain budgets may have been approved all along the line, when the time comes for actual allotment from the Treasury, the funds are simply not available.

3. Projects and programs often lack essential components required for their proper implementation and functioning. Recent examples of this are the problems faced by the wheat program from lack of cooperation from millers (Cochabamba), the excess of contraband flour importations (Tarija), and the general lack of storage facilities.
4. In summary, the campesino when confronted by this set of contradictions, unkept promises and frequent changes in plans is justified in taking a skeptical view of government development plans and offers only a minimum of cooperation.

TABLE II

EXPENSES OF CENTRAL GOVERNMENT WITH RESOURCES FROM THE TREASURY

1962-1971, in US\$

<u>Activity</u>	<u>1962</u>	<u>1971</u>
Agriculture	550,000	2,958,000
Mining and Energy	100,000	1,158,300
Industry and Commerce	100,000	1,200,000
Transport, Housing & Communications	1,758,000	9,625,000
Finance and Public Debt	11,508,300	25,833,000
Education and Culture	8,141,000	34,966,000
Public Health	2,750,000	10,741,000
Defense	4,900,000	15,541,000
Government and General Administration	8,550,000	13,600,000
	<hr/>	<hr/>
TOTAL	38,357,300	115,616,300

SOURCE: Estadísticas Económicas USAID/Bolivia, 1972, Page 34

III. FARM CREDIT CHARACTERISTICS IN BOLIVIA

A. Background

The revolution of 1952 and the subsequent Agrarian Reform are a milestone in Bolivian rural history. Before 1952, Bolivian agricultural was in a semi-feudal state using techniques that were labor intensive. However, in areas where the use of capital inputs paid off, such as mechanization for wheat production, the beginnings of a modern agriculture was being created. All this ceased during the Revolution when the hacienda owners lost their lands and investments. Private capital and entrepreneurial talent then withdrew almost totally from the rural areas. The former feudal laborers, who now divided up and occupied the hacienda lands, found themselves without fixed or working capital and regressed to primitive methods of production. Grave national food shortages developed which caused the Bolivian government with Point Four assistance to concentrate on developing the tropical lowlands around Santa Cruz, where the effects of the Reforma Agraria had been less severe and where there was a nucleus of large land owners interested in retaining possession of their lands by putting them into production. Large amounts of credit were, therefore, made available to these areas by government and private source.

Meanwhile the country waited for the social situation to stabilize itself in the traditional areas, where the effects of the Agrarian Reform had been much more drastic and unsettling. As stability returned to the traditional areas credit resources were expanded. However, the application of these credit resources was hindered by the structural problems (minifundia) and the socio-cultural isolation of the campesinos, already discussed in the introduction.

To overcome the reluctance of private investors to put resources into agriculture in the traditional areas, the State Agricultural Bank was charged with particular responsibility in this area by the government in 1954 on its reorganization.

IV. INSTITUTIONS PROVIDING CREDIT TO THE AGRICULTURAL SECTOR

A. Central Bank

Within the structural and financial organization of Bolivia, the Central Bank is responsible for monetary and credit policy. The

Central Bank is responsible for directing credit resources to the sectors of greatest priority to the country. With regards to credits for agricultural development, the Central Bank has directed resources both to the state controlled agricultural bank and to the private banks (First National City Bank, Bank of Santa Cruz, Bank of America, Mercantil Bank, Popular Bank of Peru, National Bank of Bolivia, National Mortgage Bank, and Bolivian American Bank), as well as to the Banco Nacional del Estado or State Bank that before the 1971 reorganization was the banking department of the Central Bank.

By various supreme decrees, the Central Bank has been authorized to use its monetary reserves to provide financing for particular programs in sugar and rice marketing and cattle production. The Central Bank has been most active in the financing of the sugar harvest, through the warrant system set up to finance the holding of part of the annual production of refined sugar.

In 1967, the Central Bank received the Special Fund for Economic Development from funds generated from Law 480 that has provided 6.7 million dollars worth of rediscount financing for the agricultural sector in general, and \$3.7 million for agricultural production and marketing in particular ^{12/} from 1967 to March 1971. The fund has also provided resources for the export of agricultural products such as coffee and timber, and for fixed investments in agro-industry such as irrigation equipment for the sugar mills.

The rediscount financing effected by the Central Bank for the various banks is distributed from January 1967 to December 31, 1971 as follows:

TABLE III. Funds for Agriculture Discounted by Central Bank

Institution	Total Amount US\$	%	Repaid	Amount to be repaid US\$	%
<u>Banco Agrícola</u>	1,045,500	20.3	445,300	600,191	54.9
<u>Banco del Estado</u>	3,414,890	66.4	2,971,160	443,725	40.6
Private Banks	676,660	13.3	626,700	49,950	4.5
TOTAL	5,137,050	100.0	4,043,160	1,093,866	100.0

^{12/} Bolivia: A Survey of Agricultural Credit, March 1971, Carmen Deere, USAID/Bolivia, Page 18.

85% of the refinancing by the Central Bank was done with its own resources and 19.5% with funds from the Special Fund for Economic Development. 13/

It will be noted that the Banco Agrícola, the State Bank charged with development of the agricultural sector, only received 20.3% or US\$1,045,500 of the sum of US\$5,137,050 refinanced.

Examining the crops financed out of the fund's resources, it is apparent that the fund has been used to finance only the most profitable agricultural investments which are oriented towards the export market. (See Table IV). The small farmers or campesinos have only received indirect benefits from the activities sponsored by the fund, (particularly marketing of coffee), since they are not considered as being suitable subjects for commercial credit operations.

In 1972, the Central Bank received further funds from USAID in the form of the Agricultural Refinancing Fund for US\$7,250,000 to be used for the expansion of the production, processing and marketing of wheat, oil seeds, milk and animal fats. It is hoped that the campesino sector will benefit considerably from this new fund since many of the marketing and processing constraints that hold down campesino production will be removed.

B. Bolivian Development Corporation (CBF)

Although in the past CBF dealt with direct loans to agricultural producers through the colonization program, as well as marketing credit for the sugar industry, since 1965 all agricultural production and marketing credit has been channeled through the Agricultural Bank. The CBF, at present, is limited to loans in Agro-industry and to wholly-owned subsidiaries or joint ventures, which are agro-industrial activities. CBF has received two global loans for \$10 million each from the Inter American Development Bank (IDB) in 1961 and 1967. The CBF has five agro-industrial wholly owned subsidiaries. The industries and an estimation of their present day market value is detailed in Table V.

13/ La Estructura Crediticia Agropecuaria de Bolivia.
Lic. Hugo Ossio S. La Paz, 1972, Page 2.

TABLE IV

SPECIAL FUND FOR ECONOMIC DEVELOPMENT
AGRICULTURAL SECTOR CREDIT
(In US\$)

Activity & Crops	1967*	1968	1969	1970	Total
Exports	661,498	1,189,667	450,500	419,833	2,721,500
Coffee	396,667	509,167	120,833	262,917	1,289,583
Sugar	172,633	565,167	251,667	--	989,667
Wood	22,333	105,500	78,000	140,667	346,500
Cacao	10,083	6,500	--	--	16,583
Quinina bark	52,500	--	--	--	52,500
Cosillana	2,583	--	--	--	2,583
Achiote	4,500	--	--	--	4,500
Cheese	--	3,333	--	--	3,333
Skins	--	--	--	6,250	6,250
Palm hearts	--	--	--	10,000	10,000
Industry	--	180,000	--	80,500	260,500
Sugar Cane	--	180,000	--	69,667	249,667
Wood	--	--	--	9,167	9,167
Beekeeping	--	--	--	1,667	1,667
Agriculture and Cattle	289,000	674,667	1,586,667	1,185,583	3,735,917
Rice	83,333	--	42,333	--	126,167
Sugar cane	122,333	355,083	723,917	246,333	1,447,667
Cotton	83,333	82,500	524,167	643,833	1,333,833
Vegetable oil	--	--	66,667	--	66,667
Wool Development	--	63,500	199,917	295,417	578,833
Cattle Development	--	153,583	29,167	--	182,750
TOTAL	950,498	2,044,333	2,037,167	1,685,917	6,717,917

*May-December

Source: Derived from loan portfolio of Special Fund, Central Bank of Bolivia.

TABLE V

CBF's AGRO INDUSTRIAL SUBSIDIARIES

Industry	Location	Present Value
Guabira sugar refinery	Santa Cruz	\$ 13,000,000
Stephen Leigh sugar refinery	Tarija	5,500,000
Sugar cane fields pertaining to refinery	Tarija	2,000,000
PIL milk processing plant	Cochabamba	2,000,000
Todos Santos slaughter house	Santa Cruz	12,399,148
Reyes slaughter house	Beni	10,066,355

Source: Bolivia: A Survey of Agriculture & Credit, March 1971, Carmen Deere, Page 32.

C. Private Commercial Banks1. General

Since the Agrarian Reform, many of the Bolivian banks in the Altiplano and Valleys have not made a single agricultural loan, because the withdrawal of private capital and entrepreneurial talent was almost total, from these traditional areas. It was only with the recent Agricultural Refinancing Loan for \$7,250,000 mentioned on page 18 that private banks are again taking an interest in the rural areas of the Altiplano and Valleys. In the tropical lowlands, however, with the rapid expansion of agro-industries based on sugar and cotton in Santa Cruz, the private banks have been quite active.

A rough estimate based on interviews with private banks revealed activity in the order of \$8,000,000 in 1970. ^{14/}

The breakdown by type of financing is as follows: export financing \$4 million; financing of production and marketing \$3 million; and financing of cattle production and marketing \$400,000. These figures have been rapidly expanded in 1971 and 1972 particularly

^{14/} Bolivia: A Survey of Agricultural Credit. Carmen Deere, March 1971, USAID/Bolivia, Page 25.

in cotton and cattle production with the Bank of America and Bank of Brazil being the front runners. However, all of this credit has gone towards large farmers and associations of large farmers and none of it has reached the small farmer because of his being an unattractive credit risk.

The main reasons advanced for the small farmers being considered unattractive are:

- 1) Lack of guarantees--The Agrarian Reform Law forbade the small farmer to offer his land as guarantee.
- 2) The small size of loans.
- 3) The difficulties in collection of loans.
- 4) The poor production possibilities because of lack of technology.

2. Campefino Savings

No private banks, until recently, has been interested in capturing the savings of the campesino sector, since the campesino is considered to be still in the "mattress" stage of saving. However, within the last year, the Banco Mercantil has opened a branch in Punata (Cochabamba) on a trial basis with encouraging results. The bank is considering opening more branches in the Cochabamba valley.

D. Agricultural Bank of Bolivia

1. Background

The Bank was founded in 1942 by supreme decree with the object of providing credits to farmers, carrying out their banking and commercial operations, and importing agricultural inputs such as fertilizer, seeds, and machinery. The original capital was \$US 1,190,000. The Bank had four regional offices and operated as a private bank. In 1954, the Bank was reorganized to take on special responsibilities in conjunction with the Agrarian Reform Law. The basic objectives of the Bank were:

- (1) To sponsor the financial, technical and organizational development of the rural sector.
- (2) To give supervised agricultural credit of short and long terms of 18 months and 12 years respectively, with the following order of priority:

- a) Campesinos or small farmers; and agricultural cooperatives made up of same.
- b) Medium size farmers (land holdings above those mentioned on page 11)
- c) Agricultural companies and large farmers.

From the above objectives it can be seen that the bank was intended to be a development rather than a commercial institution. To finance this activity the Bank was allowed to charge up to a maximum of 12% interest on all loans plus a commission of 0.5% for documentation. The charging of penalty interest on delinquent loans was abolished.

2. Supervised Credit Program of the Inter American Agricultural Service

Because of the seriousness of the campesino problem and the fact that the bank lacked the personnel and experience to develop a sizeable supervised credit program, as required in their new statutes, the Inter American Agricultural Service (SAI), sponsored by USAID, started its own supervised credit program in January 1955. The two institutions worked together. The Division of Supervised Credit of SAI was responsible for approving and supervising the loans. The program was modelled after the Farm Home Administration programs in the U.S.A. The Bank was responsible for disbursement of the loans and for all accounting and legal work.

The Supervised Credit Program of SAI had as its objective the meeting of the following needs:

- 1) There was not adequate agricultural credit system in Bolivia, which could properly meet the credit needs of agriculture.
- 2) There was no credit system to support and stabilize the gains of the Agrarian Reform by providing a source of credit to place the newly acquired lands of the campesinos into productive agricultural use. 15/

The strategy of the Supervised Credit Program, in meeting the above mentioned objectives and the crucial food shortages that the country was facing, was twofold:

15/ Annual Report of Supervised Credit Division, SAI, Calendar Year 1955.

- 1) The campesinos were considered new land owners with little skill or initiative, possessing no personal capital to make production responses of any consequence. Bolivia's problem was seen as how to make this group emerge as commercial producers instead of subsistence farmers.

The supervised credit program hoped that marketable surpluses would be produced by the campesinos' acceptance of improved methods and practices, and more efficient use of their lands with inputs provided on credit.

- 2) The medium and large farmers, mostly to be found in the tropical lowlands, were considered to be the best hope for rapid expansion of food production because of their management ability and rapid acceptance of new methods.

Of the loans recommended in 1955, 98% were to individual farmers, the balance to autonomous corporations or societies. Thirty two percent of the loans to individuals were received by (463) campesinos, but these loans only amounted to 6% of the funds loaned. Nine hundred and eighty nine commercial farmers comprising 68% of the individuals received 94% of the funds. These proportions hardly changed during the life of the program. At the outset the Department of Santa Cruz was established as the concentration point for the supervised credit program because of the immense potential of the area. Throughout the life of the program, Santa Cruz received about 50% of the funds. ^{16/} The Departments of La Paz - 13%, Cochabamba - 11%, and Tarija - 15% were the only other Departments to receive funds of any significance. Because of the rampant inflation operating in Bolivia at the time (the exchange rate of the Boliviano against the Dollar went from 101 in 1952 to 12,250 in 1956), the Supervised Credit Program showed a net loss of \$797,320 in the short period from January 1955 to December 1958. ^{17/} However, impressive gains in food production were obtained particularly from Santa Cruz.

All credit was at 10% interest and short-term (18 months). A particular problem encountered with credit for the campesinos, was that of guarantees. Since most campesinos did not have titles to their land at the time and were not allowed by the

^{16/} Ministerio de Agricultura. Servicio Agrícola Interamericano. Informe de Actividades, Julio 1956-Marzo 1960. Page 82.

^{17/} SAI, Informe de Actividades, March 1960, Page 82.

Agrarian Reform to mortgage their land, the future harvest was accepted as a guarantee.

In 1963, the Supervised Credit Program was transferred to the Agricultural Bank. The Bank received 33 technicians trained in agricultural credit, and capital in the form of the loan portfolio and cash for \$1,720,000. With the increased personnel the Bank then developed a nation-wide coverage of the country with 8 regional and 30 provincial offices. It is with this restructured bank, taking the period 1964-1971, that we will mainly be concerned.

3. The Restructured Agricultural Bank, 1964-1972

a) Source of Funds of the Agricultural Bank

The Bank has two main sources of financing its own funds, the regular line of credit, and external funds, called, "The Special Programs Line of Credit". The special line is subdivided into external funds that are loaned to the Bank and external funds that are only administered by the Bank on a fideicommission basis.

Table No. VI showing the supply of external and internal financing to the Agricultural Bank illustrates the specialized programs by crops or activity to which financing has been destined.

b) Distribution of Funds

As has been pointed out in the introduction, most of Bolivia's agricultural potential lies in the tropical lowlands. If the distribution of the Bank's funds are analyzed as shown below, Table VII, it is found that they correlate closely with this potential.

For example, the Department of Santa Cruz represents 42.9% in value and 18.2% in number of all loans given, followed in value by the Department of Beni, La Paz, and Cochabamba. The traditional areas, that are dominated by the campesino sector, such as Oruro, Potosí, Tarija and Chuquisaca only received respectively 2.0%, 3.1%, 3.7% and 3.9% of all funds, which is a partial explanation of why in the face of population increase, agricultural production per capita has declined in these areas over the period 1964-1971.

TABLE VI

EXTERNAL AND INTERNAL FINANCING RECEIVED BY THE AGRICULTURAL BANK
FROM 1964 TO JUNE 1972

<u>General</u>	<u>Year</u>	<u>Source</u>	<u>Amount</u>	<u>Terms</u>
Colonization	1962	IDB 29-SF/BO	\$2,600,000	4% 3 yrs.grace, 18 yrs.
Rural Development	1964	IDB 35-SF/BO	1,100,000	4% 3 yrs.grace, 15 yrs.
Importation & purchase of machinery	1966	AID-511-L-028	2,100,000	30-1/2 yrs., 2-1/2% (9-1/2 yrs.grace, 1%)
General Ag. Credit Ministry of Agricul- ture Fideicomisum	1971	AID No.20	18,000,000	6% 40 yrs.
	1972	Min. Ag.	4,680,000	3% 4 yrs.
<u>Production</u>				
Cattle	1965	IDB	220,000	13 yrs, 4-1/2%
	1967	IDA	2,000,000	16 yrs, 4%
	1970	IDB 242-SF/BO	5,000,000	3-25% (5-1/2 yrs. grace)
Milk	1969	Argentine Govt	300,000	3 yrs., 4% (1 yr. grace)
Sugar Cane	1968	Bank of America	500,000	3 yrs., 10%
Potato	1967	AID-511-LCL 1008 (Local currency)	50,000	1 year, 6%
Wheat	1967	AID-511-LCL- 1018(Local curr)	200,000	20 yrs., 4% (5 yrs. grace 1%)
<u>Production and Marketing</u>				
Rice	1968	AID-511-LCL-1020 (local currency)	250,000	20 yrs, 4% 5 yrs.grace,1%
Cereals	1969	AID-511-LCL-1028 (local currency)	350,000	20 yrs., 4%-2-1/2 yrs. grace. 1%
Cattle	1969	IDA	1,400,000	16 yrs., 4% (5 yrs. grace)
Cattle, sheep	1971	IDA	6,200,000	40 yrs., 7-25% 9-1/2 yrs.grace
Cotton	1970	Bank of America	1,600,000	3 yrs., 10%
	1971	Banco Do Brazil	2,500,000	1 year, 9%
	1971	Central Bank	2,500,800	1 year, 6%
<u>Marketing</u>				
Rice	1967	AID-511-LCL- 1007(Loc.curr)	500,000	10 years, 6%
Coffee	1965	AID-511-24-150- 443	40,000	6 yrs., 3%

Source: Statistics Dept, Agricultural Bank of Bolivia

TABLE VII

LOANS APPROVED BY LINE OF CREDIT AND DEPARTMENT 1964-1971 in US\$

Department	Regular Line		Special Lines		T o t a l		Percentages	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
La Paz	648	2,167,166	192	2,006,666	840	4,173,833	14.3	13.3
Cochabamba	330	1,549,750	66	1,616,416	396	3,158,666	15.2	10.1
Santa Cruz	363	7,116,750	209	6,311,750	1072	13,428,500	18.2	42.9
Chuquisaca	675	897,416	32	315,583	707	1,212,999	12.0	3.9
Berri-Pando	298	2,008,500	264	4,543,750	562	6,552,250	9.5	21.0
Potosí	593	768,666	39	213,166	632	981,832	10.7	3.1
Oruro	273	290,833	31	346,833	304	637,666	5.2	2.0
Tarija	754	762,166	121	362,833	875	1,124,999	14.9	3.7
TOTAL	4934	15,561,247	954	15,716,997	5888	31,270,744		
PERCENTAGES	83.8	49.8	16.2	50.2			100.0	100.0

Source. Statistics Department, Agricultural Bank of Bolivia.

c) Terms of Loans to Borrowers

Interest Rate:- All loans have had an interest rate of 12% with a 0.5% commission for documentation with the exception of three special programs: Colonization, Rural Development, and Agricultural Development in Special Areas. These special programs, two financed by the Inter American Development Bank, (Colonization and Rural Development), and one financed by the Ministry of Agriculture, have had an interest rate of 6% and were administered through cooperatives or pre-cooperatives. The money was loaned to members of the cooperative at 8% and 2% was kept by the cooperative for administrative costs and capitalization. In no circumstances has the Bank been able to charge penalty interest on delinquent loans or been able to recover the extra costs of supervising rescheduled or delinquent loans.

Period of Loans: All loans for agriculture have been short term for up to 18 months. There are a few exceptions to this rule that have received 24 months. The loans to ranchers for working capital have also been short term (18 months), but loans destined for fixed capital such as breeding animals, barbed wire, etc., have had a grace period of 4 years and a repayment period of 8 years, or in total a period of 12 years for repayment of the loan.

Collateral or Guarantees: By law (until August 14, 1972)* the campesino was unable to mortgage his land or offer his titles in guarantee. Since he possessed no other capital goods of any value, the Bank accepted as guarantee either or both his animals (bullocks, sheep, etc.) and his future harvest. Because both these guarantees proved rather unreliable (disappearing before repayment deadlines), the bank recently has been insisting on letters of guarantee from small businessmen, often "padrinos", from the neighboring village or town that know and will guarantee the campesino.

* By Supreme Decree on August 14, 1972, the Agrarian Reform Law was changed to allow land holdings smaller than those specified on page 18 to be mortgaged. The demand for this change came not from campesinos but from intensive dairy and poultry producers around Cochabamba, who had plots of land within the limits set by the Reforma Agraria for campesinos. The inability to mortgage their highly capitalized operations severely restricted the expansion of these commercial enterprises.

The system seems to work well since very considerable social and economic pressure can be applied by the small businessman on the delinquent campesino. If no small businessmen are forthcoming to be guarantors, campesinos are required to sign letters mutually guaranteeing each other in case of default. This last system, the bank admits, has little value except as a means of scaring the campesino and bring home to him his mutual responsibility to see that repayment is made.

d) Trends in Lending

Several trends have become apparent in the Agricultural Bank's lending activities during the 1964-71 period. There has been a shift in the Bank's own financing from regular lines of credit based on the bank's own capitalization, to special programs earmarked for certain agricultural activities promoted by the various international agencies. In 1965, 85% of the Bank's loans were financed out of their own regular lines of credit; by 1967, 55% was so financed, and by 1969, only 34% of the loans were financed from the Bank's own capital ^{18/}. As will be seen in Table VI almost all the external financing that involves sizeable sums of money has gone towards cattle, cotton production, or the importation of agricultural machinery programs which benefit the commercial farmer but not the campesino. The only programs that are of direct benefit to campesinos are the two Inter-American Development Bank (IDA) programs of Rural Development and Colonization for \$2.6 and \$1.1 million. Part of the 1971, IDA Cattle and Sheep program for \$6.2 million will also be available for upgrading campesino sheep. One consequence of the trend of the external agencies to concentrate funds only on specialized programs has been a dwindling supply of funds in the Bank's regular credit line to meet the demand for credit in traditional and non export-oriented activities, in which the campesinos, pre-cooperatives and cooperatives are mainly involved. Table VIII shows the decline in value of loans made to this sector in 1971.

In various traditional areas (Tarija, for example) loans to the campesinos and precooperatives have been almost non-existent for the last two years.

^{18/} Bolivia: A Survey of Agricultural Credit, Carmen Deere, USAID/Bolivia, Page 33.

TABLE VIII

VALUE OF LOANS BY TYPE OF BORROWER - FOR ALL PROGRAMS

Year	Total Loans			Campesinos			Farmers			Cooperatives			Pre-Cooperatives			Associations			Small Enterprises		
	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$	No. of Loans	Members	Amount US\$
1965	890	3,318	2,999	421	421	274	433	433	1,653	19	1,335	530	1	140	15	11	984	431	5	5	95
1966	937	3,510	3,019	458	458	265	433	433	1,495	17	1,498	336	8	468	134	8	640	114	13	13	676
1967	743	8,687	3,566	341	341	200	306	306	1,015	51	5,925	1,762	32	419	122	10	1,693	345	3	3	123
1968	562	7,548	3,840	197	204	146	203	204	1,284	56	2,481	1,255	88	2,997	219	9	1,652	492	9	10	444
1969	679	7,026	6,123	152	153	80	337	337	2,649	66	2,616	1,134	92	1,586	335	10	2,263	880	22	71	1,044
1970	571	23,091	7,204	138	138	84	287	287	1,712	42	19,127	3,354	78	946	232	8	2,514	426	18	79	1,397
1971	369	7,511	4,807	97	97	49	154	154	1,319	42	2,297	1,661	48	535	129	19	4,398	970	9	30	679
TOTAL	4,751	60,691	31,556	1,804	1,812	1,098	2,153	2,154	11,127	293	35,279	10,032	337	7,091	1,186	75	14,144	3,656	79	211	4,458

NOTE: In 1971 the Sheep Program under Special Programs has been omitted because of lack of information.

Commercialization of Rice 1971 is not included because it does not affect the statistics.

SOURCE: Statistics Department - Agricultural Bank of Bolivia

e) Trends in Loans by Type of Borrower

Another trend apparent in the Bank's lending policies is the decreasing number of loans which comprise the portfolio while the average amount of each loan increased annually up to 1970. (See Table VIII). For instance, in 1965 the Bank made 890 loans, by 1970 only 571 loans were granted for all programs. This trend was due to the policy of grouping campesinos into "agrupaciones" or pre-cooperatives and cooperatives whenever possible. (Discussed in Section g).

In 1971, a drastic drop in number and amount of loans will be noticed for campesinos, cooperatives and pre-cooperatives (the peasant sector), while the amount of funds for commercial farmers only dropped slightly and the funds for associations of large farmer nearly doubled. This change in 1971, which will be accented even more strongly in the data for 1972, when available, is due to the bank trying to come to terms with the dichotomy in its institutional nature (discussed in Section k). The Bank from its 1963 statutes is by nature a development bank and must give primary consideration to the campesino when allocating funds. The Bank does make a large proportion of loans to this group. In mass, however, these loans are a small portion of the total value of the loan portfolio.

According to the analysis of Aurelio Fernández Diaz, between 1964 and 1971, 2107 campesinos received loans under the Regular and Special Lines of Credit which corresponds to 38.5% of all loans approved. However, these loans only amounted to 3.5% of all funds loaned out. As can be seen, the funds of the bank benefited most the cooperatives, the ranchers, commercial farmers and associations in that order.

TABLE IX - LOANS BY THE AGRICULTURAL BANK BY TYPE OF BORROWER
1964 - 1971, IN US\$

Type of Borrower	Number	%	Amount	%
Campesinos	2,107	35.8	1,102,750	3.5
Farmers	1,974	33.5	4,812,000	15.4
Ranchers	782	13.3	8,891,916	28.4
Farmer-Ranchers	345	5.9	2,583,000	8.3
Cooperatives	232	3.9	9,635,916	30.8
Associations	448	7.6	4,245,166	13.6
TOTAL	5,888	100.0	31,270,748	100.0

SOURCE: Study by Aurelio Fernández Diaz. ^{19/}

^{19/} Banco Agrícola de Bolivia. Estudio sobre las Causas de Morosidad de los Préstamos. Aurelio Fernández Diaz y Asociados, La Paz, June, 1971. Annex "3-1", page 18.

TABLE X

VALUE OF LOANS - BY TYPE OF BORROWER AND REGION - FROM JULY 1, 1964 TO JUNE 30, 1971

30a.

Regional Agencies	1		2		3		4		5		6		T O T A L	
	No.	US\$	No.	US\$										
Santa Cruz	170	165,750	372	1,628,250	187	1,907,830	165	1,659,500	84	5,538,420	94	2,528,330	1,072	13,428,080
Cochabamba	396	234,670	413	1,195,000	9	75,000	8	138,750	31	1,136,160	36	379,830	893	3,159,410
Beni - Pando	2	1,420	15	82,910	353	6,260,000	29	206,080	2	9,170	-	--	401	6,559,580
La Paz	365	174,250	201	549,090	39	426,750	8	46,420	81	2,347,660	145	629,670	839	4,173,840
Oruro	225	99,580	30	99,090	-	--	11	108,920	10	102,920	27	227,170	303	637,680
Chuquisaca	252	117,340	278	356,750	29	170,000	103	286,330	9	69,500	31	213,080	702	1,213,000
Potosí	210	74,580	337	414,160	-	--	-	--	10	314,750	75	178,580	632	982,080
Tarija	491	235,410	319	470,920	3	24,250	17	157,410	9	133,000	40	103,500	869	1,124,500
		<u>1,103,000</u>		<u>4,796,170</u>		<u>8,863,830</u>		<u>2,603,420</u>		<u>9,651,580</u>		<u>4,260,170</u>		<u>31,278,170</u>

SOURCE: Statistics Department - Agricultural Bank of Bolivia.

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f) Trends in Loans by Region and Type of Borrower

As will be seen from Table X, over 50% of all loans to individual campesinos were concentrated in the departments of La Paz, Cochabamba and Tarija, while the departments of Santa Cruz and Beni only received 8% of these loans notwithstanding the fact that these lowland tropical regions have received the major attention of the Bank in the last 17 years. Table VII showed that 63.9% of all the Bank's resources in the period 1964-1971 had been channeled to these departments. These two facts together show an almost total neglect of the individual campesino in the strategically important tropical lowland areas.

g) Intended Role of Cooperatives and Pre-cooperatives in Agricultural Bank's Planning

The Bank's most important objective as defined in its statutes was to give credit to campesinos. As described in this paper, it could also have been one of the more important resources, if progress was to be made in the traditional areas. The bank was quite aware that its administrative costs for small loans had been prohibitively high and that it lacked the kind of organization to take care of the credit needs of thousands of small farmers. The average size of loan that the Bank must make to cover the costs of granting and servicing a loan was calculated to be \$us. 6,000 by Fernández Diaz 20/. The average size of all loans made to individual campesinos between 1964 and 1971 was only \$us. 523. 21/

The Bank was faced with the following choices: (1) to increase interest rates on small loans to cover the added costs; (2) subsidize small loans through earnings on large loans, but restricting the number of small loans to those that could be carried from bank earnings; (3) make money available from exterior sources (outside the bank's earnings) to subsidize the extra costs on small loans; and (4) organize cooperatives in which farmers assumed most if not all of the responsibility for approving loans and collecting debts among themselves, thereby reducing the cost of administering the loans.

20/ Banco Agrícola de Bolivia. Estudio sobre el Costo de los Préstamos 1971-72. Aurelio Fernández Y Asociados, La Paz, Page 30.

21/ Banco Agrícola de Bolivia. Estudio sobre las Causas de Morosidad de los Préstamos, Junio 30, 1971. Aurelio Fernández y Asociados, La Paz, Appendix "3-1".

The period 1965-66 can be described as the period when choice (2) was selected. The period 1967-69 was when solution (4) was tried. Since 1970, there has been considerable disillusionment among bank officials as to the solution to the problem of giving credit to campesinos. The Bank officially suggested that since credit to campesinos has such a large social development and political component, a separate institution such as a Rural Development Bank should be set up with funds that can permanently subsidize credit to the campesino sector.

h) The Bank's Experience with Cooperatives

The Bank's faith in cooperatives as a solution for getting credit to large numbers of campesinos was extremely short lived for the following basic reasons:

- (1) The possibility for making loans to cooperatives depended on the efforts of other institutions to bring such cooperatives into being. Unfortunately, the government's support for such activities was very limited.
- (2) Cooperative formation was given every encouragement, but little if any training or instruction was provided in order that the members might be able to take an active part in the management of their cooperative. The cooperatives that were promoted were not based on sound social development principles, but were formed solely in order to receive credit from the Bank.
- (3) Cooperatives will not succeed unless there is sufficient leadership and managerial skill to make them work. In the Bank's experience credit was often abused through bad management of the cooperatives or sought when there was no means of producing an income to repay the loan.
- (4) In the management vacuum that developed many cooperatives were controlled by unscrupulous "sindicato" or political leaders, who attracted by the new source of funds, manipulated the cooperatives for their own ends, (see case study on "Cooperativa integral Yacani"). Money was often divided up with no details of to whom the money was given. When the bank tried to take action to recover its money, it found that the former management committee had disappeared and that the new committee would not accept responsibility for what had happened to the previous funds. 22/

22/ René Fernández. Agricultural Extension Agent, Province of Arani, Cochabamba - Personal Interview in July 1972.

- (5) Acquiring credit funds for cooperatives became an important political game. In general, it could be said that in regions (La Paz and Cochabamba), where sindicato leaders could exert the greatest political pressure on the government, was where the greatest amount of credit funds were allocated. Delinquency over repayment became common place. As governments changed so rapidly (see Introduction), pledges of political support by the syndicate leaders could be given in exchange for a new credit or rescheduling of the old loan. The Bank, as a State Institution under direction of the government, was unable to resist these pressures.

One point in Table X should be clarified. Santa Cruz is shown as the department with the largest number of cooperatives (84) and by far the largest amount in value of loans. Most of these cooperatives were formed by large cotton and sugar cane growers. Campesino cooperatives are only a small minority in this department. (See Case Study - Cooperativa El Tajibo).

The very high percentage of failure of these cooperatives has complicated the educational and promotional work with existing cooperatives and jeopardized future success. The success of cooperatives depends on the favorable attitude of the rural people. Unfortunately, except for a few cases, the names of cooperatives and credit have been discredited and they are considered by the rural people as the setting that allows unscrupulous opportunists to take advantage of humble peasants.

i) Repayment Record of the Bank

It is with this subject that judgement can be passed on the success or failure of a credit program. The discussion will be divided as follows:

(1) Loans rescheduled by Type of Borrower

According to the study of Fernandez Diaz ^{23/} of a total of 5,888 loans for \$31,270,500 approved between 1964 and 1971, 2,896 loans for a total of \$15,844,666 were rescheduled. This represents 49.2% and 50.6% respectively, of the number

^{23/} Banco Agrícola de Bolivia. Estudio Causas Morosidad, Appendix "3-1".

and amount of loans approved. The following table demonstrates the performance of each type of borrower. It will be noted that the campesinos have the highest percentage by value of rescheduled loans, 77%, and the cooperatives have 54.3%.

TABLE XI - LOANS RESCHEDULED BY TYPE OF BORROWER - 1964-1971

Av. Size of Loan Rescheduled	Type of Borrower	Loans Rescheduled		No. of Loans Approved	
		No.	Value	No.	Value
11,695	Ranchers	449	5,251,083	57.42	59.05
48,483	Cooperatives	108	5,236,250	46.55	54.34
2,392	Farmers	959	2,294,000	48.58	47.67
6,185	Rancher/Farmers	182	1,126,000	52.75	43.59
5,815	Associations	187	1,087,416	41.74	25.62
840	Campesinos	1,011	849,916	47.98	77.07
		2,896	15,844,666	49.18	50.67

SOURCE: Study by Fernández Diaz, Appendix "3-2".

2) Delinquent Loans by Type of Borrower

Here it will be noticed that the campesinos have by far the lowest delinquency rate by value and number 6.49% and 10.1%, respectively, which would indicate that they were able to take advantage of having their loans rescheduled. It will also be noticed that the cooperatives had the second highest delinquency rate by value and the highest in numbers and did not take advantage of having their loans rescheduled, confirming the reputation that cooperatives have acquired.

TABLE XII - DELINQUENT LOANS BY TYPE OF BORROWER - 1964 - 1971

Av. Size delinquent Loan	Type of Borrower	Delinquent Loans		No. of Loans Approved	
		No.	Value	No.	Value
1,118	Ranchers	215	2,405,833	27.49	27.06
25,222	Cooperatives	73	1,841,250	31.47	19.11
2,554	Farmers	254	648,750	12.87	13.49
3,567	Associations	125	445,916	27.90	10.51
5,733	Rancher/Farmers	75	430,000	21.73	16.65
334	Campesinos	214	71,583	10.16	6.49
		956	5,843,332	16.24	18.69

SOURCE: Study by Fernández Diaz, Appendix "3-3".

Reference should be made to the very high rescheduled and delinquent loan percentages of the cattle ranchers. This is due almost entirely to political reasons. Under the influence of the powerful "Association of Ranchers of the Beni" ranchers have felt reasonably secure from legal action against them by the Bank on their delinquent loans 24/. They have long been campaigning for lower interest rates. The high percentage of rescheduled and delinquent loans is their way of lowering the interest rate. The bank has been powerless to take action against this group, who on a number of occasions have threatened the government with meat boycotts of the urban centers should action be taken against them 25/.

(3) Repayment Record by Credit Line

Of particular importance here is the bad experience of the Bank with the Colonization and Rural Development programs channeled through cooperatives in which 99.73% and 66.53% in value of the two loans have been rescheduled. (See Table A 4).

The percentage in value of the colonization loan that is delinquent is only 1.6% (Table A-5), but this does not show the true picture that the Bank has almost no hope of recovering any of the \$us. 2,600,000 loaned out. (See Case Study--Cooperativa Integral Yapacani). This means a very severe decapitalization of the Bank and a considerable aversion of the Bank to involve itself with any more credit programs with external financing that have a large social development component.

(4) Repayment Record by Type of Production

The general impression is that no type of agricultural production is particularly profitable or shows a good repayment

24/ Banco Agrícola de Bolivia: Estudio sobre las Causas de Morosidad de los Préstamos -Aurelio Fernández Díaz y Asociados, Page 30.

25/ End of Tour Report - USAID Contract, Donald G. Tailby, Page 8.

record except cotton. The average percentage of loans for all types of agricultural production that were rescheduled is 50.6% by value (Table XII). Only cotton shows a very low rate of 3.5% by value for rescheduled loans. The following table (XV) derived from Tables XIII and XIV shows the differential treatment as regards the initiation of legal action for recovery of funds for the various types of production as a percentage of delinquent loans. Of particular significance is the heavy punitive action taken against cacao 100%, rice 99%, potatoes 91%, wheat 89%, coffee 77% and sheep 71%. All these crops and activities are almost exclusively campesino. In contrast, cotton 8%, beef production 24%, milk production 34% and wine production 35% are all activities dominated by large commercial farmers. The interpretation of these figures could be that the campesino has little political power to wield, while the large commercial farmers can take political action to intimidate the bank from taking legal action against them. The consequences of this are serious for the reputation of the bank with campesinos and hopes for rapid production expansion in the traditional areas from the various government projects, such as wheat. The Bolivian campesino usually depends on harvest income to pay for farm input supplies. Crop failure due to the various climatic hazards, discussed in the introduction, are the main cause for loan delinquency by campesinos.

The use of fertilizers and improved seed varieties creates no assets for loan repayment until the crop is harvested and ready for sale. If the crop fails, the farmer is immediately faced with total loss of his working capital plus a very punitive attitude from the Bank which wants to embargo his few remaining assets such as farm animals, pledged as collateral.

Faced with this prospect the campesino would rather not gamble with modern inputs. Such limitations defer the modernization process. A more understanding approach by the Bank (economically unfeasible) or a government sponsored crop insurance program would lessen the very legitimate and widely voiced fears of the campesino of taking the risk of modernizing his production methods by using credit.

j) Criticism of the Bank

In defense of the Bank, it is accepted that one of the main inconveniences encountered by the Bank to reach the small

TABLE XIII
 RESCHEDULED LOAN REPAYMENTS - BY TYPE OF PRODUCTION
 FROM JANUARY 1st, 1964 TO JUNE 30, 1971 (90 MONTHS)

Av. Size of Loan in US\$	Type of Production	Loans Rescheduled		% of Original Loan	
		Number	Value US\$	Number	Quantity
12,833	Beef cattle	545	6,994,417	59.89	65.92
2,180	General Agriculture	862	1,879,333	50.53	66.33
12,205	Sugar Cane	136	1,659,833	31.63	35.48
15,718	Rice	65	1,021,667	34.39	63.81
4,586	Poultry	182	834,667	57.05	68.93
7,016	Dairy	117	820,917	40.48	52.11
373,208	Commerc. of rice	2	746,417	40.00	81.45
1,407	Potatoes	339	476,917	54.24	58.76
1,765	Wine Production	169	298,250	65.25	62.37
1,556	Fruit Production	138	214,750	48.25	48.91
2,204	Pigs	78	171,917	55.71	64.27
2,917	Sheep	45	131,250	29.22	30.66
32,021	Commerc. of Coffee	4	128,083	44.44	15.15
9,417	Cotton	12	113,000	17.91	3.50
1,237	Horticulture	77	95,250	53.10	57.49
1,955	Wheat	44	86,000	46.81	46.97
15,950	Cacao	5	79,750	100.00	100.00
1,309	Coffee	57	74,583	45.97	52.74
930	Various	<u>19</u>	<u>17,667</u>	15.70	5.83
5,471	TOTAL	2,896	15,844,667	49.18	50.67
		=====	=====		

Source: Study by Fernandez Diaz, Appendix 5-2

TABLE XIV DELINQUENT LOANS - BY TYPE OF PRODUCTION

AS OF JUNE 30, 1971

Av. Size of Loan US\$	Type of Production	<u>Delinquent Loans</u>		<u>% of Original Loan</u>	
		<u>Number</u>	<u>Value US\$</u>	<u>Number</u>	<u>Quantity</u>
10,339	Beef Cattle	266	2,750,167	29.23	25.92
120,854	Cotton	8	966,833	11.94	29.92
4,984	General Agriculture	194	569,500	11.37	20.10
16,362	Sugar Cane	32	523,583	7.44	11.19
3,153	Rice	69	217,583	36.51	13.59
4,903	Dairy	36	176,500	12.45	11.20
2,826	Poultry	57	161,083	17.87	13.30
1,000	Potatoes	100	100,000	16.00	12.32
1,243	Fruit Production	49	60,917	17.14	13.88
1,644	Wheat	37	60,833	39.36	13.23
3,074	Coffee	17	52,250	13.71	36.95
1,890	Sheep	25	47,250	16.23	11.10
20,833	Commerc. of Grains	2	41,667	25.00	17.24
13,958	Commerc. of Coffee	2	27,917	22.22	3.30
1,390	Wine Production	19	26,417	7.33	5.53
8,750	Cacao	2	17,500	40.00	21.94
1,199	Pigs	13	15,583	9.29	5.83
769	Horticulture	9	6,917	6.21	4.17
1,096	Various	<u>19</u>	<u>20,833</u>	15.70	6.88
6,112	TOTAL	956	5,843,333	16.24	18.69
		===	=====		

Source: Study by Fernandez Diaz, Appendix 5-3

TABLE XV DELINQUENT LOANS UNDER LEGAL ACTION

BY TYPE OF PRODUCTION

AS OF JUNE 30, 1971

Av. Size of Loan	Type of Production	Loans under Legal Action		% of Original Loan	
		Number	Value US\$	Number	Quantity
9,705	Beef Cattle	69	669,667	7.58	6.31
13,812	Sugar cane	27	372,917	6.28	7.97
2,633	General Agriculture	130	342,250	7.62	12.08
3,431	Rice	63	216,167	33.33	13.50
2,434	Poultry	38	92,500	11.91	7.64
1,082	Potatoes	84	90,917	13.44	11.20
18,500	Cotton	4	74,000	5.97	2.29
4,232	Dairy Production	14	59,250	4.84	3.76
1,938	Wheat	28	54,250	29.79	29.63
8,067	Coffee	5	40,333	4.03	28.52
2,344	Sheep	15	35,167	9.74	8.28
2,244	Fruit Production	15	33,667	5.25	7.67
13,958	Commerc. of coffee	2	27,917	22.22	3.30
8,750	Cacao	2	17,500	40.00	21.94
1,167	Pigs	9	10,500	6.43	3.93
2,292	Wine Production	4	9,167	1.54	1.92
542	Horticulture	2	1,083	1.38	0.65
1,600	Various	<u>10</u>	<u>16,000</u>	8.26	5.28
4,152	TOTAL	521	2,163,250		

Source: Study by Fernandez Diaz, Appendix 5-5

TABLE XVI
 DIFFERENTIAL TREATMENT OF DELINQUENT LOANS BY TYPE OF PRODUCTION
 JANUARY 1, 1964 TO JUNE 30, 1971

Type of Production	% Delinquent Loans of Total Loan Approved	% Loans under Legal Action of Total Loans Approved	% of Delinquent loans under Legal Action
Beef production	25.9	6.31	24
Cotton	29.9	2.3	8
Agriculture general	20.1	12.1	60
Sugar cane	11.2	7.9	71
Rice	13.6	13.5	99
Milk production	11.2	3.8	34
Poultry	13.3	7.6	57
Potatoes	12.3	11.2	91
Fruit production	13.9	7.7	55
Wheat	33.2	29.6	89
Coffee	36.9	28.5	77
Sheep	11.1	8.28	75
Cereal Commerc.	17.2	-	-
Coffee Commerc.	3.3	3.3	100
Wine production	5.5	1.92	35
Cacao	21.9	21.9	100
Pigs	5.8	3.9	67
Horticulture	4.2	.65	16
Various	6.9	5.28	77

Source: Derived from Tables XIV and XV.

individual farmer or campesino is that it must apply its loan regulations with little or no flexibility in order to avoid increases in its delinquent loan portfolio and basically to comply with its international loan agreements. Also, the general laws governing the Bank say that the Bank will coordinate loan policy with the Ministry of Agriculture. On the other hand, the Bank is an independent institution. The conflict between these two assertions becomes evident in the field in cases in which the Ministry of Agriculture says it wishes to stimulate the production of a given crop (often wheat) in a given area of small producers, and these small producers do not meet eligibility criteria of the Bank. However, various criticisms can be made against the Bank:

- (1) In the study on the causes of loan delinquency by Aurelio Fernández Diaz, it was found that provincial agents of the Bank only stayed an average of 17 months in any one agency before being transferred 26/. If one is correct in thinking that at least 6 months are needed to familiarize the agent with the province, and that the last six months are needed for a proper handover and orientation of the new agent, then only 5 months are left for effective work. To be successful an agent should be seeking out good borrowers and good investment prospects in his area. He should be so familiar with his province that he will be adept at reviewing an application and be able to determine the pay-off prospects of the loan.

Five months is hardly long enough to get this expertise and it is no wonder that agents authorize loans, which must subsequently be extended, or go bad.

- (2) The provincial agents are the contact with the clients of the Bank. These agents handle relatively large amounts of funds. Yet these men are underpaid. The temptation, therefore, to accept "gifts" or "kick-backs" to speed up loan processing is present and commented on. Also, low pay is associated with low incentive.
- (3) Because of the bureaucracy of the Bank, loan requests are processed extremely slowly. There are frequent complaints of the farmer finding that by the time his loan is approved, he is past the point in the crop year, when the loan will be of use to him.

26/ Banco Agrícola de Bolivia. Estudio sobre las Causas de Morosidad de los Préstamos. Junio 30, 1971. Aurelio Fernández y Asociados. La Paz. Page 10.

k) Dichotomy in the Bank's Nature

The Bank is the only agricultural development bank in the hemisphere which receives no subsidy from the central government. The Bank must pay its own way. Yet, because it is a government bank, it does not have a free hand to operate on a strictly commercial basis. Many of the branches maintained by the Bank do not cover their costs, particularly in the traditional areas. These branches are maintained because the concept exists that the Bank, using the primary agricultural credit institution in the country, should blanket the rural sector with its services.

The Supreme Decree under which the Bank operates says the Bank must give primary consideration to the campesinos when allocating loan funds. As stated on page 31, the study by Fernandez Diaz shows that on all loans under \$us.6,000, the interest earned does not cover the cost of granting and servicing a loan. Also, the study on loan delinquency by the same author showed that over the period 1964-1971 the average size of loan to campesinos was only \$us. 523. As can be seen, the Bank is not in a good position to provide the type of small loan needed by the campesino, particularly when this loan must be supervised. Operating realities are in direct opposition to the sentiment of the Supreme Decree.

1) Summary of Bank's Dilemma

In the Bank's experience, campesinos are not worthwhile customers for credit. However, the social benefits from helping the mass of campesinos through credit to introduce new practices and raise their level of output and living are very evident to the government. A decision has to be made, therefore, as to whether the Bank is to become a true development bank, or whether the commercial banking orientation that now prevails should be given more emphasis. The Bank itself would like to be absolved from all responsibilities for the campesino sector. They have suggested to the government the creation of a "Rural Bank", receiving a subsidy, which should have total responsibility in this area.

m) Ministry of Agriculture: Funds for Agriculture in Special Areas

In a move to partially fill the gap left by the Agricultural Bank's reluctance to extend further credit to the campesino sector, \$us.390,000, derived from the sale of a donation of

Argentinian wheat to Bolivia, was placed in 1971 in a fund for credit to agriculture in the traditional areas. The fund was to be managed by the Agricultural Bank on a fideicommission basis with all loan approval and supervision to be handled by a special section in the Ministry of Agriculture. The Ministry of Agriculture hoped to prove that:

- (1) Credit extended to campesino cooperatives, when used for profitable lines of production and given good technical support and supervision, could be profitable. Thereby demonstrating that campesinos are worthwhile customers for credit in contrary to the Agricultural Bank's experience.
- (2) That concerted support of the campesinos from the cooperative and extension divisions of the Ministry would show that the Rural Cooperative Bank proposed by the Agricultural Bank and the government could be a viable institution for development of the campesino sector.

After 3 years, in 1974, if the present experiment is successful, it is proposed that the fund be used as a base for the creation of a Rural Cooperative Bank. The fund has been operating less than a year, so no judgement can be made on success or failure. However, political pressure in the allocation of funds can already be noted. Loans are given to cooperatives at 6% interest for an eight month period. The cooperative charges its members 8%, and 2% is kept for capitalization of the cooperative.

E. National Federation of Savings and Loan Cooperatives

The Federation of Credit Union Cooperatives is one of the few private, non-banking institutions making some agricultural production credit available to campesinos. Organized in 1962 to coordinate, assist and promote the credit union cooperatives which had sprung up in most of the major cities of Bolivia, the Federation since that time has sought to expand its membership through the promotion of cooperatives in the larger towns and villages of the rural areas of Bolivia. This trend was intended to change the orientation of the Federation from one which emphasized consumer-oriented urban cooperatives to one emphasizing production-oriented agricultural cooperatives in the neglected rural areas. The reorientation was considered necessary if the Federation was to continue its spectacular growth (1962: 5 coops, 1966: 139 coops. 57,544 members, \$b. 51,578,660 (US\$4,298,221) savings). This was because consumer-oriented cooperatives were not creators of wealth

and most of the production resources and production possibilities were considered to be in the rural areas. The Federation now has 84 cooperatives in rural areas out of a national total of 210 cooperatives.

The Federation first became active in agricultural credit in 1967 with their "directed credit for agricultural production program" under the impetus of two USAID local currency loans, one for \$350,000 for wheat production and one for \$65,000 for rice marketing. The funds, provided at 4% interest per annum for 20 years to the Federation, have been disbursed to the member cooperatives according to the following schedule:

TABLE: XVII USE OF DIRECTED CREDIT FUNDS IN US\$

	<u>W H L A T</u>		<u>R I C E</u>		
1967		\$13,411	1967	\$ 1,666	
1968		70,627	1968	3,750	
1969		7,475	1969	11,916	
1970		--	1970	4,458	
1971		--	1971	--	
1972		--	1972	--	
		-----		-----	
TOTAL		\$91,513		\$ 21,790	
		=====		=====	
Production	81.10%	\$74,224	Cultivations	24.07%	\$ 5,262
Machinery			Harvest	75.93%	\$ 16,528
& Bullocks	<u>18.90%</u>	<u>\$17,289</u>			
	100.00%	\$91,513	100.00%	\$ 21,790	
	=====	=====	=====	=====	

Source: Federación Nacional de Cooperativas de Ahorro y Crédito.

The credit risk for these programs was divided eventually between the Federation and its member cooperatives, the cooperatives receiving the funds at 8% interest per annum and re-lending to their sub-borrowers at 12% for one (1) year. The sub-borrowers for the program funds were first approved at the cooperative level by the credit review committees and then once again by the Federation's credit committee for program loans. This credit review was considered vital for providing competent technical assistance in lending policies to the cooperatives.

The funds for the wheat program were provided for as follows: the Federation provided 55%, the cooperative 35%, and the individual member receiving the credit - 10%. The individual members were also required to make a forced saving (as paid in capital with their cooperative) of 10% of the credit received from their cooperative. Due to these restrictions, the production loans were quite small. The wheat program credit, for example, reached 279 sub-borrowers in 1967-68, and 434 in 1968-69, for an average loan of US\$ 118 per member. Based on the number of hectares reportedly brought into the program, this sum financed 1.7 hectares of wheat land per sub-borrower.

This program, which was greeted with considerable enthusiasm in 1961-68, had been abandoned at the end of 1969 on the advice of the Federation. The reasons for the desinterest of the Federation and the losses of the farmers and cooperatives with the wheat loans are generally cited as:

1. Problems caused by droughts and frost in the wheat producing areas.
2. Lack of technical assistance provided to the farmer in the application and use of the new technical inputs, such as fertilizers.
3. Lack of a firm market for the wheat produced. The flour mills in Cochabamba had promised to give their full support to the wheat program, however, at harvest time their silos were found to be full of imported wheat.

Of fundamental importance, however, was the fact that the Federation was not equipped to provide member cooperatives with the technical assistance required by the credit program. The entire supervisory staff of the Federation consisted of an Agronomist in charge of the directed credit program and four fieldmen with little agricultural experience.

Very wisely the Federation abandoned the wheat program until it could be shown that participation in the program could be profitable to the various cooperatives involved. Surprisingly, the Federation reported a low default rate on the wheat loans. Since the Federation received a long-term credit for the program, it was able to reschedule the cooperative debts. As of June 30, 1972, only US\$ 12,510 out of the original loan of US\$ 65,000 was outstanding. Not one cooperative is in danger of dissolution and all of them have acknowledged responsibility for their debts. The Federation has every confidence in recuperating all credit extended. To explain this very unusual and praise worthy experience, when compared to other Bolivian experiences with credit to cooperatives, reference must be made to two factors:

1. The forced saving by each participant, as paid-in capital with the cooperative of 10% of total value of the credit received, gives the cooperative member a much stronger loyalty and commitment to his cooperative.
2. The wheat program was not the only line of credit received by the cooperative members. At the same time as they were receiving credit from the wheat program, they were receiving the usual credit facilities of their own cooperatives and the Federation. The profits made on their other investments went to pay off their wheat program credits.

The rice program met considerably fewer difficulties since it aimed mainly at providing the campesino with working capital for the harvesting and

marketing of his crop. See Table XVII. This type of loan is much safer since it is based on actual production to be marketed and not dependent on such factors as climatic conditions and proper application of new inputs. The financial requirements of a limited marketing program of this nature are considerably less than for a production program, and the accrued benefits to the farmer are significant. The rice program was dropped, however, in 1970-71 because the participating cooperatives in Santa Cruz department stopped growing rice, because of low returns, and devoted themselves to sugar cane, and later, cotton production, where other credit programs were available from sources such as the Agricultural Bank.

In summary, the Federation's first programs in agricultural credit have not been very successful. However, the Federation seems committed to the idea of an agricultural credit program. In January 1972, the Federation submitted to representatives of the World Cooperative Movement a list of credit needs of cooperatives with potential agricultural programs for the total of US\$ 945,833 and a list of actual needs for projects approved but not capable of being funded for US\$ 26,007.

The strength of the Federation and its member cooperatives is their financial responsibility and management ability when compared to other agricultural production or marketing cooperatives in Bolivia. The Federation offers such facilities as Central Savings and Loan Services, owns its own printing facilities and publishes a monthly news bulletin for the movement and a quarterly magazine. The Federation carries a complete range of accounting, educational and promotional supplies, offers credit union technical counselling, promotes educational and training programs, has an organization and expansion service, offers an insurance service on loans and savings in individual credit unions, and a bonding insurance service for managers and employees handling funds. And finally, it provides an efficient audit service for the cooperatives and keeps the misuse of funds or authority to a minimum by the monitoring of monthly financial reports on Federation programs submitted to the audit department by the various cooperative management committees. When the services provided by the Federation to the individual cooperatives are compared to the almost total lack of support and assistance given to other types of cooperatives, their comparative success can be understood.

However, one note of caution must be made. Up to the present date, the credit union movement has not clearly shown its ability to operate in the agricultural production field. The present 84 cooperatives in rural areas are in some way an extension of the urban cooperative movement. It is estimated that only a small percentage (10%-20%) of rural cooperative credit in fact goes towards agricultural activities, with the exception of loans under special Federation programs; e.g. wheat.

The majority of the credit goes towards consumption loans or investment in housing, trucks or merchandise. Since each of the credit union cooperatives are autonomous entities, they do not report on their individual accounts or submit their loan portfolios to the Federation for review. The credit union cooperatives in the rural towns and villages in fact draw their membership from the bourgeoisie rather than from the campesinos. Up to the present, the credit union movement has not taken roots with the truly rural population.

F. Yacimientos Petrolíferos Fiscales Bolivianos (YPFB)

The government owned petroleum company (YPFB) started a promotional campaign in 1968 to develop an expanded market for fertilizer, because of the proposal to build a nitrogen fertilizer plant in Santa Cruz. The fertilizer was imported in bulk, delivered direct by truck to the campesino in his village and sold at about 20% below the prevailing commercial retail price, on credit, and with no interest charged.

The only condition was that the money should be repaid to YPFB via the Agricultural Bank when the crop was sold. Farmers received an average of four bags of fertilizer per hectare. This recommendation was based on soil tests conducted in cooperation with the Ministry of Agriculture. In conception, the plan was extremely advantageous to the campesino, when compared to the difficulties of transportation, cash payment, etc., normally experienced by the campesino in buying fertilizer from commercial houses. However, the results after 4 years of the program, 1968-72, are far from satisfactory and the program has been abandoned. The statistics as far as they are available are as follows:

TABLE XVIII - FERTILIZER PROMOTION CAMPAIGN 1968-1972
YACIMIENTOS PETROLIFEROS FISCALES BOLIVIANOS

	S u c r e		P o t o s i		T a r i j a			
	Summer		Summer		Winter		Summer	
	Total Loaned	% Re- covery						
1968-69	5,500	50	4,441	53	-	-	2,935	22
1969-70	15,448	53	12,019	57	4,758	74	2,924	72
1970-71	20,838	30	1,878	92	4,331	78	15,670	19
1971-72	3,708	17	6,497	55	16,291	78	-	-
	45,494		24,835		25,180		21,529	

Source: Fertilizer Division, YPFB

The overall repayment rate of 57.8% from an investment of US\$ 117,038 is very disappointing. The reasons advanced are:

1. Very little supervision was given to the campesinos after the handing over the fertilizer. There was little follow up on the growing crop to see that maximum possible yields were obtained.
2. No steps were taken to verify the profitability and assured markets for the increased crops harvested. (In Cochabamba, Sucre, and Tarija, there were marketing difficulties with wheat).

The very consistent repayment records for the winter program in Tarija should be noted. This program only worked with land under irrigation.

G. Commercial Credit

Credit made available by the commercial houses to the large farmers for the purchase of agricultural inputs is an important element of the total credit operating in the agricultural sector.

However, all commercial houses except one reported that all sales to campesinos were strictly on a cash basis. The reasons advanced for this were:

1. The campesinos had no guarantees of any value to offer to secure their loans.
2. The commercial houses had their branches in the Department capitals. From this urban setting it was very difficult to get to know the rural campesino clients and to know their credit worthiness.
3. The campesinos lacked experience in using farm credit. For short-term gain, the campesinos would refuse to repay their credits and try to get credit for fertilizer, etc., from another commercial house.
4. The costly experience that the commercial houses have already had with credit given to campesinos. One commercial house reported US\$ 150,000 paralyzed in delinquent loans for fertilizer in 1971. Campesinos and cooperatives were considered responsible for 90% of this sum.
5. The recovery costs of credit previously given to campesinos had been prohibitively high.

The hope of moving more fertilizer and other inputs to the rural areas was seen by some commercial houses to lie in the expansion of a consignment system with small independent distributors or successful cooperatives who ran "country stores" which stocked

agricultural inputs for sale to campesinos. There are probably not more than a hundred stores stocking agricultural inputs in Bolivia, the bulk of the smaller stores being concentrated in the Cochabamba valley and in Northern Santa Cruz.

The advantages of this system was seen by the commercial houses as follows:

1. The small retailer takes the credit risk, not the commercial house.
2. The owner of the small "country store", or the cooperative know the people in their area intimately and would not give credit to bad risks.
3. Within the closed circle of the village community very considerable group sanctions could be applied to the campesino to get repayment.
4. The owner of the store or the cooperative was financially solvent enough that meaningful guarantees, such as truck or title to an urban building could be offered to the commercial house to secure the credit extended.

The potential for increased business was seen as so considerable, that one commercial house "Servicio Agricola Comercial Ltda.," had six university trained agronomists and four jeps for promotional work with these country stores. The agronomists were available to the country stores to give advice on the use of various insecticides, fungicides, etc., and to introduce new products. The goods on consignment from the commercial house were normally interest free for 60 days. The same retail price is maintained at the commercial house and at the country stores to encourage the campesinos to buy in their own community.

Another commercial house "Grace Ltd." relied more on "rescatadores" who can be variously described as "produce middlemen", "money lenders" or "loan sharks", depending on your point of view. These men make the major part of their income by bulking up small lots of the campesinos' harvest, such as potatoes, and then moving it in their trucks to the main urban markets for sale. However, these truckers also operated as money lenders so as to be sure that they would be able to commercialize the campesino's harvest. They charge 8-10% interest per month with adequate security, since the loans were usually made in the trucker's village. Most campesinos took loans from the truckers because they did not have adequate funds to complete the crop cycle. Another alternative of the system is for the campesino to sell the standing crop at a sacrifice price to get a credit advance for completing the crop year.

Whatever system was used, the "rescatador" had a very keen interest in the health and yield of the crop. "Grace Ltd." had a large number of clients among the "rescatadores" to whom they gave credit for fertilizer, insecticides, etc. The "rescatador" would then actively promote the use of this profitable technology among his "client campesinos" as part of the credit he gave them. "Grace Ltd." considered these rescatadores remarkably knowledgeable about the technical use of these inputs. This activity by rescatadores as technical innovators was mainly restricted to areas where yield potentials with the new technology were high, such as the Cochabamba valley. The "rescatadores" received their fertilizer, etc., from "Grace Ltd." at sale price, but with six months interest free.

H. Other Organizations Giving Credit to Campesinos

1. DESEC - Centro para el Desarrollo Social y Económico.

DESEC is a private autonomous association which works for the incorporation of the campesino into the main stream of the socio-economic development of Bolivia. It is funded by various international philanthropic organizations such as Freedom for Hunger, Oxfam, etc. It is particularly concerned with the fostering of "grass roots" institutions such as cooperatives that can be of real service to the campesino and serve as a vehicle for his incorporation into the national life.

To foster suitable grass roots organizations, credit is channeled through a sub-organization--ARADO (Acción Agrícola de Desarrollo Organizado). ARADO has had three main programs:

a) in the zones of Punata, Alturas and Mizque of Cochabamba, they have provided from 1966 to 1971 a revolving fund of US\$ 25,000 to cooperatives at 6%. The funds were used as follows:

Hire of tractors	US\$ 5,166
Seeds, fertilizers, insecticides & Fungicides	11,750
Hand Tools	2,600
Dairy Cattle	5,166
Concentrates for dairy cattle	<u>316</u>
	US\$ 24,998

70% of these credits have been cancelled.

b) In the Alturas or high areas of Cochabamba, they sponsored a special seed potato program. In 1969 and 1970, they provided US\$ 20,833 for fertilizers. In 1971, they sponsored a "central" or association of potato producing cooperatives for the supply of fertilizers, insecticides, etc., and for the certification and commercialization of the seed potatoes produced by the 14 associated cooperatives. Credits for US\$ 5,416 were provided to be paid back after the harvest. All but US\$ 250 has been repaid. This debt was rescheduled because of frost damage.

c) In the Department of Santa Cruz, to assist campesino cooperatives, US\$ 6,000 was borrowed in 1966 from the Agricultural Bank for use by the associated cooperatives for potato production. The entire credit was repaid on time.

In 1968 and 1969, US\$ 10,000 and US\$ 58,333 was borrowed from the Bank for working capital for rice cultivation by associated cooperatives. Due to the bad harvests only 40% and 20%, respectively, of the money was repaid. ARADO renegotiated the loan with the Bank for final repayment in 1973.

Opinions of DESEC on their Experiences with Campesino Credit

The capacity for repayment of the campesino depends entirely on the success of the harvest. When harvests were good, DESEC had no trouble with repayment. When the crops failed, generally for climatic reasons, repayment by the campesino proved impossible and he often found himself in a worse position than before he received the credit. The only way to help the campesino to overcome this situation was to give him a further credit. The campesino then found himself burdened with debt beyond his capacity to clear himself in one harvest. Much longer repayment schedules had to be negotiated, if the loan was to be paid back, as in Santa Cruz with the rice growers.

2. Project BOL-68/521 of UN/FAO

The project titled "Improvement of Agricultural Production on the Altiplano" is a joint FAO and UNDP special program with Bolivian Ministry of Agriculture participation. The area chosen for the project was on the shores of Lake Titicaca with a base at the Experimental Station of Belen. It was intended to be an integrated project using foreign technicians and Bolivian counterparts in agronomy, soils, cattle production, credit, cooperatives and marketing to confront the problems of low production, minifundia and rural under-employment in this area of the Altiplano. The campesinos, gathered in cooperatives or pre-cooperatives, were to receive credit from a rotating fund of \$200,000 for seed, fertilizer, insecticides, hand tools and improved

breeding sheep and cattle. In 1970-71, because of delays, only US\$ 5,000 was given out in credit. In 1971-72, 21 pre-cooperatives received US\$ 18,000 in credit. In 1972-73, it is intended to work with 53 cooperatives and pre-cooperatives. No funds have been repaid because heavy frosts in February 1972 almost totally killed the potato crop in which major investments were made.

The very small amount of credit given out in the second year-- US\$ 18,000 out of a total of US\$ 200,000 available -- is attributed to careful selection of types of production and viable pre-cooperatives that could benefit from credit.

V. CASE STUDIES

A. Cooperativa Integral Yapacani, Prov. of Ichilo, Department of Santa Cruz.

A Case History of Directed Credit with Negative Results.

Colonization of virgin lands in the tropical lowlands has long been considered by successive Bolivian governments as the answer to many of Bolivia's problems, namely overpopulation in the rural districts of the valley and Altiplano, unemployment in the declining mining areas, the rural to urban migration, and subsequent social unrest from urban unemployment.

In 1963, the Interamerican Development Bank (IDB) provided funds for large scale colonization by a planned 8000 families on 300,000 Ha. of state lands in the areas of Chimore, Yapacani and Alto Beni. The loan 51TF-BO for US\$.6.5 million was signed between IDB and the Bolivian Development Corporation (BCD) as the body in charge of colonization. In 1964, work on the various projects began; and in 1966, the National Colonization Institute (INC) was created to take charge of and coordinate all colonization activities. Loan 51TF-BO was to be used for infrastructure projects in the colonization areas as well as to cover the cost of moving the colonists, these costs being recoverable from the colonists. It was expected that the settlers would be able to repay their debts over a period of fifteen years.

From the beginning, some of the colonists did not fully understand their obligations and felt that the government owed them this service. IDB also provided a complementary loan 29-SF/BO for US\$.2,600,000 to be used as production credit by the agricultural cooperatives to be formed in the colonization areas.

This case history is principally concerned with the fate of this loan. However, more background information on the use of the loan for US\$.6,500,000 must be given. Attention will now be focused on the Yapacani area.

Selection of Colonists

The publicity program to get recruits for the colonization program made very big promises to arouse initial interest. Unfortunately, few farmers listened to this publicity. The people who were most easily reached with promises of 2 years free food, land, credit, medical supplies, schools, etc., were the urban and mining unemployed. No preparation was done in villages to make farmers more receptive to the publicity. In the end a considerable number

of colonists were urban people with no rural experience. They had a very big adaptation problem with the jungle environment and suffered great hardship in the early years. However, they stayed around long enough to receive the free food for 2 years and the first production credits. Considerable numbers of families then left the colonization area, when these handouts stopped. Their debts were charged to whoever wanted to settle on their abandoned plots.

Selection of Land Suitable for Colonization

Although aerial photographs were available to indicate soil characteristics such as relief, drainage conditions and fertility little use seems to have been made of them, with the result that individual plots were given out in areas subject to flooding, on poor soils, and on steep slopes. Because of this, it became necessary to declare after the distribution of plots in Yapacani that 46% of them were unsuitable for colonization. Up to the present day, no definite measurement of the plots have been made and it is not known if this work will be the responsibility of the Institute of Colonization or the office of the Reforma Agraria. For the preliminary undecisive topographic work, the owner of each plot has been charged US\$.65. Colonists on their own initiative and at their own expense are now employing private topographers to finally delineate the boundaries of their plots.

Water Supply

A total of 89 wells were drilled and pumps installed. As of January 1972, only 10 pumps were working. In some places, the wells were not deep enough, in other they were blocked by fine sand. Eighty-nine per cent of the colonists get their water from streams or home dug wells and only 11% use the drilled well although all colonists are supposed to pay for them.^{27/}

Transportation System

The responsibility of the government according to the BID/CBF contract was to provide the access road to the colony and keep it open at all times. The road from Santa Cruz to Yapacani was asphalted, but the bridge over the Yapacani river was never completed. The internal road Yapacani-Puerto Grether is up to the present day only serviceable during the dry season until about Kilometer 35 and during the rainy season is almost impassable. However, for road construction, each colonist owes US\$.386 to INC.

^{27/} La Vida Agrícola en las Colonias-Comité de Obra Rural. - Distrito Oriental-Iglesia Evangélica Metodista en Bolivia, Kenneth Graber, page 37.

Technical Assistance

INC being a new government service with a large initial budget was forced to receive many political appointees who were given technical positions. Most of these appointees were military men with no technical training. In many instances, the campesinos probably knew more than the technicians about the subjects being discussed. This caused the well trained technicians who had something to offer to be received with total lack of confidence by the campesinos. Some of the advice given proved to be quite uneconomic. Motorized knapsack sprayers were imported for weed and insect control in rice. For weed control, it was found that spraying with herbicide cost US\$ 16.50/Ha. while hand weeding only cost US\$ 5-10/ha. 28/

Bureaucracy also caused considerable losses. For example, chicken production was being sponsored in the colony when a chicken cholera epidemic broke out. Permission to buy vaccine had to be obtained from La Paz. By the time permission was granted, most of the chickens had died.

Summary of Setting Where Directed Credit was Supposed to Operate

1. The colonists felt that the government had misled them with false promises of assistance and had shown bad faith as regards roads, markets for products, health services, etc. They felt that their debts for roads and general infrastructure were unfair since the work had been done in a very expensive and inefficient manner by the INC bureaucracy. The colonists also resented being charged for services they did not want or appreciate and not having a voice in the terms of repayment. They felt that the government owed them these services. Some of the settlers even felt that the government had more than recovered its investment by the increase in the national rice production.
2. From the government's point of view, the colonists in most cases were not living up to their obligations under the original colonization agreement. These mutual accusations created an atmosphere of uncertainty and distrust.

28/ Ing. Zapata - Agricultural Bank representative in Yapacani.

Agricultural Production Credit BID-29-SF

Creation of the Cooperative in Yapacani

It was decided that the production credits would be made available to individual farmers via a cooperative that was to be formed immediately.

The administration of the cooperative was decided upon by the three groups participating as following:

1. BID drew up the overall plan, made the cooperative rules, designated priorities and reserved the right of intervention.
2. The personnel of INC were in charge of the technical supervision of the agricultural production program and in charge of preparing the colonists for the foundation of the cooperative.
3. The Agricultural Bank was responsible for the distribution of the credits and their final recovery.

On the release of the funds, the colonists were informed that a cooperative would be formed and that they would obtain production credit on the payment of US\$ 80 for inscription in the new cooperative. Little other work was done to prepare the colonists so that they could understand or take part in the management of their cooperative. BID and the Agricultural Bank appointed the manager and accountant of the cooperative although the Bolivian cooperative law states that these positions as well as the administrative committee should be chosen by the general assembly of the members of the cooperative.

BID gave the credit to the Agricultural Bank at 4% interest and the Agricultural Bank gave it at 6% to the cooperative. The colonists received their credit at 8%. Eight per cent interest per annum can be considered an extremely cheap rate of interest in Bolivia, and particularly, in the colonization areas where "rescatistas" or produce middlemen charge 12% to 15% per month.

These credits were used for production of rice, maize, bananas, etc., by individual colonists, but by the cooperative for a cooperative consumer shop, rice mill, 3 saw mills and a large amount of small agricultural machinery such as knapsack motor sprayers, power saws, etc., all of which rapidly broke down. In the management of these appendages of the cooperative began to appear the problems of the cooperative.

The colonists were recruited from all over Bolivia and were mostly extremely distrustful of each other. This lack of unity allowed unscrupulous colonists with experience in urban and rural syndicates to gain control of all the committees elected by the members of the cooperative. These leaders were extremely good "luchadores" or politicians against what were considered unilateral and arbitrary decisions by the alien manager and accountant of the cooperative. For example, the manager appointed by BID and Agricultural Bank was reported to have bought cows for the cattle loan at US\$ 65 and sold them to the colonists at US\$ 125. The veterinarian of the INC and himself collecting the difference. In the battle for control of the resources of the cooperative (US\$ 500,000 was the final debt), these syndicate leaders gained the upper hand and the representatives of the Bank and INC were discredited. However, in the meantime, the reason for originally forming a coop was entirely lost sight of. What credit advance to colonists, that was paid back to the cooperative was not then forwarded to the Bank for the cancellation of individual debts, but was arbitrarily reinvested by the controlling "sindicato group" or management committee in credits to "friendly" buyers of sawn timber produced by the saw mills of the cooperative. These buyers were not even members of the cooperative. Over US\$ 80,000 in credits is still outstanding to these wood buyers. The humble colonists on seeing his money wasted like this and finding that the Bank had not credited him with paying back his loan, lost all confidence in the cooperative and refused to pay any more of his debts or have anything more to do with the cooperative. Up to now, many of the members of the cooperative do not know what a cooperative is and what function it should fulfil. It was known as an institution that gave money and now that there is no more money, they feel it should be closed. The name of Credit and Cooperatives has been discredited and they are considered as the setting that allows unscrupulous opportunists to take advantage of humble peasant. The accounts of the cooperative (992 members) are in such a mess that little is to be gained from giving statistics.

The Future

However, all is not hopeless. Already small groups of colonists who are neighbors and have grown to know and trust each other over the years are getting together to find means of expanding their production. They are anxious to work directly through the Bank and not through the old cooperative. They feel the old cooperative that has received no funds since 1969 should be allowed to die. Of the debts of over US\$ 500,000 of the cooperative, nobody has any solution, except to write the loss to experience, which is a heavy price to pay for the lesson that cooperatives cannot be imposed from the top, but must grow from the bottom in response to people's needs.

B. Cooperativa el Tajibo, Prov. of Warnes, Department of Santa Cruz.

A credit success story where financial responsibility pays off.

El Tajibo is a small village in the tropical lowlands situated on the road that runs from Montero to Okinawa. It is in an area of rich alluvial soils with a rainfall that fluctuates around 1,300 mm per annum. Most of the area was in virgin forest until recently. All members of the village can be called campesinos. Most of them received their land during the Reforma Agraria or if they are immigrants from the interior, bought the land from those who received land during the Reforma Agraria. Farmers' plots range from 10 to 30 hectares although the average is 15 Ha.

Rice Production

Among these small farmers, a cooperative with 16 members was formed in 1968 to get credit for rice production from the Agricultural Bank. They received a credit for US\$ 2,004 for the cultivation of 37 Ha. of rice. Their credit was broken down into the following items:

Pesticides	US\$ 246
Weeding	370
Harvest	1,233
Transport to market	<u>155</u>

US\$ 2,004

The money was released by the Agricultural Bank as needed and the final credit of US\$ 1,233 for harvesting and US\$ 155 for transport was released on the guarantee of the standing rice crop of roughly 380 fanegas valued at US\$ 5,066 that was waiting to be harvested. All credits provided by the Bank were promptly paid back after the harvest.

In 1969-70 only 29 Ha. of rice were planted by the 16 members of the cooperative because it was an extremely dry year. Only US\$ 966 of credit was requested for harvesting and this was later promptly paid back.

Sugar Cane

For 1970-71, the cooperative decided to expand their small cane planting since it had better prospects than rice, which had been badly affected by the continuing drought. The Bank gave them a credit

for US\$ 833 for expanding their cane plantings in February 1971.

Their deliveries in tons to the sugar mills increased as follows:

<u>Year</u>	<u>Ha.</u>	<u>Guabira</u>	<u>La Belgica</u>	<u>San Aurelio</u>	<u>Total</u>
1969	35	400			400 tons
1970	40	400	1000		1400 tons
1971	58	700	1000		1700 tons
Est. 1972	104	1200	1000	500	2700 tons

For the year 1971-72, the Agricultural Bank gave them a credit of US\$ 4,225. For the year 1972-73, the Agricultural Bank is proposing to give them a credit of US\$ 2.5 per ton of cane delivered to the sugar mills in the 1972 harvest, which will mean a credit of roughly US\$ 6,750.

Cotton

For the agricultural year 1971-72, the members of cooperative decided to try growing cotton. Because of their impeccable repayment record the bank advanced US\$ 6,000 for the cultivation of 30 Ha. of cotton with no guarantees except their good record on repayment. This credit was, in fact, directed first through the cotton cooperative "Los Chacos", which is composed of large cotton growers and in which El Tajibo joined as a single member. The results of the cotton project are as yet unclear, since El Tajibo have not yet been told by the cotton cooperative "Los Chacos" what price they will be paid for their cotton and at what quality it has been graded. This delay in clarifying the value of their crop two months after the harvest is making the small farmers of El Tajibo extremely nervous. They feel that they are being bullied by the large cotton cooperative and are now showing some unwillingness to continue growing cotton although the Agricultural Bank has budgeted to give them credit for 100 Ha. of cotton in 1972-73 at US\$ 200 per hectare for a total of US\$ 20,000. Their problems with insect damage and low yields at 8 qq per hectare in 1972 has also made them give a second thought to cotton. They feel that cotton is too complicated a crop for them to grow without technical support. They prefer to expand their sugar cane production because technically it is a much easier crop.

The Future of The Cooperative

Up to the moment, the cooperative which has now grown to 24 members only owns 3 knapsack motor sprayers and provides its members with insecticide, seed, and credit. However, in 1974 the cooperative plans to buy a tractor so that they can mechanize and expand their production. With their present records, they have every hope of getting credit and being able to manage the tractor successfully.

The moral of this case study is that when land, labor and credit are put together with good management, a great deal can be accomplished.

TABLE A 1

VALUE OF LOANS BY SOURCE OF FINANCING AND REGION
FROM JANUARY 1, 1964 TO JUNE 30, 1971
 IN US\$

Code No.	Source of Financing	Santa Cruz Amount	Cochabamba Amount	Beni-Pando Amount	La Paz Amount	Crucro Amount	Chuquisaca Amount	Potosi Amount	Tarija Amount	TOTAL AMOUNT
	<u>Regular Lines of Credit</u>	7,116,910	1,549,330	2,009,000	2,167,750	290,920	897,750	768,750	762,250	15,562,660
01	Internal Financing with Bank's funds	7,116,910	1,549,330	2,009,000	2,167,750	290,920	897,750	768,750	762,250	15,562,660
	<u>Special Programs-External Financing Received by Bank</u>	6,153,910	1,170,000	4,550,580	1,154,330	147,160	171,910	71,660	341,580	13,761,130
11	Credit Line CBE/BLD-1	1,134,000	167,160	372,420	101,580	38,840	33,920	-.-	150,250	1,998,170
12	Credit Line AID-511-L-028	1,348,420	236,330	106,250	207,750	-.-	15,500	16,000	1,830	1,932,080
13	Ranching Development-Beni "IDA"	-.-	-.-	4,071,920	-.-	-.-	-.-	-.-	-.-	4,071,920
14	Sugar Cane Production-Bermejo	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	4,071,920
15	Sugar Cane Production-General	494,750	-.-	-.-	-.-	-.-	-.-	-.-	152,830	152,830
16	Commercialization Rice 1970	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	494,750
17	Commercialization Rice 1971	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-
18	Colonization - 29° SF/BO	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-
19	Production & Marketing of Cereals	1,061,000	752,670	-.-	845,000	-.-	-.-	-.-	-.-	2,658,670
20	Cotton Production	253,420	13,830	-.-	-.-	108,330	122,500	55,670	36,670	590,420
21	Ranching Development - Santa Cruz	1,557,830	-.-	-.-	-.-	-.-	-.-	-.-	-.-	1,557,830
		304,500	-.-	-.-	-.-	-.-	-.-	-.-	-.-	304,500
	<u>Special Programs - Funds Administered by Bank on Fideicommission Basis</u>									
51	Rural Development	-.-	82,920	-.-	645,080	199,580	141,830	99,580	4,750	1,173,740
52	Wheat Development	-.-	2,330	-.-	-.-	-.-	-.-	42,080	16,000	60,410
53	Production and Warrant Rice	157,250	174,920	-.-	166,670	-.-	1,500	-.-	-.-	500,340
54	Commercialization Coffee	-.-	-.-	-.-	40,000	-.-	-.-	-.-	-.-	40,000
55	Importation of Dairy Cattle Min Agricultura	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-	-.-
		-.-	179,920	-.-	-.-	-.-	-.-	-.-	-.-	179,920
	TOTAL	13,428,070	3,159,410	6,559,580	4,173,830	637,660	1,213,000	982,060	1,124,580	31,278,210

SOURCE: Statistics Department - Agricultural Bank of Bolivia.

TABLE A 2

VALUE OF LOANS BY LINE OF EXPLOITATION - PERIOD 1964 - 1971

Line of exploitation	Santa Cruz		Cochabamba		Beni - Pando		La Paz		Oruro		Chuguisaca		Potosi		Tarija		TOTAL		
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
Livestock	404	4,088,580	304	1,672,230	548	6,510,400	150	692,230	195	369,640	159	507,900	11	84,850	51	192,810	1,622	14,118,610	
01 Apiculture	3	2,160	-	-	-	-	1	3,750	-	-	1	4,660	-	-	-	-	5	10,570	
02 Guaguas	-	-	-	-	-	-	1	4,660	2	8,170	-	-	-	-	-	-	3	12,830	
03 Poultry	33	145,920	137	621,080	-	80	91	378,580	37	13,000	6	10,410	3	9,580	12	32,250	319	1,210,890	
04 Dairy	74	293,420	147	929,080	11	31,910	28	134,830	5	33,660	15	71,330	3	24,500	6	56,660	269	1,575,380	
05 Meat cattle	248	3,560,660	12	107,750	532	6,455,160	9	67,580	21	26,160	67	285,000	3	37,000	18	70,660	910	10,609,970	
06 Sheep	4	10,000	1	7,080	1	15,750	16	91,000	130	288,330	-	-	1	12,500	1	3,410	154	42,070	
07 Swine	42	76,420	6	5,160	4	7,500	4	11,830	-	250	70	136,500	-	-	14	29,830	140	267,490	
08 Cuniculture	-	-	1	2,080	-	-	-	-	-	80	-	-	1	1,250	-	-	2	3,410	
Agriculture	666	9,286,560	591	1,061,620	14	41,800	675	1,973,470	106	159,650	546	596,700	619	348,640	822	913,806	4,039	14,882,266	
31 Cotton	59	3,213,250	-	-	-	-	-	-	-	-	8	13,410	-	-	-	-	67	3,231,660	
32 Rice	158	732,080	23	321,160	1	830	6	494,580	-	-	-	660	-	-	-	190	1,601,140		
33 Coffee	2	2,580	-	-	1	1,330	120	137,000	-	-	-	-	-	1	1,830	124	1,41,410		
34 Sugar cane	178	4,347,250	7	10,500	1	1,410	-	-	-	-	6	13,250	-	-	238	500,583	430	4,677,993	
35 Fruticulture	14	17,250	16	54,660	-	-	-	193	265,330	-	-	37	50,750	4	4,500	22	46,583	286	439,073
36 Horticulture	84	107,160	7	15,500	-	-	-	-	-	-	29	26,660	25	16,330	-	-	145	165,650	
37 Oilseeds	1	34,330	-	-	-	-	-	-	-	-	-	320	-	-	2	1,910	3	36,560	
38 Potatoes	37	63,000	23	81,910	-	-	158	215,160	1	660	43	87,830	93	111,750	270	251,330	625	811,640	
39 Wheat	2	21,330	6	16,083	-	-	1	160	-	-	25	49,250	50	59,250	10	35,000	94	183,070	
40 Viticulture	7	18,420	5	7,750	-	-	38	96,330	-	-	-	-	194	282,080	15	73,580	259	478,160	
41 Barley	-	-	-	-	-	-	1	7,250	2	1,250	-	-	-	-	-	-	3	8,500	
42 Corn	10	15,830	-	240	-	-	-	-	-	-	11	17,410	16	16,160	20	22,580	57	72,220	
43 Alfalfa	-	-	1	4,160	-	-	-	-	41	53,830	-	-	2	660	-	-	44	58,650	
44 Agric. in Gen.	112	627,920	502	532,830	11	38,250	156	678,910	62	103,910	387	327,160	235	357,910	243	179,910	1,708	2,846,800	
45 Cacao	2	36,160	1	1,830	-	-	2	78,750	-	-	-	-	-	-	-	-	5	129,740	
Commer- cialization	2	53,330	1	424,750	-	-	15	1,508,010	3	108,330	2	108,330	2	48,330	2	18,330	27	2,269,410	
51 Rice	2	53,330	1	424,750	-	-	2	438,330	-	-	-	-	-	-	-	-	5	916,410	
52 Sugar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
53 Fruits	-	-	-	-	-	-	2	36,600	-	-	-	-	-	-	-	-	2	36,600	
54 Wool	-	-	-	-	-	-	2	187,500	1	41,670	-	-	-	-	-	-	3	229,170	
55 Coffee	-	-	-	-	-	-	9	845,500	-	-	-	-	-	-	-	-	9	845,500	
56 Grains	-	-	-	-	-	-	-	-	2	66,660	2	108,330	2	48,330	2	18,330	8	241,650	
TOTAL	1,072	13,428,470	896	3,158,600	562	6,552,220	840	1,173,710	309	637,620	707	1,212,930	632	631,800	875	1,124,946	5,888	31,270,236	

SOURCE: Statistics Department, Agricultural Bank of Bolivia.

TABLE A3 VALUE OF LOANS BY TYPE OF INVESTMENT AND REGION-COLLECTIVE B PROJECT (Regular Lines of Credit plus Special Programs)
PERIOD 1964 - 1971 - IN US\$

Code No.	Type of Investment	Santa Cruz Amount	Cochabamba Amount	Beni-Pando Amount	La Paz Amount	Oruro Amount	Chuquisaca Amount	Fotosi Amount	Tarija Amount	TOTAL AMOUNT
	<u>Family Maintenance</u>		80	3,330	32,910	160		330		37,310
01	Subsistence			3,330	32,910	160		330		37,150
02	Hygiene & Sanitation		80							160
	<u>Working Capital</u>	7,249,750	1,086,670	1,417,250	2,151,830	198,830	360,000	422,580	454,000	13,603,910
11	Feed & Veterinary expenses	66,670	272,920	234,500	157,660	15,350	16,750	2,250	18,580	790,580
12	Seeds, Fertilizers & Pesticides	605,330	234,250	920	264,330	35,000	112,330	205,670	225,580	1,633,910
13	Cost of Operation of Machinery (fuel, lubricantes & hire charges)	361,000	311,670	3,170	203,250	7,250	2,330	4,250	2,580	996,000
14	Repair & Maint. of Bldgs. & equipment	77,250	5,670	4,920	13,250	12,080	12,580	23,750	32,930	179,330
15	Hand Tools	6,250	18,750	500	50,420	9,750	19,330	10,420	4,170	119,590
16	Taxes & Interest	--	--	--	16,830	--	--	--	--	16,830
17	Rent of Land	3,160	--	--	--	--	--	--	--	3,160
18	Transport	41,250	5,080	3,080	32,250	1,160	1,580	19,330	8,250	111,930
19	Store cattle	194,920	35,750	1,110,330	129,250	4,830	52,750	15,920	4,330	1,547,580
29	Others not classified above	5,893,920	202,580	59,830	1,571,580	113,500	141,830	134,500	136,750	8,254,500
	<u>Fixed Assets</u>	6,178,580	2,112,670	5,130,830	1,721,000	432,580	842,000	258,660	691,420	17,676,740
31	Purchase of Land	55,420	16,250	1,000	11,430	--	13,910	6,420	2,910	136,740
32	Buildings	221,910	426,830	705,750	257,080	32,750	78,330	61,000	87,660	1,871,330
33	Improvement of land & Pastures	281,410	59,330	131,080	25,750	13,920	20,660	8,000	26,330	565,640
34	Water Supply	176,670	11,500	123,170	115,170	32,420	51,170	90,580	38,750	745,430
35	Machinery	2,025,500	490,000	331,170	116,920	95,350	91,170	61,750	60,420	3,572,180
36	Work animals	24,750	171,750	14,670	167,250	46,420	212,330	154,670	49,420	648,560
37	Perennial Plantations	109,170	114,250	15,000	224,080	12,830	17,330	23,660	189,830	706,150
38	Fencing	397,330	25,670	1,278,830	29,400	30	90,250	65,080	42,580	1,936,830
39	Breeding Cattle	2,227,330	581,330	2,466,580	279,170	163,250	240,670	22,000	97,330	5,081,160
49	Others not classified above	659,080	115,750	63,580	157,000	28,500	16,170	63,580	95,670	1,209,250
	TOTAL	13,428,330	3,199,420	6,551,410	4,191,740	637,570	1,202,300	982,070	1,125,420	31,317,960

SOURCE: Statistics Department - Agricultural Bank of Bolivia.

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TABLE A4

LOANS RESCHEDULED BY LINE OF CREDIT

January 1, 1964 to June 30, 1971

Average Size of Loan US\$	Type of Production	Loans Rescheduled		% of Original Loan	
		Number	Value US\$	Number	Quantity
2,882	Own Funds	2,379	6,855,250	48.32	44.05
	Bank's Special Programs				
155,906	Colonization	17	2,651,417	80.95	99.73
16,166	Ranching Dev. - Beni	157	2,541,250	65.42	62.52
26.215	Importation and purchase of machinery	43	1,127,250	55.13	56.92
64,306	Sugar cane production general	6	385,833	75.00	77.97
17,853	CBF/BID-1	52	928,333	42.28	46.46
2,223	Sugar cane Bermejo	50	111,167	48.08	72.74
1,444	Production and market- ing of cereals	3	4,333	7.32	1.05
23,627	Total Bank's special programs	<u>328</u>	<u>7,749,583</u>	50.62	56.89
	Special Programs - Administered by Bank				
6,189	Rural Development	145	897,333	67.44	66.53
59,972	Importation of Dairy Cattle-Min.of Ag.	3	179,917	100.00	100.00
6,110	Production & warrant rice	19	116,250	28.36	25.54
2,106	Wheat development	<u>22</u>	<u>46,333</u>	70.97	74.83
	Total Special Programs Administered by Bank Administration	<u>189</u>	<u>1,239,833</u>	59.62	59.45
5,471	Total	<u>2,896</u>	<u>15,844,667</u>	49.18	50.67
		=====	=====		

Source: Study by Aurelio Fernandez Díaz - Appendix "2-2"

TABLE A5

DELINQUENT LOANS - BY LINE OF CREDIT

As of June 30, 1971

Average Size of Loan US\$	Type of Production	Delinquent Loans		% of Original Loan	
		Number	Value US\$	Number	Quantity
3,144	Own Funds	<u>629</u>	<u>1,977,417</u>	12.88	12.78
	Bank's Special Program				
16,051	Ranching Dev. - Beni	76	1,252,000	32.92	31.17
34,455	Importation and purchase of machinery	33	1,137,000	42.31	57.41
11,164	CBF/BID-1	35	390,750	28.45	19.55
358,667	Cotton development	1	358,667	5.00	23.02
8,756	Production and market- ing of cereals	14	122,583	34.15	29.83
14,944	Sugar cane development	3	44,833	37.50	9.06
6,131	Colonization	<u>7</u>	<u>42,917</u>	33.33	1.61
19,583	Total Bank's Special Programs	<u>171</u>	<u>3,348,750</u>	26.39	24.58
	Special Programs- Administered by Bank				
4,306	Rural Development	91	391,833	42.33	29.05
1,807	Production & warrant of rice	38	68,667	56.72	15.09
26,667	Commercialization of coffee	1	26,667	100.00	66.67
873	Wheat development	25	21,833	80.65	35.26
8,167	Importation of Dairy Cattle-Min. of Ag.	<u>1</u>	<u>8,167</u>	33.33	4.54
3,315	Total Special Programs Administered by Bank Administración	<u>156</u>	<u>517,167</u>	49.21	24.80
6,112	Total	<u>956</u>	<u>5,843,333</u>	16.24	18.69
		=====	=====		

Source: Study by Aurelio Fernandez Diaz - Appendix "2-5"

TABLE A6

DELINQUENT LOANS UNDER LEGAL ACTION - BY LINE OF
CREDIT - As of June 30, 1971

Average Size of Loan US\$	Type of Production	Delinquent Loans		% of Original Loan	
		Number	Value US\$	Number	Quantity
2,371	Own Funds	<u>301</u>	<u>713,583</u>	6.14	4.59
	Bank's Special Programs				
16,621	Importation and purchase of machinery	21	395,250	26.92	19.96
12,348	CDF/BID-1	30	370,417	24.39	18.53
7,273	Production and market- ing of Cereals	11	80,000	26.83	19.47
19,639	Ranching Development- Beni	3	58,917	1.25	1.45
14,944	Sugar cane production	3	44,833	37.50	9.06
6,131	Colonization	<u>7</u>	<u>42,917</u>	33.33	1.61
13,231	Total Bank's special programs	<u>75</u>	<u>992,334</u>	11.57	7.23
	Special Programs - Administered by Bank				
4,056	Rural Development	82	332,583	38.14	24.66
1,307	Production & warrant rice	30	65,667	56.72	15.09
26,667	Commercialization of coffee	1	26,667	100.00	66.67
924	Wheat development	23	21,250	74.20	34.32
8,167	Importation of dairy cattle-Min . of Ag.	<u>1</u>	<u>8,167</u>	33.33	4.54
3,154	Total Special Programs -Administered by Bank	<u>145</u>	<u>457,333</u>	45.74	21.93
4,152	Total	<u>521</u>	<u>2,163,250</u>	6.85	6.92
		=====	=====		

Source: Study by Aurelio Fernandez Diaz - Appendix "2-7"

COUNTRY PROGRAM

INSTITUTO DE DESARROLLO AGROPECUARIO

(INDAP)

by:
Charles T. Nisbet
Evergreen State College

Olympia, Washington
January, 1973

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PREFACE

During the summer of 1972 I re-visited Chile for the purpose of writing a ten-year history of a small farmer credit program. This research project on INDAP was financed by the Agency for International Development (AID) as part of their annual Spring Review of small farmer credit programs in the underdeveloped countries. The objective of the research was not to undertake an independent field study or in general generate original data, but to gather in and synthesize all available documents, studies, reports, etc. and interview as many informants as time and expense would permit. Everything contained in the study represents solely the views and findings of the author and not any of the cooperating organizations and institutions. Responsibility for any shortcomings, of course, rests entirely with the author.

I. INTRODUCTION

(This section is to be prepared by AID/Washington)

II. PROGRAM CHARACTERISTICS

A. Background

1. Historical Summary

The Institute of Agricultural Development (*Instituto de Desarrollo Agropecuario*) referred to hereafter as INDAP was created by the Agrarian Reform Law 15020 of 1962 as an autonomous state enterprise.

INDAP has undergone three different phases corresponding to the presidential administrations of Jorge Alessandri (Democratic Front) from 1962-64, Eduardo Frei (Christian Democrat) from 1964-70, and Salvador Allende (Union Popular) from 1970 to the present. These three administrations represent the entire spectrum of political and economic ideology which has steadily moved leftward over this ten-year period. The planning and operation of INDAP reflect this change. Throughout the balance of this report I will refer to Phase I, Phase II and Phase III as the Alessandri, Frei and Allende administrations respectively.

2. Relation to National Credit System

As an autonomous state lending institution, INDAP has no direct connection with the Central Bank of Chile. INDAP is regulated as a financial institution by the Superintendent of Banks, a state organization under the Ministry of Finance charged with the supervision of banking activities of commercial banks and auxiliary financial institutions (such as INDAP). INDAP is regulated as a state agricultural institution by the Ministry of Agriculture. INDAP has no connection with the other financial institutions lending to the agricultural sector.

The Tables 2 through 7 that follow demonstrate the role and importance of INDAP within the national credit market and among state development institutions serving agriculture. Before we look at the tables individually a few notes in general are necessary. The Chilean institutional credit market is composed of a Central Bank, a State Bank, 28 private commercial banks and auxiliary credit institutions, e.g., INDAP, CORA and CORFO¹.

The Central Bank of Chile is the principal monetary authority. Its policies are directed toward determining an adequate level of the money supply compatible with a program of stabilization on one hand and with economic development on the other. In recent years the bank has concerned itself with the distribution of resources within the country by region, product and type of borrower.

¹CORA is the *Corporación de la Reforma Agraria* or the state agrarian reform corporation, CORFO is the *Corporación de Fomento de la Producción* or the state development corporation for all sectors of the economy.

This task has proved to be especially difficult for the Central Bank as years of inflation without dynamic growth in Chile bear evidence. Table 1 shows the rates of inflation for the past two decades. Only twice during this twenty year period was the inflation less than 10 percent a year. As Frederico Gil has noted, "although legally autonomous in policy matters because of its (Central Bank) board membership, it has always followed the course determined by the government and Ministry of Finance."²

In 1953, the State Bank, *Banco del Estado*, was formed in a merger of four financial institutions into an autonomous government bank. It is responsible for about 40 percent of all commercial banking business. The State Bank is a mixed institution which promotes economic development and savings and operates as a commercial deposit bank. In addition, it acts as the sole depository for funds of the Treasury, autonomous government agencies and municipalities. It operates 170 branches and agencies throughout the country.

²Federico Gil , The Political System of Chile. (Boston: Houghton Mifflin Company, 1966, p. 171.

TABLE 1

Annual Rates of Inflation in Chile: 1951-1971
(Percentage change in the consumer price index)

Year	Rate of Inflation
1951	23.2
1952	12.1
1953	56.1
1954	71.1
1955	83.3
1956	37.7
1957	17.3
1958	32.5
1959	33.3
1960	5.4
1961	9.7
1962	27.7
1963	45.4
1964	38.4
1965	25.9
1966	22.8
1967	18.1
1968	26.6
1969	30.6
1970	24.3
1971	20.1
1972*	27.5

Source: *Banco Central de Chile, Bolentín Mensual*, various years.

*The first six months

The private commercial banks in Chile comprise about 60 percent of the commercial banking system, both in total assets and deposits, with the State Bank forming the remainder. The private banks, 28 in number, differ widely in size and in nature of operations. The vast majority are located in the largest cities.

With that background we can move on to Tables 2 through 7. In terms of number of farmers attended, Table 2 shows that INDAP has grown over the years to have more clients than any other institution. Data is not available for the Central Bank or the private banks but these lenders make fairly large loans to a small number of borrowers. In fact, by 1971 INDAP was servicing 75,000 farmers and farm organizations which represents more than twice the number of clients claimed by any other lending institution.

Table 3 gives the amount of credits extended by each agricultural lender in "nominal values" (*escudos* of each year). Tables 4 and 5 provide these same credits in "real values" (constant *escudos*) for the years 1965 and 1969 respectively. Finally, Tables 6 and 7 permit us to see the changing importance of each lender over time. For example, private banks have been steadily decreasing in importance within the agricultural sector. Private banks have lower risk opportunities in other sectors because of unfavorable farm prices, insecure land tenure rights and inefficient farm management practices. In contrast or to fill the gap, all state lending institutions have increased their share of agricultural credits. The largest increase comes from CORA, the Agrarian Reform Corporation. In recent years CORA has found it necessary to extend large amounts of credits to the newly formed agricultural units that it has created from expropriated rural properties.

TABLE 2

**Total Number of Farmers and/or Agricultural Enterprises
Receiving Credits of Chilean Lending Institutions
1962-1969**

<u>Institution</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
State Bank	21,000	33,108	31,217	38,544	48,866	55,000	45,833	30,889
CORA ¹	357	181	465	1,089	4,980	8,347	14,594	20,451
INDAP	10,143	15,900	20,380	49,340	52,446	46,280	46,161	41,615
CORFO ²	2,762	1,824	3,918	2,842	3,619	4,383	4,489	9,014
IANSA ³	--	--	--	--	4,578	4,826	4,920	6,464

Source:

As reported in *INDAP: Bases de Una Política Agraria*, Instituto de Desarrollo Agropecuario, Santiago, 1970, pp.40-43.

¹*Corporacion de la Reforma Agraria* - state agrarian reform institution - it is in charge of all matters related to land division and of the provision of credit and technical assistance to the economic units that it establishes with expropriated properties.

²*Corporación de Fomento de la Producción* - state development corporation.

³*Industria Azúcarera Nacional Sociedad Anonima* - state owned sugar beet corporation that advances credit to many small sugar beet growers.

TABLE 3

Total Agricultural Credits Granted by Chilean Lending Institutions
(In Thousands of *Escudos* of Each Year)

<u>Institution</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
State Bank	72,233	91,293	109,247	140,560	184,440	304,291	621,600	826,264	1,048,339	1,361,476
CORA	111	436	1,494	1,651	1,957	11,200	38,300	99,372	172,000	323,748
INDAP	--	--	1,203	6,146	10,952	25,541	31,754	43,854	72,800	104,400
CORFO	1,883	8,341	12,019	15,615	38,839	48,835	89,555	95,061	124,400	152,428
Central Bank	7,503	11,985	16,569	20,292	35,114	70,000	89,130	122,519	169,772	215,396
IANSA	--	--	--	3,168	4,927	6,987	37,462	46,601	65,427	111,258
Private Banks	66,605	88,550	122,016	158,449	190,800	209,000	221,200	235,200	288,941	370,000

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Source: See Table 2.

TABLE 4

Total Agricultural Credits Granted by Chilean Lending Institutions
(In Thousands of *Escudos* of 1965)

Institution	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
State Bank	230,998	283,519	307,358	263,468	232,002	304,291	505,860	565,431	555,118	535,978
CORA	355	1,354	4,212	3,095	2,462	11,200	31,169	68,003	91,078	127,455
INDAP	--	--	3,454	12,077	14,596	25,541	25,842	30,010	38,549	43,218
CORFO	6,025	25,904	33,885	25,265	41,307	48,835	72,880	65,052	65,872	60,009
Central Bank	23,994	37,220	46,713	38,036	44,169	70,000	72,534	83,843	89,898	84,798
IANSA	--	--	--	5,913	6,198	6,987	30,487	31,850	34,645	43,801
Private Banks	<u>213,000</u>	<u>275,000</u>	<u>343,997</u>	<u>297,000</u>	<u>240,002</u>	<u>209,000</u>	<u>180,013</u>	<u>160,953</u>	<u>153,000</u>	<u>145,913</u>
Total Credits	474,367	622,997	740,259	648,864	580,736	675,854	918,785	1,005,182	1,028,160	1,040,923

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Source: See Table 2.

TABLE 5

Total Agricultural Credits Granted by Chilean Lending Institutions
(In Thousands of *Escudos* of 1969)

<u>Institution</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
State Bank	586,783	719,977	782,571	669,333	589,266	712,902	1,284,849	1,436,229	1,410,005	1,361,436
CORA	902	3,438	10,702	7,862	6,252	28,448	79,265	172,730	231,338	323,748
INDAP	--	--	8,775	30,681	37,074	64,874	65,635	76,228	97,915	109,779
CORFO	15,305	65,781	86,096	74,357	104,917	124,041	185,107	165,237	167,317	152,428
Central Bank	60,950	94,519	118,689	96,628	112,185	177,801	184,229	212,965	228,342	215,396
IANSAs	--	--	--	15,038	15,741	17,747	77,433	81,003	87,999	111,258
Private Banks	541,064	698,344	874,040	754,518	609,585	530,862	457,214	408,829	388,623	370,000

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Source: See Table 2.

INDAP has also increased its share of total credit by going from 0.5 percent in 1962 to 4.2 percent by 1969. However, INDAP is the least important agricultural lender in terms of quantity of credits. IANSA is small also but it is an industrial corporation that engages in contract farming by granting credit to sugar beet growers.

Table 7 looks at state development institutions. Here we can see that change in emphasis placed by government. The increasing importance of CORA becomes more obvious when it is compared only with other state development lenders. Notice that all other state development institutions declined in importance. However, it is well to remember that all state lenders have increased the "real" level of financing assistance by from 2 to 10 fold over the period.

TABLE 6

Percentage of Agricultural Credit Granted by Chilean
Lending Institutions in *Escudos* of 1965

<u>Institution</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>
State Bank	48.7	45.5	41.6	40.6	39.9	45.0	55.1	56.3	54.0	51.5
CORA	0.1	0.2	0.6	0.5	0.4	1.7	3.4	6.8	8.9	12.2
INDAP	--	--	0.5	1.9	2.5	3.8	2.8	3.0	3.7	4.2
CORFO	1.3	4.2	4.6	4.5	7.1	7.2	7.9	6.5	6.4	5.8
Central Bank	5.1	6.0	6.3	5.9	7.6	10.4	7.9	8.3	8.7	8.1
IANSÁ	--	--	--	0.9	1.1	1.0	3.3	3.2	3.4	4.2
Private Banks	<u>44.8</u>	<u>44.1</u>	<u>46.4</u>	<u>45.7</u>	<u>41.4</u>	<u>20.9</u>	<u>19.6</u>	<u>15.9</u>	<u>14.9</u>	<u>14.0</u>
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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Source: See Table 3.

TABLE 7

Percentage of Agricultural Credit Granted by
State Development Institutions

<u>Institution</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
State Bank	79.8	80.2	79.5	77.6	73.9	70.0	70.4
CORA	0.9	3.0	5.0	9.3	12.1	16.9	19.4
CORFO	14.2	6.1	11.4	8.9	8.9	7.5	5.9
INDAP	<u>5.1</u>	<u>10.7</u>	<u>4.1</u>	<u>4.2</u>	- <u>5.1</u>	<u>5.6</u>	<u>4.3</u>
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ODEPA, *Oficina de Planificación Agrícola* as reported in Nancy Valdes Estrados and Fernando Cuevas Sottolichio, "El Character Del Credito en Los Pequeños Productores Agrícolas," Santiago, June, 1971, mimeo, p. 21.

3. Other Program Activities

During Phase I the only program activities were credit extension and technical assistance. During Phases II and III these activities continued but received increasingly reduced emphasis. Re-organization of the farm unit and political organization of the rural poor became the principal activities of INDAP during the last two phases.

The government divides the rural poor in Chile into the "reformed sector", serviced by CORA and the "non-reformed sector", serviced by INDAP. It has been estimated that from 50 to 60 percent of the poor rural families will not receive land via the agrarian reform since there is not enough land to establish family size farms. The Allende administration is dealing with this problem by promoting state farms that will utilize larger numbers of workers per *hectare* than the family size farms created mainly under Phase II. Nevertheless, at present in rural Chile about 60 percent of the rural poor are untouched by the state's reform and organizational efforts (see Table 8).

Over the years INDAP has attempted to reorganize the farm unit by first forming *comites de campesinos*, committees of small farmers, that would hopefully turn into full blown cooperatives after a few years. The solution to the problem of *minifundio* was seen as aggregation or cooperative farming.

Political organization of the rural poor has been promoted by the formation of rural labor unions. The growth of rural labor unions has been dramatic. In 1964 there were only 24 labor unions for agricultural workers that claimed a total membership of 1625 workers. But by 1971 there were over 600 unions with a membership of over 200,000 rural workers. Table 9 provides a breakdown of the various confederations and their members for 1970 and 1971.

The levels of organization for rural unions and rural cooperatives are charted in Table 10. You can see that organization begins at the most basic level, individual farmers organized into unions or cooperatives within a *comuna*. Then all *comunas* are organized at the provincial level and finally a national federation.

The *consejos comunales campesinos* (CCC) along with the provincial and national federations are the organizational means used to integrate the *campesinos* into the life blood of the country. The CCC is a political institution designed to express the political power of the rural poor. As of 1971, 238 CCC and 20 *provinciales* existed representing 80 percent and 89 percent respectively of the goals set for 1971. The reader should be alerted that this organizational effect is still mainly theoretical as actual organization has proven very slow and difficult.

TABLE 8

The Organization of Chile's Rural Poor

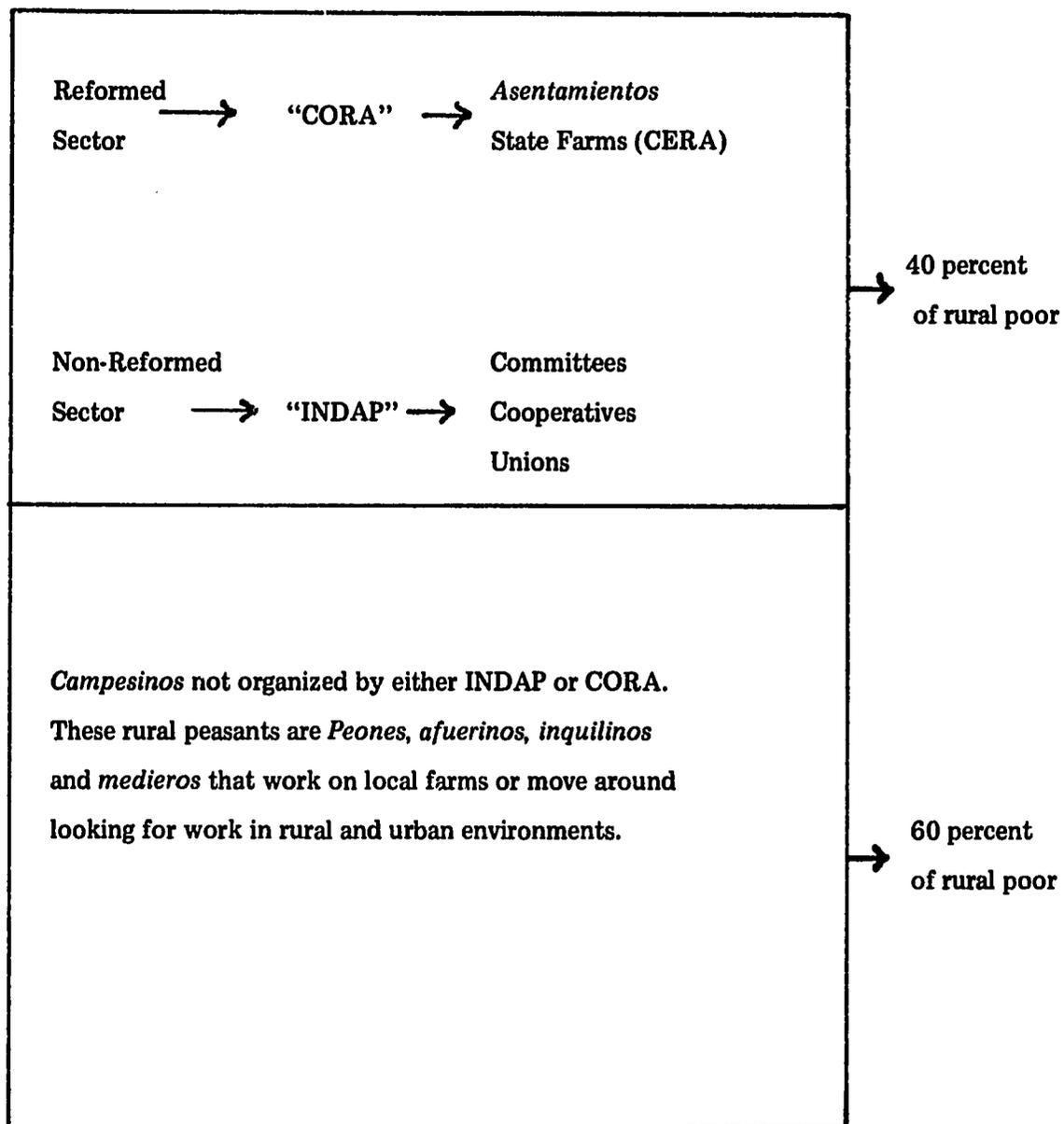


TABLE 9

**Chilean Rural Labor Unions and Members
of the Different Confederations**

<u>Confederation</u>	<u>1970</u>		<u>1971</u>	
	<u>Number of Unions</u>	<u>Total Members</u>	<u>Number of Unions</u>	<u>Total Members</u>
1. <i>Ranquil</i>	163	43,867	291	98,132
2. <i>Triunfo Campesino</i>	234	64,003	129	43,402
3. <i>Union Obrero Campesino</i>	--	--	90	32,445
4. <i>Libertad</i>	79	29,114	83	32,749
5. <i>Provincias Agrarias Unidas</i>	12	1,686	7	513
6. <i>Fed. Sargento Candelaria</i>	<u>5</u>	<u>1,605</u>	<u>5</u>	<u>2,080</u>
Totals	493	140,275	603	209,321

Source: INDAP, *Dept. Sindical*, June, 1972.

TABLE 10

Levels of Organization for
Rural Unions and Cooperatives in Chile

<u>Comunal*</u>	<u>Provincial**</u>	<u>Nacional***</u>
(1) Each <i>Comuna</i> has several unions that are joined together by a <i>comuna</i> union council.	(1) Each province has several comunal union councils that are joined together by a provincial federation.	(1) Each provincial federation has representation on the national confederation of unions.
(2) A <i>comuna</i> may have one or more cooperatives that is joined together by a <i>consejo comunal campesinos (CCC)</i> .	(2) Each province has several comunal councils of <i>campesinos</i> that are joined together by a provincial federation.	(2) Each provincial federation has representation on the national confederation of cooperatives.

Notes:

- * A *comuna* is the basic civil division in Chile which is comparable to the township in the United States.
- ** A *province* is another basic civil division analogous to states in the United States.
- *** *Nacional* is the nationwide division at the federal level.

4. Relation to Pre-existing Local Institutions

INDAP was created to bring agricultural credit to small low income farmers. There was no pre-existing institutional structure to build upon. The existing financial institutions without exception during 1962 and 1963 lent only to medium and large farmers. This meant INDAP entered an institutional void and was not competing with other institutions for the same clients. However, INDAP did and does offer competition for the "informal credit market," (friends, neighbors, professional moneylenders, store owners, traders, etc. that have always lent money and goods to those with not enough "credit worthiness" to borrow from financial institutions).

The manpower for INDAP was drawn from local governmental agencies, financial institutions and universities. By and large they were very young men with little field experience within agriculture. Special problems created by INDAP's employee recruitment policies will be covered in the section on "evaluation."

5. Agricultural Patterns and Potential

INDAP's program is nationwide. It services more of rural Chile than any other lending institution. The program area is defined by all agricultural area worked by low income farm people.

INDAP's lending reaches the whole range of agricultural crops, livestock, and fisheries. No information exists on the productivity of INDAP credit users other than some crude estimates compiled from loan applications which are shown in Table 11. INDAP personnel calculated these estimates by summing the total seed credits or for peas 269.00 *quintales*. Then the seed was multiplied by a national average of *quintales* of seed per *hectare* (1.20 for peas) to estimate the total land area planted in that crop. Finally, a national estimate for production per *hectare* would be multiplied times the estimated land area planted to generate the estimated total production. Although these figures are undoubtedly highly questionable, they are the only data in existence on production.

With the exception of /special export loans, INDAP credits to date have gone into export crop production. Export production in Chile is done on the largest farms that utilize the latest in technology and have access to traditional credit sources. INDAP's credits have gone into expanding production for the local economy and at times merely to raise the level of on the farm consumption.

From the very outset INDAP's purpose was to service the small farmer. At the outset of Phase II the potential market for INDAP was defined as the rural "low income sector." Some indication of the size and characteristics of this sector are given in Table 12. Over 90 percent of the total agricultural population, nearly 2,000,000 people, is located in the "low income sector." Over 40 percent of this sector has no farm land and only about 21 percent of this sector operates farms

large enough to support their immediate family.

TABLE 11

**Estimated Agricultural Production in 1971-72
Resulting from INDAP Credits***

<u>Crops</u>	<u>Seed (qq)**</u>	<u>Estimated Seed Per Ha.***</u>	<u>Area Planted Ha.</u>	<u>Estimated Production (qq per Ha.)</u>	<u>Total Production (qq)</u>
Wheat	67,486.00	1.60	42,178.75	17.00	717,038.75
Oats	4,786.00	2.20	2,175.45	12.00	26,105.40
Peas	269.00	1.20	224.16	10.00	2,241.60
Lentils	3,337.00	0.50	6,674.00	14.00	93,436.00
Potatoes	40,919.00	16.00	25,574.37	90.00	2,301,693.30
Beans	9,361.00	1.60	5,850.62	15.00	87,759.30
Corn	835.00	0.25	3,340.00	35.00	116,900.00
Chick Peas	212.00	0.60	353.33	12.00	4,239.96
Rice	2,377.00	11.60	1,485.62	40.00	59,424.80
Barley	1,089.00	1.60	680.62	18.00	12,251.16

* These production estimates come from loan application's plan of operation and should be considered optimistic.

** (qq) represents *quintales* or 220 pounds

*** (ha.) represents *hectare* or 2.471 acres

Source: INDAP, *Oficina de Planificacion*, June, 1972.

TABLE 12

Land Tenure, Agricultural Population, Occupation, Total Agricultural
Operations, Total Arable Land in Chile in 1955

<u>Land Tenure</u>	<u>Agr. Pop.</u>	<u>Percentage</u>	<u>Active Pop.</u>	<u>Percentage</u>	<u>Agr. Operations</u>	<u>Percentage</u>	<u>Total Arable Land (Ha.)</u>
<i>Latifundio</i> ¹	46,800	2.4	13,700	2.0	10,400	5.3	3,251,000
<i>Fundos</i> ²	111,800	5.8	44,900	6.8	24,400	13.7	1,124,000
<i>Family</i> ³	367,400	19.0	109,500	16.5	60,400	34.0	587,000
<i>Minifundio</i> ⁴	150,000	7.7	39,300	6.0	--	--	--
<i>Comunidades</i> ⁵	336,200	17.4	133,000	20.0	55,800	31.3	--
<i>Medierias</i> ⁶	134,500	7.0	40,400	6.1	27,000	15.7	54,000
<i>Asalariados</i> ⁷	<u>786,900</u>	<u>40.7</u>	<u>283,400</u>	<u>42.6</u>	<u>--</u>	<u>--</u>	<u>--</u>
	1,933,600	100.0	664,200	100.0	178,000	100.0	5,016,000

Source: CIDA: *Chile Tenencia de la Tierra y Desarrollo Socio-Economico del Sector Agricola*, 1966, Tables V-2, B-14, V-2, XI-14.

¹ Land sufficient to give permanent occupation to a work force much larger than the immediate family so that the farm must be run by a manager or administrator

² Land that requires outside labor but not large enough for a farm manager.

³ Land that requires no more than the labor of the immediate family who manage the farm.

⁴ Land insufficient to satisfy the minimum necessities of a family and which cannot offer full year employment to members of the family.

⁵ Land held in common by a group of people, located in Northern Chile on very dry and poor quality soil.

⁶ Land owned by one party and worked by another - sharecropping.

⁷ Migrant workers - without land.

B. Objectives

1. General Objectives

a. Announced

The principal objective of INDAP, as stated in the 1962 law, is to provide gratuitous technical assistance and low cost loans to small and medium sized farmers -- including those exploiting *minifundia* -- as well as indigenous peoples. This is done either directly with the individual farmers or through their corresponding committees and cooperatives.

During Phase II INDAP broadened its objectives to encompass a development concept that included economic, social and cultural aspects. During this phase the government embarked on a national program of integration of the small farmer into the national economy.

In 1965 President Frei presented the objectives of his agricultural program to the people.

- (1) Making land available to thousands of landless peasants.
- (2) Increasing agricultural production.
- (3) Raising the incomes and standard of living of the rural poor.
- (4) Obtaining active participation of peasants in the national society.

All but the first became operational objectives of INDAP. All of the above objectives became operational objectives of CORA.

As INDAP began Phase III one can note a change in the stated objectives. In the 1972 issue of INDAP: *Marco Nacional de Programacion* we find the following objectives:

- (1) Strengthening of the *campesino* movement.
 - a. Strengthening of the *campesino* organization.
 - b. Spreading of the *campesino* movement.
 - c. Unity of the *campesino* movement.
- (2) Implementation of the political power of the *campesino*.
 - a. Elevating the ideological level of the *campesino*.
 - b. Increasing the access of the *campesino* to the means of production.
- (3) Implementation of various economic forms of production prescribed by the government which are: state farms, agrarian reform centers, cooperatives and private farms.
 - a. Formation and development of *campesino* cooperatives.
 - b. Increase the agricultural production, agricultural productivity and general economic efficiency.

b. Apparent

INDAP began in 1962 as a rather specialized credit institution, granting credits to small farmers who were not sufficiently credit worthy to seek funds from traditional financial institutions. In this way INDAP began with rather traditional objectives of increasing agricultural production and raising income levels of the rural poor. But what became very obvious in the first few years of operation was that INDAP had a social and educational component that was gaining in importance, and in some cases was more important than the traditional economic one of a lender.

From the beginning INDAP has been dealing with the non-reformed part of the agricultural sector, i.e., that part not touched by the Agrarian Reform. In a sense INDAP has performed a "social welfare" function for this part of rural poor not touched by the Agrarian Reform. The level of political awareness and general discontent has been on the rise in rural Chile as can be established by the leftward swing in rural votes during the 1960's. In this sense INDAP's Phase II operations attempted to pacify the rural discontent.

The leftist political parties of Chile (Christian Democrats, Socialists and Communists) who all favor some form of radical economic and social reform in rural Chile saw the political capital to be gained by organization of the rural poor. Thus, during Phase II in we see the beginnings of combining traditional economic credit with political organizing efforts. In a sense, credit was the carrot offered to foster organization.

Now during Phase III there is no conflict between the stated objectives and the apparent objectives as was the case during Phase II. The stated objectives very clearly indicate that organization of the *campesino* and re-organization of the economic unit are foremost with their economic counterparts receiving a last place position.

2. Terms of Loans

(See Section E. Lending Policies and Procedures under PROGRAM CHARACTERISTICS):

C. Organization

1. General Structure

Administratively, INDAP divides Chile's 25 provinces into 15 zones of operation that include 122 work areas of operation (see Table 13)³. This kind of decentralization allows the program to deal with regional peculiarities and to move technical assistance and farm credit to the farm level directly from the work area offices in the countryside.

Within each work area INDAP implements its program by dealing with *campesino* organizations. The basic organizational unit through Phases I and II was the *comité de campesinos*, a group of independent small farmers who live in the same area and are organized by INDAP for purpose of receiving credit and technical assistance. The committee has no legal status nor any similarity to a cooperative and is merely a voluntary group of small farmers. INDAP concluded the only way to reach many farmers with technical assistance without incurring excessive per farmer costs was to work in groups of from 20 to 60. It was expected that these *comites* would eventually develop into full fledged cooperatives allowing the integration of technical assistance, credit and marketing.

In Phase III the emphasis shifted to forming cooperatives directly as the basic unit. The forming of *comites* has been greatly de-emphasized. That is, the smaller committees are being merged into cooperatives with a minimum goal of 200 members. The ultimate goal is to turn cooperatives into *empresas campesinos*, business enterprises of small farmers.

Diagrams 1, 2 and 3 that follow represent the respective organizational charts for Phases I, II and III. I will only describe the relationships in Diagram 3, the current one. All of Diagram 3 except the section at the bottom refers to the structure of INDAP's main office in Santiago. INDAP consists of four major divisions:

a. Technical assistance and credit

This division organizes technical assistance for the field, plans and organizes current and future credit needs, plans special development programs (poultry, fruit orchards, etc.), manages the marketing of crops, operates the fisheries department, and plans and builds farm buildings and houses.

b. Social development

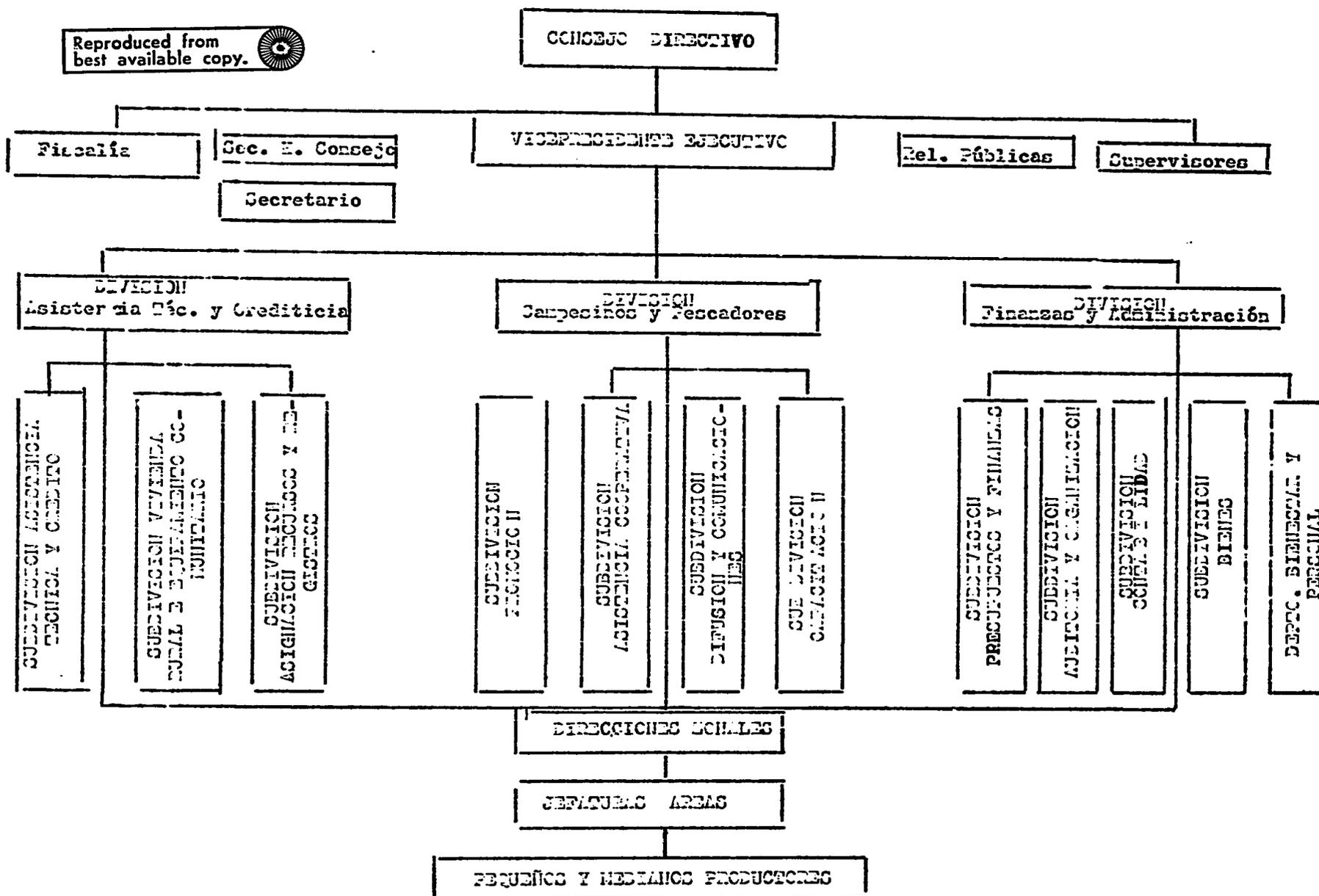
This division carries on two major activities: (1) organizing unions and cooperatives (2) educating farmers and fishermen along with their families.

³ In 1972 the zones of operation were changed to 16.

DIAGRAM 1

ORGANIGRAMA GENERAL DEL INSTITUTO DE DESARROLLO AGROPECUARIO

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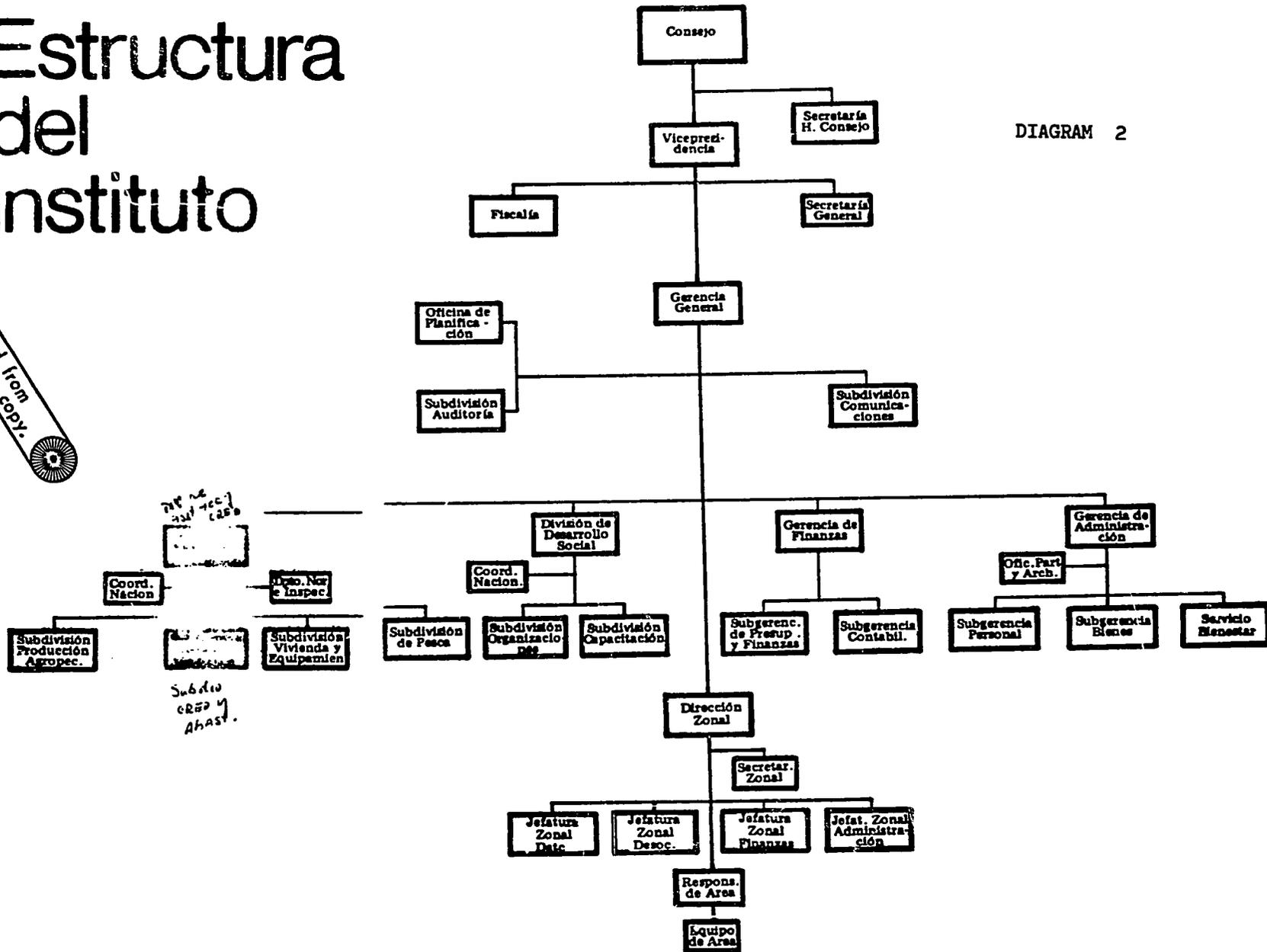
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Estructura del Instituto

DIAGRAM 2

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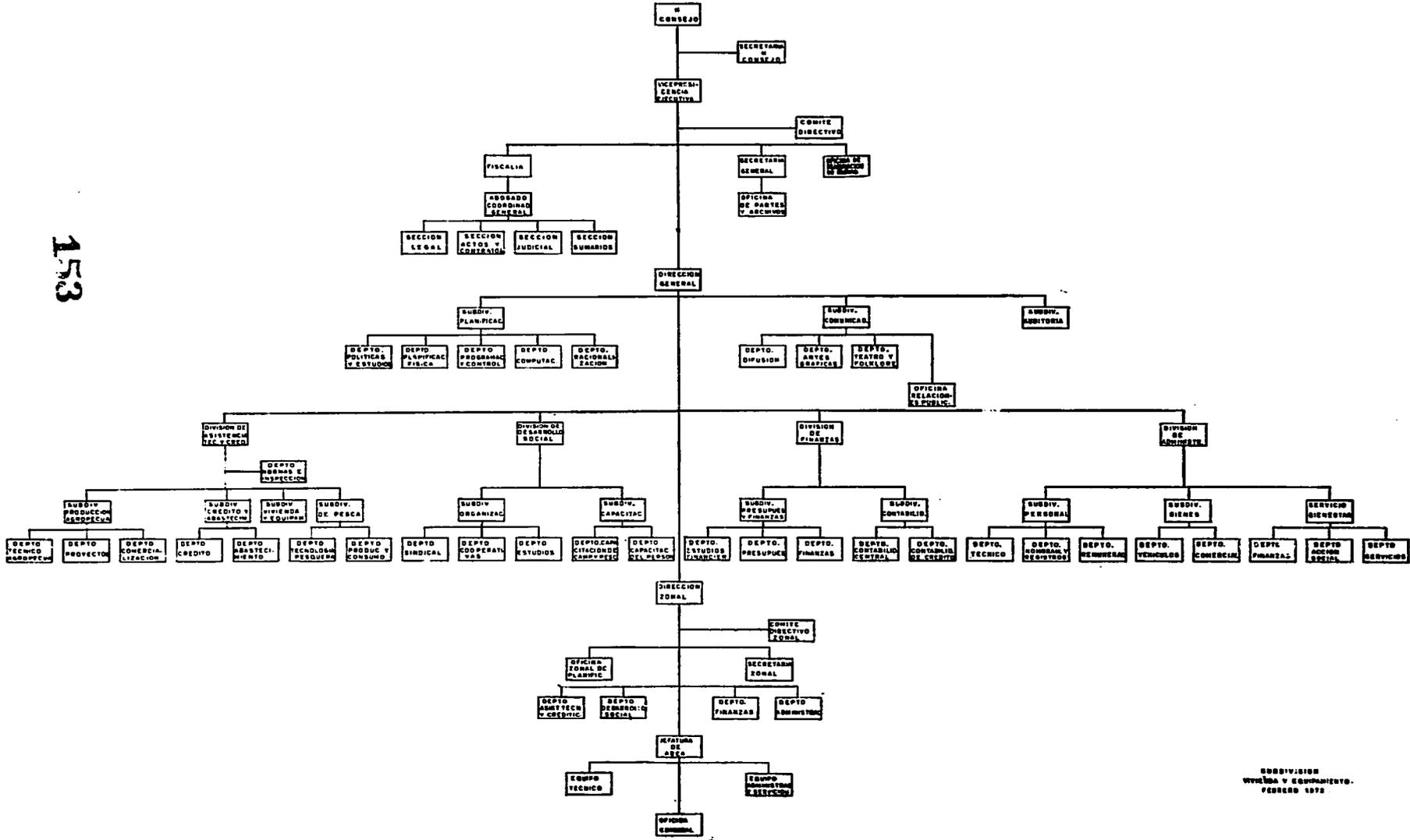
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INSTITUTO DE DESARROLLO
AGROPECUARIO
DEPTO. RACIONALIZACION

DIAGRAMA B
PIRAMIDE DE ORGANIZACION
-INSTITUTO DE DESARROLLO AGROPECUARIO-

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SUBDIVISION
VIVIENDA Y EQUIPOS
FEBRERO 1972

c. Finance

This division has the budget, does the general accounting, the financial planning and accounting for the credit transactions.

d. Administration

This division handles personnel, purchasing, stores and welfare.

The first two divisions are the guts of INDAP. During Phase I the first division was the most important and now during Phase III, the second division is the most important.

The Vice President (top executive of INDAP) manages this institution with the staff support of two sub-divisions: planning and communications. The latter is mainly public relations and advertising-propoganda arm of INDAP while the former is a recent attempt to do macro planning and institution wide evaluation.

2. Local Structure

The organization of INDAP in the countryside is illustrated at the bottom of Diagram 3. One can notice that the same general pattern established in the main office in Santiago is followed in the field, that is the four functional areas: technical assistance and credit, social development, finance, and administration. Each of the 16 zones has a director and staff in the four function areas that operate various "work areas" and *comunal* offices. Each zone operates as an autonomous unit which does its own planning and has its own budget. Thus, for example, credit applications don't have to be forwarded to the main office in Santiago but are granted or rejected right in the particular zone where they originate. Table 14 provides a breakdown of the various kinds of employees by zone. Note that 75 percent of all employees of INDAP work out in the field in a zone area.

TABLE 13

**INDAP's Zones of Operation,
the Areas of Operation
and the Corresponding Provinces**

<u>Zones</u>	<u>Areas of Operation</u>	<u>Provinces</u>
I	3	<i>Tarapaca, Antofagasta</i>
II	9	<i>Atacama, Coquimbo</i>
III	8	<i>Aconcaqua, Valparaiso</i>
IV	7	<i>Santiago</i>
V	8	<i>O'Higgins, Colchaqua</i>
VI	8	<i>Curico, Talca</i>
VII	7	<i>Linares, Maule</i>
VIII	8	<i>Nuble</i>
IX	7	<i>Concepcion, Aranco</i>
X	11	<i>Bio-Bio, Malleco</i>
XI	11	<i>Cautin</i>
XII	12	<i>Ualdivia, Osorno</i>
XIII	13	<i>Llanquihue, Chiloe</i>
XIV	7	<i>Aysen</i>
XV	<u>3</u>	<i>Magallanes</i>
	122	

TABLE 14

Total Employees of INDAP as of April 1972

<u>Zones</u>	<u>Administrative</u>	<u>Prof. and Technical</u>	<u>Clerical</u>	<u>Service</u>	<u>Total</u>	<u>FOLE*</u>
I	7	19	15	7	47	1
II	8	88	58	64	216	2
III	6	91	50	68	210	5
IV	7	111	67	51	232	4
V	11	90	68	48	212	5
VI	5	76	51	49	176	5
VII	5	71	52	38	164	2
VIII	3	81	72	68	217	7
IX	5	74	65	42	183	3
X	5	76	64	130	269	6
XI	6	148	68	89	305	6
XII	8	93	57	95	249	4
XIII	3	68	51	42	161	3
XIV	2**	62	32	56	142	2
XV	8	45	34	32	114	5
XVI	8	35	20	45	108	1
Santiago	<u>86</u>	<u>408</u>	<u>279</u>	<u>250</u>	<u>1008</u>	<u>15</u>
Totals	181	1636	1103	1174	4019	75

Source: INDAP, *Oficina de Planificación*, July 1972

* *Fomento Lechero* (FOLE) - the total employees of INDAP are overstated by the 75 employees of FOLE that work out of INDAP offices on this milk development program.

** This not figured into total because recent change.

D. Beneficiaries

1. Selection Criteria

The potential clients of INDAP amount to 90.6 percent of the agricultural population (CIDA).

They fall into two groups:

- a. Agricultural producers with land.
 - (1) Family size farmers
 - (2) *Minifundistas* (small farmers).
 - (3) Small comunal farmers (Indian and non-Indian).
- b. Agricultural producers without land and farm workers.
 - (1) Sharecroppers
 - (2) *Inquilinos*
 - (3) Migrant farm labor
 - (4) Specialized permanent farm labor.

To qualify for an INDAP loan you must meet the following characteristics:

- a. Insufficient income, less than medium family farm income.
- b. Limited educational background including contemporary technical knowledge, including illiterates.
- c. Very limited access to traditional sources of credit and product markets.
- d. Belong to social and union organizations that are in the process of forming to represent the client.
- e. Limited participation in the social and economic development of the country.

In practice these criteria are most difficult to apply so that the applications become arbitrary because:

- a. There are no indexes (nationally or regionally) on average income for medium size family farm.
- b. It is next to impossible to fairly estimate the income of each applicant.
- c. Some of the applicants are “farmer-merchants” who are members of the organizations that influence who receives credit and may choose to maintain the rural status quo and exclude the very poor.

The terms of lending on INDAP loans don't vary with borrower characteristics. The only variation can be found in the purpose of the loan. Credits utilized for cost of operation carry a 12 percent interest rate with up to 4 years in length, while credits for capital investment have a 15 percent interest rate with up to 8 years in term.

INDAP has no explicit presumption about differences in credit worthiness among its potential clients. But I believe their policy of aggregating small farm operators into committees and cooperatives implies some notion of economies of scale including reduction of risk. That is, besides the economies from the lender side in terms of administering technical assistance, there are assumed benefits from the recipient's side in terms of costs of operation.

INDAP has several options available to reduce poor client performance. It can deny credits to members not in good standing with their respective committee or cooperative, it can require all receivers of credit to have participated in at least one full year of technical assistance before credits are granted, it can deny additional credit to a borrower who has not fulfilled his repayment schedule on current loan and more. In practice, INDAP for reasons I will explain later (in Section F on Collection) has not generally applied measures to eliminate poor performance.

2. Graduation Policy

During Phase I there was a noticeable goal to graduate borrowers into the traditional credit market. But this idea has quietly faded as INDAP's clients have over the years been molded into an identifiable economic and political body. There would appear to be no current movement to have INDAP's clients move into and remain with the traditional general banking system. On the contrary, it appears, INDAP will become a permanent feature of the institutional credit system with its own special clientele.

3. Number and Types

Table 15 provides information on the beneficiaries of INDAP. The beneficiaries are distributed as to the type of credit they utilized. Thus, we see the emphasis on "operation" credit during Phase I. Then during Phase II the loan from the Interamerican Development Bank for "capitalization" credits shows its importance. Finally, during Phase III we see the shift to "organization" credits. Table 15 also shows those individuals who received just technical assistance from INDAP over the years. Each year this program has been expanded until it now reaches more people than the credit program.

It is not possible to provide time series with farm size, crops planted, etc. as this information is not gathered in the loan application, nor does INDAP's main office have any interest in making these kinds of analyses of its operations.

4. Other Sources of Credit

During Phase I it was very common for maybe up to one third of INDAP's clients to also be clients of the State Bank. Some of the most eager clients were the more knowledgeable small farmers who saw the advantageous terms available for them at INDAP. In this sense some of the people INDAP

reached first were precisely that group it didn't want to service--those capable of working with the traditional credit system. But as time went on INDAP began to attract those clients who were locked out of traditional sources or who had never borrowed except maybe in the informal market. Although this duplication or overlap still exists since the credit institutions are not coordinated and operate separately I don't believe it to be very common--or the percentage would be small--less than 10 percent.

There is no information available on prior indebtedness. I think it safe to say that one would find the whole range of cases from those with overdue debt in the banking system to those with no previous credit experience. I also believe that if INDAP were to stop operations now in 1972 somewhere between 70 to 85 percent of INDAP's clients would not be able to obtain loans from the institutional credit market with the conventional lending criteria.

5. Profile of Farm Community

I would say INDAP borrowers are a fairly homogenous group in terms of farm size, level of wealth, level of education, etc. But, of course, this will vary from region to region. It would be unusual, for example, to find an INDAP borrower with more than 50 *hectareas* of farm land. From the wealth side, to qualify for an INDAP loan one cannot have a net worth greater than 35 minimum salaries.

Certainly not all small farmers who could actually participate with INDAP are doing so. Of the 320,000 rural poor families in Chile in 1969 INDAP was reaching 12.2 percent with credits and 24 percent with technical assistance. This probably understates how well INDAP is doing since not all of the balance could really become clients of INDAP for farm credit. They might, however, qualify in the sense of potential unionization of workers for future State farms.

One cannot really generalize about the dispersion of small farms since this varies so much. However, one recent change should be noted. In the late 1960's the Agrarian Reform began to move rapidly with land expropriations and the Allende Administration has accelerated the process until by the end of 1972 the Minister of Agriculture has announced that all farms above the basic 80 *hectareas* will have been expropriated. Thus, this means small farms are no longer operated next to large farms.

TABLE 15
The Number of Beneficiars of the Different Types
of Credit and Technical Assistance
Granted by INDAP: 1962-1971

<u>Year</u>	<u>Operation</u>	<u>Capitalization</u>	<u>Organization</u>	<u>Fisheries</u>	<u>Total only Technical Assistance</u>	<u>Total Individuals</u>	<u>Total Organizations</u>
1962	10,143	--	--	--	--	10,143	--
1963	15,900	--	--	--	4,886	15,900	--
1964	20,380	--	--	--	10,207	20,380	--
1965	49,340	--	8	--	9,944	49,340	8
1966	51,243	1,203	23	28	48,895	52,446	51
1967	44,757	1,523	37	40	58,925	46,280	77
1968	44,099	2,062	68	32	66,563	46,161	100
1969	39,396	2,219	190	35	74,141	41,615	225
1970	38,841	753	130	70	N.A.*	39,594	200
1971	74,124	2,441	158*	192	N.A.*	76,565	350

Sources: INDAP: *Direccion de Operaciones: Informaciones Estadisticas, Abril, 1970.*

Informe Sobre la Evaluacion de la Accion de INDAP, Vol. II, ICIRA, Dec., 1971

INDAP, Office of Planning, July 1972

* This represented 36,208 farmers

** Not available.

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E. Lending Policies and Procedures

1. Portfolio

INDAP began its operations in 1962 by offering supervised credits. The following year technical assistance was combined with the agricultural credit. During Phase I INDAP operated with only this one type of credit, *credito agricola comunitario* (comunitary agricultural credit). Later on the name of this type of credit was changed to *credito agricola de operation* (operation agricultural credit). This credit is granted to small farm owners, renters, sharecroppers, farm laborers that are organized into "comites campesino" (committees of rural poor). The "committees" have no legal standing and are just an organization tool to permit the transmission of technical assistance in group form. In other words, it was an attempt to economize on the whole idea of supervised credits to small borrowers who in large part have never been clients of the traditional financial markets. A glance at Table 16 will demonstrate that the bulk of these early credits went for the planting of crops, that is for the acquisition of seed, fertilizer and pesticides. A total of 100, and 96 percent was granted for planting in 1962 and 1964. Apart from funds for crop loans to members, *comites* may borrow to build storage facilities so they can aggregate production and sell directly to centers of consumption. Loans granted to *comites* carry group responsibility.

During 1966 INDAP received a \$11,000,000 loan from the Fund for Special Operation of the Interamerican Development Bank to expand its credit activities during 1966 and 1967. This loan brought forth Phase II and permitted INDAP to make loans to small farmers for the purpose of investing in semi-fixed and fixed capital. This new second type of credit was called *credito orientado de capitalización* (credits oriented for capitalization). The objective was to produce an impact on the internal structure of production, thereby creating the base for augmenting income and increasing the agricultural produce for the mass consumer market. More than 10,000 small farmers were expected to receive credit for investment in beef and dairy cattle, construction (fences, poultry house, irrigation canals) vineyards and fruit trees, soils and farm equipment. With this loan INDAP contemplated reaching a total of 81,464 *campesinos*: 56,076 with technical assistance and credit and 25,388 with just technical assistance.

TABLE 16

Percentage Composition by Projects of the Operation
Credit Granted by INDAP (Various Years)

<u>Project</u>	<u>1962</u>	<u>1964</u>	<u>1966</u>	<u>1970</u>	<u>1971</u>
Seeds, fertilizers, pesticides	100	96	74	72	60
Farm Animals	--	2	9	6	21
Agricultural implements	--	--	3	5	4
Soil improvements	--	2	12	12	10
Buildings improvements	<u>--</u>	<u>--</u>	<u>2</u>	<u>5</u>	<u>5</u>
	100	100	100	100	100

Sources: *Analysis del Programa de Credito Desarrollado por el INDAP en el Period 1962-1967, February 1968, p. 8 and INDAP, Oficina de Planificacion, July 1972.*

Also, Phase II brought forth a third type of credit, *credito directo a organizaciones* (direct credit to organizations). These credits attempted to build and strengthen the cooperative movement in Chile and in particular make the cooperative a viable organizational form for small farmers. The initial aim was for 100 cooperatives with credits to finance construction of warehouses, irrigation systems, machinery and transport vehicles. There are now seven credit lines open which include:

1. Credits for current operation.
2. Credits for semi-fixed and fixed capital investments.
3. Credits to develop structure necessary for production and marketing.
4. Marketing advances up to 50 percent of the value of the harvest.
5. Credits to purchase agricultural machinery and transport.
6. Credits for organizational equipment necessary to fulfill the social, economic and cultural objectives.
7. Credits to contract specialized personnel (managers, legal advisers, etc.)

Finally, during Phase II, INDAP began a fourth type of credit, *credito pesquero*, (fishing credit). This credit program offers technical and financial assistance to develop and improve small scale fishing industry. In addition, this program attempts to raise the social, economic and educational level of the people devoted to this activity. Under this type of credit program, loans are made directly to the fishing cooperatives or to members of the fishing cooperatives. INDAP prefers to lend directly to the cooperatives and have the cooperatives disburse the loans to the members of the cooperative. However, in some cases the administration of the cooperatives is not sufficiently developed to permit this line of action so loans are made directly to the members. A glance at Table 17 will demonstrate that this type of credit has remained a relatively small part of the total credit program of INDAP, never reaching more than 5 percent of total credits granted. In addition to credits for the production and marketing of fish there are also credits to improve the collective consumer services for cooperative members.

A fifth type of credit program, *credito de anticipo de comercialization*, (marketing advances) was introduced in 1971. These credits are short term (from 60 to 90 days) and used for such crops as tomatoes. It has been incorporated into the "organization" credit program and as of 1972 was of minor importance as a percentage of total credits. It should, however, be recognized that this represents another step by the current government to make the cooperative a viable organizational form for Chilean agriculture.

Phase III has produced two important changes in lending policies. First, INDAP made an application to the Interamerican Development Bank for another loan so that it could continue and expand its credit oriented for capitalization. As of August, 1972 no action has been taken by IDB and there appears little

TABLE 17

**Distribution of the Different Types of Credit Granted
By INDAP as a Percentage of Total Credits
(Selected Years)**

<u>Credit Types (Year Started)</u>	<u>1963</u>	<u>1965</u>	<u>1967</u>	<u>1969</u>	<u>1972*</u>
Operation (1962)	100	99	65	47	42
Organization (1965)	--	1	4	12	49
Capitalization (1966)	--	--	28	36	9
Fisheries (1966)	--	--	3	5	**
Marketing (1971)	--	--	--	--	***

Source: *Informe Sobre La Evaluacion de la Accion de INDAP, Toma II, Instituto de Capacitacion e Investigacion en Reforma Agraria, ICIRA, Santiago de Chile, Diciembre 1971*

NOTES: * Programmed for 1972.

** Presented included within "organization" with an amount about equal in weight to 1969.

*** Presently included within "organization" with an amount not more than one percent of total credits.

likelihood that this loan will be granted during Allende's current administration. This has caused INDAP to de-emphasize this part of its credit operation for pure lack of funds. Secondly, and most important, INDAP is making an all out effort to organize the "non-reformed" part of the agricultural sector. The masses of rural poor are being organized into producers' cooperatives and into rural labor unions. Loans are designed to finance all the activities that will enable the development of these organizations. Table 17 shows how the relative weight of credit to organization has increased during Phase III. Note that the planned credits for 1972 call for almost half towards "organizations" (that is to say, principally cooperatives).

INDAP Credit Procedures for 1971 by Type of Credit

A. For Operations Credit

Purpose: Provide necessary funding for:

- (a) Seasonal crops, permanent and semi-permanent.
- (b) Small livestock maintenance costs .
- (c) Minor capital investments.

Credit is made effective by release of commodities (seeds, fertilizer, pesticides, wire, roofing, work animals, equipment, etc.)

Maximum Amount:

(1971) E^o 17,104 per applicant (for 1971 plus 22.1% or E^o 20,884)

Term: From 18 months to 4 years, depending on type of credit and capacity for repayment.

Interest: 12% per annum not subject to readjustment to compensate for inflation.

Beneficiaries:

- 1. Incorporated rural organizations serving as trustees to sub-contract loans to its associates.
- 2. Members of these organizations directly.

Requirements:

- 1. **For organizations:**
 - to have an efficient administration
 - to have an internal body of rules for granting credit to members
 - being up-to-date with obligations to INDAP
 - having a membership of farmers, farm workers or small producers
- 2. **For individual members**
 - Affiliation to a rural organization
 - Net assets not to exceed 35 rural minimum salaries
 - Being directly in charge of administration and operation of an holding and employing no more than 3 salaried workers

- Farming operation being his chief source of income.

Guarantees: Fundamentally of a personal trust nature, although INDAP may require real securities.

B. For Capitalization Credit

Purpose: Financing of installation, enlargement and/or technological improvement of economic production units through seven lines of credit financing (fixed or semi-fixed investments, materials, specialized manpower, etc.)

Maximum Amount: (1971) E^o 131,868 for the province of Magallanes and E^o 87,912 for the rest of the country (the equivalent of US \$4500 and US \$3,000 respectively).

Note: Conversion rate for 1971 is assumed at E^o 24 per US dollar).

<u>Terms:</u>	Dairy	5 years
	Sheep, hogs, poultry	5 years
	Fruit and vineyard	8 years
	Soil improvement and agricultural machinery	6 & 4 years
	Small industries	5 years

Interest: 15% per annum, no readjustments for inflation.

Period of Grace:

One to four years, depending on specific line of credit.

Guarantees: Fundamentally of a personal trust nature, although INDAP may require real securities.

Beneficiaries: Members of rural organizations. There are two alternate norms for granting these credits:

- (a) Credit for individual operation.
- (b) Individual credit to finance operations of productive community enterprises with indorsement by the respective rural organization.

Requirements: In general, similar to those under Operations Credit.

C. For Direct Credit to Organizations and Fishery Cooperatives

Purpose: Financing of capital investments and services required by farmer organizations to achieve its economic and social goals.

Varieties:

- (a) Loans for fixed or semi-fixed capital investments (infrastructure construction works, installation and enlargement of marketing facilities and mechanization, etc.)
- (b) Operational budget loans.

Maximum Amount: Up to 100% of funding requirement of the project.

Terms: Up to 15 years for capital investment loans and up to one year for operational budget loans, with option for extension.

**Readjustments
for Inflation**

Compensation: In cases of loans on terms beyond 5 years and in excess of 5 minimum salaries as paid in industry and business,

Interest: 15% per annum and 2% for readjustable loans.

Beneficiaries: Incorporated farmers and fishery organizations, with exceptions as rated by the Vice-President.

Requirements:

Similar to those applicable to the other credit systems.

Guarantees: Fundamentally of a personal trust nature, although INDAP may require actual securities.

There is also a fishery credit regulation for individual members of fishery organizations contemplating loans for the purchase of marine engines and other gear.

Maximum Amount:

Ten yearly minimum salaries as paid in industry and business (E⁰ 122,040 in 1971).

Interest Rate: 15% per annum.

Terms: Up to 6 years.

Table 18 shows the total loans made by INDAP over the entire period in *Escudos* of each year. The loans are divided into the four main credit types. The table reveals the shift of emphasis from "operation" type credits to "organization" type credits.

Table 19 shows the breakdown of "operation" type credit in terms of the purpose of the loan to show what credits are extended in "kind" and what in "cash". The table illustrates the policy of INDAP to loan in kind whenever possible. This is INDAP's way to control the use of the credits although I will point out later (in section on Evaluation) how this can be aborted by small farmer borrowers.

TABLE 18

Credit Granted by INDAP
By Type of Loan for the Period 1962-1971
(Escudos of Each Year)

<u>Year</u>	<u>Operation</u>	<u>Capitalization</u>	<u>Organizations</u>	<u>Fisheries</u>	<u>Total</u>
1962	1,203,234	--	--	--	1,203,234
1963	6,146,033	--	--	--	6,146,033
1964	10,951,619	--	--	--	10,951,619
1965	25,193,869	--	346,857	--	25,540,726
1966	25,576,333	5,229,000	560,536	388,149	31,754,009
1967	29,169,414	12,093,300	1,230,178	1,361,571	43,854,436
1968	36,576,022	26,929,327	6,734,366	--	
1969	51,738,898	39,707,325	12,959,867	--	
1970	66,213,000	19,122,000	28,828,000	--	
1971	177,660,100	53,175,600	72,424,400	--	

Sources: Analysis Del Programa de Credito Desarrollado por el Instituto de Desarrollo Agropecuario en el Period 1962-1967, Indap, February 1968

TABLE 19

Operational Credit Distributed as to Credits in Kind
Or in Money during 1971 by INDAP (*Escudos* of 1971)

<u>Purpose of Credit</u>	<u>Kind</u>	<u>Money</u>	<u>Total</u>
Seeds, fertilizer, pesticides	103,930,818	--	103,930,818
Farm Animals	--	36,090,228	36,090,228
Agricultural Implements	16,085,009	1,000,000	17,085,009
Soil improvements	43,154,992	--	43,154,952
Building improvements	<u>6,266,670</u>	<u>2,000,000</u>	<u>8,266,670</u>
Totals	169,437,489	39,090,228	208,527,717

2. Interest Rates

From the outset INDAP has had a policy of offering low cost loans to the small farmers. A glance at Table 20 will reveal that the rates of interest charged by INDAP have always been lower than agricultural loans made by other state and private institutional lenders. In some years the typical bank rate was twice what INDAP was charging on its loans. Also, Table 20 shows that the real rates charged by INDAP have always been negative due to the inflation. One should note this point is also true for the average bank rate.

Table 21 permits us to make comparisons between other state development institutions for 1969. Strangely, INDAP has a higher rate of interest on loans for capital investment than for credits on costs of operation. All other lenders have the reverse pattern or the same rate for both types of loans. Also note that INDAP's loans are not readjustable for changes in the cost of living, i.e., inflation.

3. Collateral

INDAP does not require real collateral, i.e., mortgage of the farm, title to real assets, or a co-signer. The guarantee is the personal signature of the borrower. The relationship is designed to be one of personal trust. This in part is required since many of its current borrowers could not deliver the conventional guarantees.

4. Other Subsidy

In addition to the subsidy through the negative rates of interest one might include:

- a. Those borrowers who know they will never have to repay a previous loan whether the cause was the 1968 drought or just poor farm management.
- b. Gratuitous technical assistance.
- c. The long terms of repayment (up to 8 years) without readjustments for the inflation reduces the real burden of repayment.

5. Appraisal Techniques

In order to obtain credit a *campesino* must belong to an organization such as a committee or cooperative. Next, the *campesino* must present an application at the local office of INDAP. The loan application is much shorter and more simplified than the usual loan application from a commercial bank. It has four parts:

- a. Personal data of applicant (name, address, marital status, etc.)
- b. Declaration of income (sources and amounts).
- c. Purpose of credit and expected income from credits.
- d. Specific inputs (fertilizers, seeds, etc.) that applicant needs.

After application is turned in an employee from the local office of INDAP makes an on the farm inspection to verify the information contained in the loan application. If everything goes well the application can be returned to the local office and approved.

TABLE 20

**Comparison Between Nominal and Real Rates of Interest
Charged by INDAP and Banking Institutions**

<u>Year</u>	<u>CPI</u>	<u>INDAP Nominal Rates***</u>		<u>INDAP Real Rates</u>		<u>Bank Nominal Rate</u>	<u>Bank Real Rate</u>
1962	27.7	6	9	-22	-19	15	-13
1963	45.4	6	9	-39	-36	14	-31
1964	38.4	6	9	-32	-29	14	-24
1965	25.9	6	9	-20	-17	15	-11
1966	17.0	6	9	-11	- 8	16	- 1
1967	21.9	9	12	-13	-10	16	- 6
1968	27.9	9	12	-19	-16	17	-11
1969	29.3	9	12	-20	-17	19	-10
1970*	34.9	15	18	-20	-17	20	-15
1971**	22.1	12	15	-10	- 7	15	- 7
1972	24.9****	12	15			15	

* In 1970 introduced a penalty rate of 4% for all overdue loans.

** In the second semester of 1971 the Central Bank lowered the ceiling rate of interest to 18 percent which explains why interests rates dropped in 1971. In July, 1972 this ceiling was raised to 24 percent but all banks who lend to *campesino* organizations can't charge higher than 12 percent.

*** The lower rate refers to (CAC) credits and the higher to (COC) and (CDO) credits.

**** These rates are year averages and they have been rounded off.

Sources: *Banco Central de Chile, Bolentin Mensual*, Santiago, various years.

TABLE 21

Nominal Rates of Interest Charged by State Development Institutions in 1969

	Loans for Costs of Operation		Loans for Capital Investment			
	Interest	Term	Interest	Readjustable	Index of Readjustment	Term
INDAP	9.00%	Up to 4 years	12.00%	No	-	Up to 8 years
State Bank	19.93%	1 year	19.93%	No	-	5 years
CORA	10.00%	1 year	4.00%	Yes	Cost of Living	-
CORFO	-	-	6.00%	Yes	Cost of Living	-

Source: *Solicitud de Prestamo al Banco Interamericano de Desarrollo*, INDAP, Santiago, November 1970, Table 34.

F. Collection

1. Repayment Record

The collection procedure at INDAP is very flexible and convenient for the borrower. A repayment schedule is individually set up for each borrower so as to maximize the capacity to repay. However, collection has proven to be a special problem for INDAP. The following factors have contributed to INDAP's low rate of collections over the years:

- a. The rural poor experienced many years of promises of a better life from all types of politicians. When INDAP came into existence some rural people interpreted this as the governments' finally coming to the aid of the rural peasants. The assistance offered was treated as a right the rural poor had in sharing in the bounty of the country and not a relationship with reciprocal obligations.
- b. Some borrowers used credits as "subsistence" financing or pure consumption credits which resulted in no residual left over to pay back the loan. Another way of interpreting this would be lending to clients of very high risk or little potential to repay. In the early years I think there was surprise at this reality but later on it was taken for granted that some of the loans would not be repaid and that, in fact, one of INDAP's functions was to make rural welfare transfers or payments through its credit operations.
- c. Adverse natural conditions like drought have made it impossible for some to repay loans. Most of the farmers operate on such a small margin that any unforeseen difficulty can throw their operation into the red.
- d. INDAP personnel have not made real effort to screen out the high risk borrowers because overall institutional objectives (maximize farmers serviced and form organizations like committees, cooperatives and unions) have placed low priority on collection.
- e. The loan application form which is to contain a plan of operation is not taken seriously enough to eliminate the high risk applicants.

INDAP has been very reluctant to release information on outstanding debt, how old it is, what debt has been written off as uncollectable, or any other information about the collection process. Even internally little is known about collections and little or no records kept on it.

From one INDAP informant I was told that during the period 1966 to 1970 the best collection record was made on the "capitalization" credits with repayments running about 70 percent. During the period 1970 to the present the best record was being maintained by the "organization" loans with repayments averaging about 45 percent.

Another INDAP informant gave me the following information on collections according to credit type:

- a. Operations credits. . . .from 30 to 40 percent.
- b. Capitalization credits. . . .from 35 to 45 percent.
- c. Organization credits. . . .from 50 to 60 percent.

In 1972 the Sub-division of Planning undertook a study of collections and came up with the following information on repayments and outstanding debt. In Table 22 the repayments are listed by type of credit. The year 1972 is compared with 1971. It is fairly difficult to interpret this data since it can represent payment on credit going back as far as 1965. Table 23 shows the current debt and overdue debt, and comes up with only about 16 percent of total debt in the overdue category. This figure happens to be very close to the goal INDAP strives for. I would not put too much weight in this figure and would guess that some debts must have been written off as uncollectable so as to reach only 16 percent. As doubtful as this data might be, it is presented as the only officially available data.

Lastly, the ICIRA field study of INDAP had the following to say about collections at INDAP. The system of accounting in the field and in the main office was not sufficiently coordinated to permit an analysis of accounts to determine the collection situation. This also meant the field employees of INDAP were not in a position to make day to day decisions on the basis of the actual situation of a client but only some previous position. This didn't stop the ICIRA team from stating that "for a series of indicators observed in the field, we presume that there exists a high percentage of overdue debts."⁴ The team reviewed the payment cards of some clients and found a number who had not completed their payments on the date required. In some cases, the borrowers just stopped making any further payments.

⁴ICIRA, *Informe Sobre la Evaluacion de la Accion de INDAP*, Volume II, Santiago, Chile, December 1971, pp. 42-45.

2. Methods

At the time of the loan an individualized repayment schedule is worked out for the borrower. Usually the debt is divided into installments to be paid within one year. Sometimes one lump sum payment is made shortly after the harvest. All repayments are made in cash at the INDAP area field office.

3. Special Enforcement Procedures

INDAP does not take any "special" measures to enforce repayment of loans. It does, however, utilize traditional methods such as:

- (a) deny new loans until all old loans have been repaid.
- (b) deny credit to a member of group who is delinquent within the group but continue granting credit to the group.
- (c) rely on the "moral suasion" of field employees who visit delinquents and try to convince them on the importance of repayment for themselves and the program.

It appears that group sanctions are the most effective. That is, when credit is granted to a cooperative its members apply pressure to make repayments on time.

4. Rescheduling

INDAP has no official policy on rescheduling. What INDAP has done might be called ad hoc rescheduling. When it has been clear that payment would not be forthcoming on time or not at all INDAP has altered the term or just written off the debt. No information is available on this as the problem is too sensitive for relations with outside lenders (IDB) or for public relations within the country. For example, the right wing press has been known to circulate rumors about poor repayment records of INDAP borrowers.

TABLE 22

Credit Repayments in 1971 in Total, by Zones and by Type of Credit

Zones	Type of Credit				
	Operation	Capitalization	Organization	Fisheries	Total
I	50,121	357,387	143,225	377,562	928,295
II	742,073	2,485,705	2,371,735	303,926	5,903,439
III	443,125	4,693,668	826,197	318,968	6,282,048
IV	731,282	1,874,565	1,727,918	149,172	4,482,937
V	428,736	4,141,561	830,752	-	5,401,049
VI	591,688	3,773,985	686,498	-	5,052,171
VII	315,764	3,073,304	80,076	-	3,469,144
VIII	651,135	4,051,441	104,998	-	4,807,574
IX	827,131	2,289,694	995,778	609,145	4,721,748
X	886,750	3,779,480	1,153,367	-	5,819,597
XI	1,183,626	9,761,353	357,454	3,500	11,305,933
XII	1,016,393	4,067,757	688,347	101,430	5,873,927
XIII	1,258,896	9,192,544	587,077	757,311	11,795,828
XIV	910,333	1,185,704	789,560	563,492	3,449,089
XV	<u>532,091</u>	<u>575,891</u>	<u>59,091</u>	<u>355,088</u>	<u>1,522,161</u>
	10,569,234	55,304,039	11,402,073	3,539,594	80,814,940

Repayments of 1970 Compared with 1971 at National Level

(Thousands of Escudos of 1971)

Year	Operation	Organization	Organization	Fisheries	Total
1970	9,372.4	48,931.3	5,288.5	2,123.6	65,715.8
1971	10,569.2	55,304.0	11,402.1	3,539.6	80,814.9
% Increase	12.77	13.02	115.60	66.68	22.98

Source: Gerencia Finanzas INDAP

TABLE 23

Outstanding Debt: Consolidated to December 1971 (*Escudos* of 1971)

Zones	TOTAL DEBT			OVERDUE DEBT			CURRENT DEBT				
	1	2	3	4	5	6					
	Total Debt	No. of Farmers	Av. Debt per Farmer	Overdue Debt	% 3/1	No. of Farmers	Av. Overdue Debt per Farmer	Current Debt	% 5/1	No. of Farmers	Av. Current Debt per Farmer
I	3,299,299	642	5,139	440,088	13.34	328	1,341	2,859,311	86.66	375	7,624
II	27,374,887	10,117	2,705	4,709,352	17.21	4,908	959	22,665,535	82.79	5,856	3,870
III	30,535,779	2,854	10,699	2,150,543	7.05	877	2,452	28,385,236	92.95	2,160	13,141
IV	30,767,049	2,565	11,994	4,507,644	14.66	1,514	2,977	26,259,405	85.34	1,383	18,987
V	56,988,191	3,581	15,914	7,969,586	13.98	2,348	3,394	49,018,605	86.01	1,996	24,558
VI	19,492,759	4,318	4,514	5,557,041	28.51	2,202	2,523	13,935,718	71.49	2,630	5,298
VII	26,789,314	6,420	4,172	6,453,301	24.09	2,042	3,160	20,336,013	75.91	5,200	3,910
VIII	24,495,919	6,009	4,076	3,672,083	15.00	1,514	2,425	20,823,836	85.00	4,072	5,113
IX	26,841,133	6,473	4,146	4,758,008	17.73	2,756	1,726	22,083,125	82.27	3,975	5,555
X	36,846,018	9,922	3,713	6,227,081	16.91	5,413	1,150	30,618,937	83.09	5,383	5,688
XI	56,291,773	24,989	2,252	7,214,396	12.82	10,832	666	49,077,377	87.18	14,943	3,284
XII	40,945,373	10,066	4,067	7,913,790	19.33	5,511	1,435	33,031,583	80.67	6,585	5,016
XIII	49,962,907	18,622	2,683	8,495,276	17.00	8,794	966	41,467,631	83.00	12,708	3,263
XIV	19,756,365	2,021	9,775	2,430,900	12.31	777	3,128	17,325,465	87.69	1,745	9,928
XV	8,351,636	618	13,513	659,447	7.90	158	4,173	7,692,189	92.10	589	13,059
Totals	458,738,502	109,217	4,200	73,158,536	15.94	49,974	1,463	385,579,966	84.00	69,600	5,539

Source: *Depto. Contabilidad de Creditos INDAP*
División de Finanzas
 /11v.-

G. Costs and Finance

1. Portfolio Profits and Losses

The only time series information on receipts and expenditures is shown in Table 24. This information will be utilized in the next section on Evaluation. Any analysis of the sources and uses of funds is complicated by the fact that INDAP carries on two separate activities: (1) technical assistance and credit, and (2) social development - organizaing unions and cooperatives. The budgeting and accounting for these activities is not done separately but in lump sum. This can make a straight forward cost of credit ratio look very unfavorable for INDAP. Thus, average costs per loan calculated from INDAP data would be of little value.

2. Administrative Costs

By and large the operating costs of INDAP (wages and salaries, purchase of goods and services and transfers) are funded out of fiscal contributions. Probably the largest cost saving method utilized by INDAP has been their "group" approach. Whether in administering technical assistance or providing education programs, the stress has always been to work with groups to lower per client costs. Lately, the government has been economizing by using more media, radio, comic books, newspapers, etc. to inform and/or educate. In the case of INDAP there is no way one can distinguish between the costs of administering the loan and administering the technology.

3. Beneficiary Savings

INDAP has never had and does not anticipate starting a savings program or equity investment scheme. There is no effort made by INDAP to particularly encourage its clients to engage in formal savings programs.

4. External Finance

The funds for credit extensions for investment in warehouses and debt service are obtained from loan repayments, national credits (from the State Bank) and foreign lenders (mainly the Interamerican Development Bank). The IDB extended a \$10 million loan in 1962 and another \$10 million loan in 1966. Again by referring to Table 24 one can see the breakdown of these sources over the period 1964 through 1969.

5. Institutional Solvency

The only information is contained in Table 24.

6. Foreign Exchange Balance

There is no direct way to determine the impact of INDAP on Chile's foreign reserves. However, I would speculate it is adverse since its operations do consume some positive level of reserves but do not directly bring dollars to Chile.

TABLE 24

Annual Receipts, Expenditures and Investments of INDAP for Various Years
(In Thousands of 1970 *Escudos*)

Receipts	Effective Budgets											
	1964 s	%	1965	%	1966	%	1967	%	1968	%	1969	%
Fiscal Contribution	65,851	41.7	103,580	35.5	179,441	59.3	142,422	45.-	160,314	50.9	157,941	46.7
Loan Repayments	16,699	10.6	16,913	5.8	30,492	10.9	44,314	13.3	39,517	12.5	47,448	14.-
Other Receipts	18,081	11.5	55,980	19.1	38,585	12.8	55,815	17.6	58,009	18.4	59,009	17.4
Administrative Funds	43,485	27.6	40,441	13.8	4,156	0.5	2,224	0.7	3,646	1.2	4,591	1.4
Loans	13,612	8.6	75,390	25.8	49,763	16.5	72,274	22.8	53,743	17.-	69,388	20.5
National	-	-	30,725	10.5	38,731	12.8	44,230	13.9	22,214	7.-	30,060	8.9
Foreign	13,612	-	44,665	15.3	11,032	3.7	28,044	8.9	31,529	10.-	39,328	11.6
Total Receipts	157,718	100	292,304	100	302,437	100	317,069	100	315,229	100	338,377	100
Expenditures from Current Budget												
Remunerations	12,683	10.3	61,680	22.6	80,841	28.8	99,619	32.9	87,680	30.1	109,079	34.2
Purchases of Goods and Services	7,418	6.-	19,132	7.0	21,089	7.5	37,858	12.5	43,506	15.0	29,608	9.3
Transfers and Funds from 3rd Parties	39,490	32.2	43,165	15.8	26,920	9.6	5,352	1.7	4,486	1.5	8,280	2.6
Expenditure Sub-total	59,591	48.5	123,977	45.4	128,850	45.9	142,829	47.1	135,672	46.6	146,967	46.1
Capital Investments												
Real Investment	6,746	5.5	11,549	4.2	19,295	6.9	13,414	4.4	11,830	4.1	6,990	2.2
Credit Investments	55,892	45.5	100,294	36.9	104,217	37	136,035	44.9	136,078	46.8	152,318	47.8
Capitalization	-	-	-	-	(6,143)	(2.-)	(29,252)	(9.6)	(40,712)	(14.-)	(47,753)	(15.-)
Fisheries	-	-	-	-	-	-	-	-	(3,523)	(1.2)	(3,827)	(1.2)
Organization	-	-	-	-	-	-	-	-	(7,949)	(2.8)	(16,760)	(5.3)
Operations	(55,892)	-	(100,294)	-	(98,074)	(35.-)	(106,783)	(55.3)	(83,894)	(28.8)	(83,978)	(26.3)
Other Investments	469	0.4	7,118	2.6	712	0.3	722	0.2	1,071	0.4	2,099	0.6
Amortization of Debts	34	0.1	29,839	10.9	27,927	9.9	10,176	3.4	6,210	2.1	10,610	3.3
Investment Sub-total	63,141	51.5	148,800	54.6	152,151	54.1	160,347	52.9	155,189	53.4	172,017	53.9
Total Expenditures and Investment	122,732	100	272,777	100	281,001	100	303,176	100	290,861	100	318,984	100
Surpluses	34,986	-	19,527	-	21,436	-	13,893	-	24,368	-	19,393	-

Source: INDAP: 64/70, Santiago, October, 1970, N.P.

H. Complementary Factors

1. Technology

a. Directing, Tying and Packaging

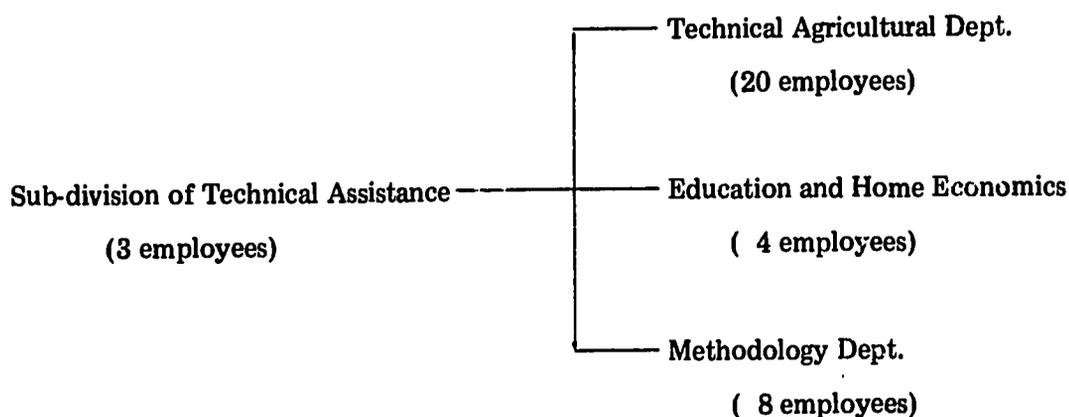
Whenever possible INDAP's credits are extended in kind not only to ensure the proper use of credit but to have control over the utilization of advanced technology. A glance back at Table 19 will demonstrate how the majority of credits for "operations" are made in kind. Only in the case of investments in farm animals are money loans always extended.

From 1965 to 1970 there has been a large increase in the use of insecticides, herbicides and fertilizer. There has also been an increase in the utilization of certified or registered seeds. In this way INDAP has not had the problem of passing on new technology to the small farmers, but the technology is already incorporated within the inputs INDAP has available to lend.

b. Program Extension and Supervision

The Sub-division of Technical Assistance really did not get underway until April of 1965. Before that date technical assistance was administered jointly with the supervised credit. Until the first part of 1965, the Sub-division functioned with only one dependent, the Technical Agricultural Department made up of 7 agricultural engineers and 1 veterinarian. In 1966 one more dependent was added: the Educational and Home Economics Department. Finally, in 1967, the Methodology Department was added.

The organization of the Sub-division of Technical Assistance looked as follows in 1967:



A breakdown of the various type of personnel working the field in the area of technical assistance is provided in Table 25.

TABLE 25

**Professional and Technical Personnel
Working in the Field for INDAP as of
December, 1966**

<u>Type</u>	<u>Number</u>
Agricultural engineers	75
Veterinarians	33
Home economists	38
Orienters	16
Fisheries technicians	10
Agricultural technicians	92
Agricultural apprentices	<u>414</u>
Total field personnel	678

Source: Memoria de la Asistencia Tecnica: 1962-1966, Subdivision Asistencia Tecnica
(D.A.T.C.), July 1967

By 1970, nearly all technical assistance was oriented to organizations such as committees, cooperatives, labor unions, and female centers with credit from INDAP. When it wasn't possible technical assistance was given to individual *campesinos* with INDAP credit. Also, there were some cases of technical assistance being given organizations that were not receiving credits. The following group methods were utilized to bring technical assistance down to the farm level without being too costly: demonstration farms, on the farm visits, organization meetings, agricultural tours, expositions, circulars, on the farm demonstrations, and conversations.

c. Other Arrangements for Technical Transfer

There is no extension service available to the small farmers except that offered by INDAP. The small farmers are isolated from the information flows on new technical developments within agriculture. They are isolated in terms of distance to population centers, ability to understand or interpret new methods, reluctance to try new methods or products, little or no experience with institutions that produce or disseminate new technology, and more.

In INDAP, credit and technical assistance are all together under the same department at the national and regional levels. In fact, in the field it is not uncommon to have one person doing both activities.

INDAP does not take the technical transfer process for granted. Just making credits available in most cases is a necessary but not sufficient condition for adopting new techniques. It has proven very difficult to convince the majority of small farmers that new methods are truly proper and important for them.

d. Nature of Technology

The bulk of the new technology transferred to small farmers comes from the use of certified or registered seeds and synthetic fertilizers. Small farmers are also using more insecticides and herbicides. They all have the characteristic of embodied technology which is the easiest to transfer. After this there is the whole range of extension service type activities ranging from home economics to efficient irrigation practices. But the latter technical transfers require that the user actually adopts the new methods where the former technology is automatically transferred once the credit is taken by the farmer.

The credits are granted theoretically as part of a "plan of production" which should include the whole range of proper methods from planting to harvesting. But in practice the experience varies so much no generalization can be made as to how well and how fast the techniques are being transferred.

2. Supplies and Sales

a. Program Supplies

All agricultural inputs made available through INDAP credits are picked by the farmers from local INDAP warehouses. The credit cum extension agent ordinarily does not handle the supplies as a separate office clerk takes care of it. I have no information on the price of inputs sold through INDAP.

b. Program Infrastructure

INDAP will finance capital projects that could be considered "infrastructure" like feeder roads, irrigation systems, storage facilities, farm buildings, etc. However, this type of financing is not very significant in the total credit program. Also, this type of loan is more common under the "organization" lending, i.e., to a cooperative.

c. General Access and Availability

There is no question that the bulk of the small farmers serviced by INDAP have little or no access to the quantity or more important quality of supplies provided through the credit program. Before INDAP came into existence these farmers were using seed held over from the previous harvest or buying natural seeds from the local merchant or moneylender at interest rates ranging from 25 to 100 percent a year. Fertilizer, if it was used at all, was generally animal and not synthetic since the farmer could acquire this with his own labor and without a monetary outlay. Pesticides and herbicides were not understood and/or not generally purchased.

d. Guaranteed Sales and Price Supports

INDAP does not buy any agricultural produce or in any way guarantee farm prices. The Ministry of Agriculture is in the process of having other government agencies buy agricultural products under pre-announced price schemes.

e. Insurance

There is no insurance program for crop damage or loss available at INDAP or any other government agency or private institution.

f. Other Program Marketing Arrangements

During Phase I, INDAP did not get involved with marketing of clients' produce. It then became apparent that INDAP borrowers were at a distinct disadvantage marketing their products because:

- (1) They did not have sufficient capital to sell their crop off gradually, and at times had to sell it to a trader before harvest to raise the cash to live.

- (2) The small quantity of harvest each farmer brought to market placed him in the hands of middlemen and did not permit him to sell direct to larger buyers at more favorable prices.
- (3) They individually lacked proper storage facilities for their crops and could not individually afford to construct them.
- (4) They lacked adequate transportation equipment to take their produce to the best market so they often sold to merchants who purchased directly from the farm at low prices.
- (5) They lacked information of market conditions, and at times made selling decisions that were not in their best interest.

Thus, during Phases II and III INDAP has been making credits available to purchase trucks, construct storage facilities, etc. Farmers attend classes about marketing produce and the cooperatives are receiving "marketing advances" to smooth out this difficult process for the small farmers.

g. General Marketing Conditions

INDAP officials have learned that while providing agricultural credit and technical assistance are necessary conditions for turning low income subsistence farmers into viable market-oriented farming operations, they are not sufficient. Improvement in marketing conditions is absolutely necessary to produce complete and lasting changes for the rural poor. Without it, small farmers, at best, experience some increase in total output and raise their consumption levels.

h. Profits and Risks

Information on cost of operation of the small farms that INDAP services is not available and has never been gathered. It is, therefore, impossible to separate out the profitability of the new technology. My guess is that when all the variables that influence profitability are recognized and influenced properly the farm operations are profitable. But when they are not (as is probably the typical case), the farm operations experience random profit and less experiences over the years. This is all to argue that the profit function contains causal variables that are highly interdependent. Technology can't be manipulated and analyzed without making assumptions about the magnitude and direction of the other variables.

III. EVALUATION

A. Performance

1. Apparent Uses of Credit⁵

During Phase I nearly all loans made by INDAP were crop loans because the pressing need for low income farmers was short-term - one agricultural cycle - credit. The principal concern of these low income farmers was to obtain the necessary output to be able to feed their families until the next harvest. This was no small problem as many spent up to 60 percent of their income on food. The introduction of INDAP in rural Chile with crop type loans released many low income farmers from the hands of the rural moneylender. It also lowered interest costs and altered the marketing channels of the small farmers' products.

The majority of INDAP loans are made in kind so that it is not easy to divert production credit into consumption expenditure. However, there are reports that small farmers have been known to re-sell merchandise obtained on credit to obtain cash (for example, fertilizer). I don't believe this practice is widespread.

2. Effects

Before going into some of the specific effects listed in the suggested outline I would like to present some data recently used by INDAP's office of planning in their own work on "evaluation". This information will be of value in its own right in addition to demonstrating the kind of evaluation (or lack of it) that is currently going on within INDAP.

In Table 26 comparisons are made between the planned and actual farmers attended and planned and actual loans extended by type of credit. Also the average size of loans is given for the period 1968-1971.

Table 27 includes what INDAP's office of planning calls "indicators of credit". The office of planning discovered that little information was systematically gathered in or about each of the 16 working zones so precious little data was available to them to use as indicators. In Table 27 there is "loans per INDAP field employee". The zones with the smallest credit per employee were I and IX, with 74,600 and 140,500 *escudos* respectively. These zones also have the smallest quantity of

⁵I do believe this production - consumption question to be somewhat misleading. It seems what is at issue is not whether a farmer consumed some of his production credits, but what he did with the total supply of funds. That is, substituting owner capital for borrowed capital makes no difference on its face. The question might be: Did farmers consume production credits while not shifting owner resources into production?

attended *campesinos* which helps explain this result. Also note the average number of *campesinos* per INDAP field vehicle was only 25.5 in Zone XV. This zone is in the southernmost part of Chile where clients are very dispersed and difficult to reach by land. Finally, Table 28 gives a breakdown by zones of all INDAP field employees and vehicles.

a. Production

INDAP has not gathered data on production and there have not been any studies on INDAP clients to date that generated production information. Thus, it is not possible to determine the impact of credit on production or farm sales. However, back on pages 16 and 17 some estimates of production were given. In this section some additional estimates of production are presented in Table 29. The figures given for wheat, potatoes, beans and corn cover the four most important crops financed by INDAP. No information is given on how these estimates were derived, but one can guess by a process similar to that used for Table 11.

b. Farm Income

The only information on farm income and net worth is that produced by the ICIRA field study and presented in Tables 30 and 31. These tables offer estimates of the average wealth existing in 1967 and 1970. Table 31 demonstrates how farmers with "capitalization" credits experienced much greater percentage changes in wealth than those with "operation" credits. This pattern was true for each of the zones studied and the differences between the two types of credit are truly dramatic, although not surprising.

c. Technology

Again there has been no attempt to gather information on the whole question of technology. I feel it is easy to say that farmers have not been unchanged by INDAP's attempts to broaden and improve the small farmers' range of technology. If they have come away altered in any way I would argue that it has been on the side of improvements in farming techniques. The real question is, of course, the magnitude of technical change and rate of change. On these important matters there is not information to shed any light.

Without credits the majority of small farmers would not use the more expensive high yielding seeds or improved fertilizers. I think it safe to assume that the greatest area of technological improvement is that of fertilizer utilization.

TABLE 26
Comparison of Credit Granted with Planned Credits
And Farmers Attended with Farmers Planned by Type of Credit
For 1968-1972

<u>Year</u>	<u>Credit Granted</u>	<u>Planned Credits</u>	<u>Operation (CAD)</u> (Thousands E ^o of 1971)		<u>Av. Credit per Farmer</u>	<u>Farmers Planned</u>
			<u>G/P</u>	<u>Farmers Attended</u>		
1968	71,341	80,333	88.8	44,099	1,618	59,435
1969	77,245	82,566	93.6	39,396	1,960	61,339
1970	79,497	79,453	100.1	38,841	(cal)	61,238
1971	177,660	208,515	85.2	74,124	2,397	89,402
1972		275,964				83,405
<u>Capitalization (COC)</u>						
1968	52,525	49,030	107.1	2,062	25,473	2,228
1969	59,282	77,974	76.0	2,219	26,716	2,473
1970	22,959	63,711	36.0	753	(cal)	2,667
1971	53,176	125,279	42.4	2,441	21,784	7,047
1972		60,526				1,677
<u>Organizations (CDO)</u>						
1968	6,734	17,324	38.9	68*	99,034*	89
1969	12,960	15,000	86.4	193	67,149	89
1970	28,828	98,306	28.3	130	221,756	144
1971	72,425	115,174	62.9	158	458,383	140
1972		320,112				63,296
<u>Fisheries</u>						
1968	5,066	26,799	18.9	32*	158,328*	59
1969	8,022		29.9	35	230,145	59
1970	6,456	15,156	42.7	70	92,356	56
1971	7,610	26,105	29.2	192	39,633	59
1972						10,303

Source: Office of Planning, INDAP, July, 1972

* Organizations

TABLE 27
Some Indicators of Credit

Zone	Percentage Change of Farmers with Credit in 1971 Over 1970	Percentage Change of Total Credits Granted in 1971 Over 1970	Percentage of Credit Granted in 1971 Compared with Credit Planned	Ave. Loan per Farmer in 1971	Loans per INDAP Field Employee in 1971*	Farmers with Credit per Field Vehicle in 1971	Farmers with Credit and Technical Assistance per INDAP Field Vehicle in 1971
I	304	42.7	60.4	560.3	74.6	159.7	255.3
II	145	84.1	81.7	3,605.4	252.6	167.2	376.9
III	-5	72.0	126.7	4,661.6	440.8	162.6	253.1
IV	6	14.0	79.3	4,789.9	2,565.8	107.1	297.7
V	70	10.0	47.7	1,498.8	326.8	617.8	617.8
VI	148	35.1	62.2	1,974.3	277.7	305.8	360.3
VII	51	222.1	93.9	3,232.7	324.2	264.8	264.8
VIII	190	156.0	69.7	2,142.1	201.9	247.7	411.9
IX	102	159.6	62.5	2,737.9	140.5	228.8	280.4
X	71	139.3	60.2	1,803.6	407.4	382.2	288.5
XI	53	171.4	67.2	2,905.7	361.4	317.0	428.7
XII	-42	90.0	41.6	4,245.6	313.0	137.7	246.6
XIII	23	117.8	58.3	2,431.5	339.0	290.2	290.2
XIV	214	220.2	107.6	10,242.9	385.1	150.4	181.1
XV	-28	157.2	35.3	19,890.3	299.3	25.5	38.5
Total	52	97.0	64.1	2,689.1	297.3	260.4	330.5

Source: *Depto. Programacion INDAP*

* In thousands of *Escudos* of 1971

TABLE 28

Vehicles and Employees in the Field for INDAP in 1971 by Zone

Zone	Vehicles	Employees
I	10	12
II	31	74
III	25	43
IV	30	60
V	30	85
VI	23	50
VII	25	66
VIII	35	92
IX	24	107
X	39	66
XI	51	130
XII	38	71
XIII	49	102
XIV	10	40
XV	13	22
Total	433	1,020

Source: *Vehiculos*

Depto. De Racionalizacion INDAP

Funcionarios: Memorias de la Labor Desarrollada por Cada Zona en 1971 INDAP.

TABLE 29

**Estimated Production of the Most Basic Crops
of INDAP Clients in 1968/69 and 1969/70**

Area Planted in Hectareas*			Estimated Production in qq.**		
<u>Crop</u>	<u>1968/69</u>	<u>1969/70</u>	<u>Crop</u>	<u>1969/69</u>	<u>1969/60</u>
Wheat	16,437	14,074	Wheat -	251,486	211,110
Potatoes	824	1,260	Potatoes	63,778	205,758
Beans	616	912	Beans	6,222	17,602
Corn	1,131	1,998	Corn	34,156	101,498
Total	19,008	18,244			

* One hectarea equals 2.471 acreas

** One qq. (*quintal*) equals 220 pounds

Source: INDAP: 64/70, Santiago, October, 1970, N.P.

TABLE 30
Absolute and Percentage Change in Total Declared Wealth:
Before and After 1967 (in Thousands of 1970 *Escudos*)

		Constructions		Machinery		Animals		Dwellings		Durable Consumer Goods		Total	
		Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
III	Zone												
	COC*	92.4	27.29	257.4	82.47	48.9	28.47	196.0	42.93	145.7	38.1	738.4	56.37
	CAC**	50.5	76.16	33.1	26.93	34.5	35.20	35.0	10.67	39.9	41.64	193	27.14
V	Zone												
	COC	671.5	170.23	364.2	284.29	801.2	436.14	33.0	10.38	81.3	42.90	1951.2	151.34
	CAC	254.5	89.11	117.5	23.02	318.7	65.94	43.0	6.34	813	24.74	81.5	35.65
XIII	Zone												
	COC	285.0	144.74	281.1	94.55	980.1	348.66	47.0	14.19	27.1	16.59	1620.3	127.6
	CAC	63.8	13.79	122.4	43.40	346.7	59.22	79.5	13.69	63.3	26.06	675.7	31.38

* COC represents "capitalization" credits

** CAC represents "operations" credits

Source: See Table

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TABLE 31

Average Declared Wealth in 1970 According to Type,
Origin of Funds and Period of Acquisition
(In Thousands of 1970 Escudos)

	Reproductive Assets				Non-productive Assets			TOTAL GENERAL
	Constructions	Machinery	Animals	Total	Dwellings	Consumer Durables	Total	
<u>COC*- III ZONE</u>								
Own	15.8	13.5	7.0	33.5	23.2	3.3	24.9	58.5
Credit	2.2	6.1	0.3	8.2	0.9	4.3	5.1	13.4
Before 67	14.1	10.8	5.6	28.1	17.0	1.3	17.0	45.2
After 67	<u>3.8</u>	<u>8.9</u>	<u>1.6</u>	<u>13.7</u>	<u>7.3</u>	<u>5.0</u>	<u>11.8</u>	<u>25.5</u>
Total 1/	18.0	19.63	7.3	41.7	24.2	7.6	30.1	71.9
<u>CAC**</u>								
Own	2.5	2.4	2.3	5.9	6.0	1.7	7.1	13.0
Credit	0.7	0.2	-	0.6	0.3	0.4	0.8	1.4
Before 67	1.8	2.0	1.7	4.6	5.7	1.5	6.7	11.3
After 67	<u>1.4</u>	<u>0.6</u>	<u>0.6</u>	<u>1.9</u>	<u>0.6</u>	<u>0.6</u>	<u>1.2</u>	<u>3.0</u>
Total 1/	3.1	2.6	2.3	6.4	6.4	2.1	7.9	14.4
<u>COC - V ZONE</u>								
Own	7.0	4.0	9.2	19.4	15.3	6.6	17.5	35.8
Credit	31.0	11.8	20.7	60.0	0.6	2.1	2.6	62.4
Before 67	15.7	4.1	5.6	23.7	14.4	6.1	16.4	39.1
After 67	<u>22.4</u>	<u>11.7</u>	<u>24.3</u>	<u>55.7</u>	<u>1.5</u>	<u>2.6</u>	<u>3.7</u>	<u>59.1</u>
Total 1/	38.1	15.8	29.8	79.4	15.9	8.7	20.0	98.2
<u>CAC</u>								
Own	3.2	4.6	7.9	14.1	12.7	3.6	13.8	26.7
Credit	6.1	2.2	1.2	7.1	2.6	0.7	2.8	9.7
Before 67	4.9	5.5	5.5	13.7	10.0	3.9	11.8	24.6
After 67	<u>4.4</u>	<u>1.3</u>	<u>3.6</u>	<u>7.4</u>	<u>0.6</u>	<u>0.9</u>	<u>1.5</u>	<u>8.8</u>
Total 1/	9.3	6.7	9.1	21.19	15.2	4.4	16.6	36.4
<u>COC - XIII ZONE</u>								
Own	12.3	18.8	23.8	54.4	15.7	7.7	22.1	76.6
Credit	8.6	5.3	29.9	43.0	1.4	0.2	1.5	44.5
Before 67	8.0	12.4	11.7	32.3	15.0	6.8	20.6	52.9
After 67	<u>12.4</u>	<u>11.7</u>	<u>40.8</u>	<u>64.4</u>	<u>2.1</u>	<u>1.1</u>	<u>3.1</u>	<u>67.5</u>
Total 1/	20.9	24.1	53.7	97.4	17.2	7.9	23.7	121.1
<u>CAC</u>								
Own	6.3	5.0	11.8	22.77	8.7	3.8	12.4	35.2
Credit	1.1	0.5	0.8	2.4	0.2	0.3	0.6	3.0
Before 67	6.5	3.8	7.9	18.0	7.8	3.3	11.1	29.0
After 67	<u>0.9</u>	<u>1.7</u>	<u>4.7</u>	<u>7.2</u>	<u>1.1</u>	<u>0.9</u>	<u>1.9</u>	<u>9.1</u>
Total 1/	7.4	5.53	12.6	25.24	8.9	4.2	13.00	38.22

1/ Equal to lines 1 and 2 (because of rounding it is not always equal to 3 and 4).

* COC represents "capitalization" credits.

** CAC represents "operation" credits.

d. Savings and Other Sources of Finance

INDAP does not have a policy on client saving behavior. INDAP's credit program has not induced other sources of credit to expand their operations for small farmers. I don't think the low rates of interest charged by INDAP have discouraged the flow of savings into farm finance. The low rate of return of small farm operations and the small or non-existent margin of discretionary funds of small farmers has deterred the flow of savings into farm finance.

e. Employment

INDAP's credit operation has a positive impact upon total rural employment. Farm credits put more of the farm operators' own capital to work, thus at a minimum permits greater utilization of family labor and opens up the possibility of short time wage labor for peak times in the production period. The employment effects do not show up in the aggregate statistics because it is mainly the immediate family that benefits in employment where no wage payments are made.

f. Political and Social Structure

INDAP's ten years of activity in rural Chile have produced radical changes in the political climate of the countryside. Rural Chile is entirely politicized now, and ten years ago it was almost entirely a-political. Small farmers have increased their political leverage viz a viz larger farmers and the city dweller by an enormous increment.

3. Progress Towards Other Objectives

INDAP has defined its "attendable population" as 564,984 *campesinos* (out of a total active population of 721,900) which is comprised of 277,625 paid rural workers and 287,359 small farmers (see Table 32). During 1971 INDAP served 41.7% of the total attendable population. This was almost double the performance of 1970 which was 26.7%. The major part of attention was given to paid rural workers where 45.7% were serviced in 1971 as compared to only 20.1% in 1970. (See Table 32.)

4. Image

a. Farmer Attitudes

During the first few years of INDAP's program most farmers were dealt with on an individual basis. Few *campesino* organizations existed for INDAP to work through, and the process of forming *comites* proved long and difficult in most regions of Chile. Cooperation in the modern sense is based upon a monetary economy and market oriented production. But subsistence agriculture typifies the majority of the Chilean farmers INDAP attempts to reach, and the mutual ties of these people with other agrarian families seems to be social rather than economic. Since self-reliance and independence have ruled for years, the same small farmer feels skeptical toward his neighbor when they must work together in an organization for mutual economic goals.

TABLE 32
Paid Workers and Small Farmers Attended by INDAP in 1970 and 1971

ZONES	1 9 7 0			1 9 7 1		
	Paid Workers	Small Farmers	TOTAL	Paid Workers	Small Farmers	TOTAL
I	-	1,058	1,058	1,056	1,582	2,633
II	2,986	8,712	11,698	9,428	8,712	18,140
III	3,187	3,420	6,607	10,509	3,991	14,500
IV	6,524	5,194	11,718	8,100	2,579	10,679
V	8,843	12,550	21,393	13,792	5,280	19,072
VI	4,305	4,591	8,896	23,909	12,419	36,328
VII	4,308	5,715	10,023	11,532	6,128	17,660
VIII	4,872	6,064	10,936	11,379	6,717	18,096
IX	1,320	3,186	4,506	3,205	1,225	4,330
X	5,660	9,274	14,934	14,897	10,602	25,499
XI	3,289	14,613	17,902	1,700	16,167	17,867
XII	6,507	6,813	13,320	15,104	14,288	29,392
XIII	1,771	11,852	13,623	1,685	16,994	18,679
XIV	163	2,206	2,369	-	1,216	1,216
XV	2,013	-	2,013	512	633	1,145
Total	55,748	95,248	150,996	126,808	108,533	235,341

Source: 1970 *Plan Operativo* 1971 INDAP
1971 *Memorias Zonas* 1971 INDAP

TABLE 33

INDAP's Attendable Population

<u>Zone</u>	<u>Paid Workers</u>	<u>Small Workers</u>	<u>TOTAL</u>
I	1,318	4,341	5,659
II	14,626	16,873	31,499
III	14,488	13,290	27,778
IV	27,642	11,604	39,246
V	49,367	29,502	78,869
VI	31,046	15,183	46,229
VII	26,410	27,326	53,736
VIII	23,991	14,955	38,946
IX	11,591	16,317	27,908
X	24,471	21,560	46,031
XI	10,860	53,834	64,694
XII	26,809	25,341	52,150
XIII	9,067	31,590	40,668
XIV	1,800	3,833	5,633
XV	4,128	1,810	5,938
Total	277,625	287,359	564,984

Source: *Memoria Anual INDAP.*

The movement towards producer cooperatives in recent years is raising the same kind of problems because farmer attitudes are not well adapted for this kind of organizational effort. INDAP has spent a good deal of time and effort trying to educate the rural poor into a more receptive mood for collective solutions to rural poverty.

b. General Image of Program

I am really not sure there is such a thing as a general image of the INDAP program. In the first place there really have not been many "outside" observers of this program.

Whether INDAP is judged a success or failure largely depends upon the criteria selected. From a narrow view of cost of credit and rate of loan collection INDAP would probably be judged a failure, or at least disappointing, compared to other experiences. If you select total number of farmers attended, problem solving in the area of *minifunias*, etc., then INDAP may well be judged a success.

I think it safe to say that INDAP feels it is very successful, and likewise the government is quite pleased with its performance. This does not overlook the unhappiness that exists in various levels of government with particular methods utilized or procedures followed. The major donor agency is the Interamerican Development Bank. I have no idea what image INDAP has with the bank.

B. Evaluation Procedures and Feedback

1. Program Evaluation Procedures

INDAP never had any evaluative procedures built into the program, and over the past ten years of operation has not as yet developed any ad hoc criteria to judge its own performance. That is to say, at the outset of the program a set of indicators was not defined to reflect progress toward announced objectives. Other than general impressions, little was known about income levels, crop yields, profit margins, crop deliveries, input mixes, etc. of the farmers that first entered INDAP's credit program. No attempt was made to gather this information once small farmers became clients of INDAP so it was not possible to evaluate the impact of INDAP.

Over the ten year period INDAP has submitted biannual reports to the Interamerican Development Bank as part of their loan agreement with them. These reports provided the following kinds of information:

- a. Total number of beneficiaries of INDAP credit.
- b. Types of loans granted (purpose of credit).
- c. Total number and geographical distribution of INDAP employees.
- d. Distribution of IDB and local funds according to type of credits granted.

The only type of evaluation that went on inside INDAP and with the donor agency over INDAP's ten year history was a kind of quantitative history. That is, how many committees and cooperatives were formed in a year, how many more clients this year over last, the total volume of credits this year over last and so on.

Very near the end of IDB's second loan it did promote a study of INDAP that was part of a six country study in Latin America. IDB made an agreement with INDAP to have ICIRA carry out the study of INDAP's program.¹ The planning began in 1969 and dragged on through the presidential elections, which compromised its work, and not until December 1971 were any results of the field research published. Only a fraction of the gathered data was utilized in the published reports and various experts both inside of INDAP and out have serious reservations about the validity of this research project. To date, this ICIRA study is the only attempt to analyze INDAP's performance.

2. Feedback and Changes in Program

Changes in the operation of INDAP's program have primarily originated from above. That is, a policy position would be adopted by the Minister of Agriculture that would filter down through the Vice President of INDAP and finally result in field work changes. The changes of political administrations that resulted in Phases I, II and III are good examples of this procedure.

C. Problems

1. Government Level (the donor - IDB)

- (a) Lack of contact. There has been no real interchange of people and ideas between IDB and INDAP other than the initial lending negotiations. Both have just left each other alone.
- (b) Lending too-open-ended. IDB really doesn't have a good idea of what it is financing. IDB has little control or influence over the use of funds, or it has restrained from using its influence.
- (c) Too much international politics. The donor does not seem to formulate policy mainly on economic grounds. The current freeze out of Chile by international lending institutions is a case in point.
- (d) No criteria for evaluating the program. About the only measure used is the capacity to repay which reflects on the government and does not say anything about the health of INDAP.

¹ICIRA, *Instituto de Capacitacion e Investigacion en Reforma Agraria*, (Agrarian Reform Training and Research Institute in Santiago).

2. Agency Level (the recipient - INDAP, main office)

- (a) There are too many state agencies doing the same thing with little coordination.
- (b) Too many young urban people recruited into INDAP who have little affinity to the rural areas and find it difficult to earn respect of rural people.
- (c) Financially too loose. The budget is structured to allow too much discretionary spending.
- (d) Almost a complete absence of planning and evaluation.
- (e) Administrative leadership does not operate with contemporary management methods that are available.
- (f) It is not just a financial institution, but a political one as well. with no clear distinction between these two facets.

3. Farm Level (INDAP, field work)

- (a) Difficulty in organizing farmers.
- (b) Difficulty in having farmers operative in collective and/or cooperative manner.
- (c) Cooperatives suffer from lack of leadership.
- (d) Employees have created atmosphere of less than complete responsibility on the part of borrowers.
- (e) Politics is not separated from technical matters.
- (f) Loan application sometimes delayed too long.
- (g) Farmers sometimes complain that they don't receive inputs on time.
- (h) Building in dependent attitude on the part of small farmers.

D. Conclusions about Small Farmer Credit

For the vast majority of the rural poor, working with INDAP represents a first contact with financial institutions, which is one step in the breakaway from traditional agriculture. The introduction of credit and technical assistance forced these farmers to examine their own financial needs, another process previously not experienced. They now have real interest cost which are the lowest available in present money markets and receive technical assistance, hitherto luxuries enjoyed only by the large farmers. Talking to INDAP's clients in the field I could see they were convinced that the future holds some promise of economic improvement. INDAP borrowers are released somewhat from the power of the local informal money lenders and believe the government has finally taken concrete action after years of talk and promises about agrarian reform which even now only touches a small fraction of the rural poor.

1. Major Problems of Small Farmers

I think it somewhat artificial to separate the major problems of a small farmer into economic, social and political ones. Most of the problems contain each of the above components. Below are

five basic problems of the typical small farmer:

- I. Lacks command over resources.
- II. Doesn't obtain the maximum from old or newly acquired resources.
- III. Doesn't know how to utilize institutions central to cash crop - marked oriented agriculture.
- IV. Can't obtain maximum assistance of his government.
- V. Is highly individualistic.

2. Role of Credit in Meeting these Problems

- (a) It has made a major contribution in solving problem I.
- (b) It seems to have made some headway on problem II.
- (c) INDAP has just begun to attack problem III with its educational program.
- (d) Problem IV is really beyond the scope of INDAP.
- (e) Problem V is beyond the scope of INDAP.

3. Credit and New Technology

a. Triggering Small Farmer Development

Credit is absolutely necessary if small farmers are to utilize modern and more expensive inputs that embody recent technology. For the adoption of new methods that don't require purchased inputs substantial cultural change must take place before small farmers are willing and active receivers and users of new methods.

b. Sustaining Small Farmer Development

Institutional credit is necessary for small farmer development. Thus, I would say yes, lack of institutional credit is a major limiting factor on the small farmer's ability and propensity to continue to purchase new technology inputs. It is most difficult to rank by order of importance all the necessary factors for small farmer development. But these factors can be identified.

4. Conditions for Success or Failure

I am not in a position to compare INDAP with other small farmer credit programs and indicate where it may be doing better or worse. However, I can list some things INDAP does well and indicate areas of weakness.

Successes

INDAP now stands as a new and radically different credit institution. INDAP was not brought as a bandaid type solution to rural poverty. INDAP was born out of an agrarian reform spirit that has become more radical with age.

INDAP very early discovered that credit alone would be of little value to small farmers. It has experimented with various forms of additional farm services to supplement farm credit in an attempt to foster viable farm development.

INDAP quickly shifted from individual credits to group credits. This permitted economy in credit, technical assistance and other farm services.

INDAP has changed the nature of rural society. The rural poor see themselves as a part of the larger society. Traditional political and economic channels are being bypassed and new ones opened. The ground work in education is being prepared to permit the assimilation of new technical knowledge and general know-how for dealing with the urban society.

INDAP has attracted young dedicated people interested in transforming the rural society. These people are university educated with values quite different from traditional agricultural elitist and their urban counterparts.

Failures

The agency and farm level problems listed on page 66 indicate the areas where INDAP has fallen short of expectations outlined in its objectives.

5. How Could the Program Be Improved?

I would offer the following suggestions for improving the INDAP program:

- (1) Train young technical people to work in their own rural areas with people they know to remove the "urban outsider" problems of the program.
- (2) Utilize a budgeting process that will permit cost-benefit studies of national and regional expenditures.
- (3) Adopt regular evaluation procedures to guide current and future decision making. This could be done by the current planning division.
- (4) Consolidate state agencies that wastefully compete with each other for complementary services to INDAP.
- (5) Emphasize "projects" rather than "program" for entire geographical areas.
- (6) Be less political and more academic about the organization of cooperatives. A full scale analysis of how cooperatives are working is needed so problems can be adequately dealt with.
- (7) House all INDAP's national personnel in one facility to improve communication and organizational morale.

- (8) Separate production from social welfare objectives so that activities of INDAP can be properly evaluated.**
- (9) Eliminate the concessionary interest rates that exist. For example, maintain the same interest rates that exist for other institutional lenders.**

IV. ROLE OF TECHNICAL ASSISTANCE

A. A.I.D. Inputs

The Agency for International Development has played no role in either creating or supporting the INDAP program.

B. Other Donor Inputs

The only outside donor to the INDAP program over the past ten years was The Interamerican Development Bank (IDB). A \$6,500,000 loan was granted by the Social Progress Trust Fund of IDB in 1961 to help start the INDAP program. In 1966 INDAP received a loan of \$11,000,000 from the Fund for Special Operations of the IDB. This loan funded the "direct capitalization" program.

The assistance granted by IDB was purely capital in nature with no technical assistance support. In 1970, INDAP made application to IDB for \$10,000,000 loan, but as yet no action has been taken on the application.

C. Effects

Outside technical experts were not used to start up the INDAP program. Outside funds were not solicited until the INDAP program was underway. One cannot detect any change in the operation of credit philosophy of the INDAP program once it started receiving outside funds. On the contrary, there seems to have been too little contact between the donor and recipient.

D. Recommendations

I believe that AID's role in fostering small farmer credit programs ought to be limited by the following criteria:

1. full service development schemes not partial service credit programs.
2. regional projects not national programs.
3. particular products not general agriculture.
4. promoting pockets of rural development not attacking the massive problem of rural poverty.

The general problem of small farmer agriculture is linked directly with rural poverty. This problem calls for drastic institutional changes within the rural sector that go far beyond the availability of credit. The problem is far too sensitive for one unilateral lender to undertake and must be handled via multilateral funds. It is not likely that the Third World countries in the near future will find the funds to finance radical changes within agriculture to deal with rural poverty. Thus, at present, there is ample room for AID and other unilateral lenders to promote rural development along the lines suggested above.

ANNEX: Sources of Data and Other References

Banco Central de Chile, Boletin Mensual

Comite Interamericana de Desarrollo Agricola, Chile: Tenencia de la tierra y desarrollo socio-economico del sector agricola, Santiago, 1966

Gil, Federico, The Political System of Chile. (Boston: Houghton Mifflin Company, 1966)

Instituto de Capacitacion e Investigacion en Reforma Agraria (ICIRA), Informe Sobre La Evaluacion de la Accion de INDAP, Toma II, Santiago, December 1971

Instituto de Desarrollo Agropecuario, INDAP: 64/70, October 1970, n.p.

_____. INDAP: Bases de Una Politica Agraria, Santiago, 1970

_____. Marco Nacional de Programacion: 1969, Santiago, 1969

_____. Analisis del Programa de Credito Desarrollado por el INDAP en el Period 1962-1967, Santiago, February 1968

_____. Memoria de la Asistencia Tecnica: 1962-1966, Santiago, July 1967

_____. Proyecto de Credito Agricola al Sector de Bajos Ingresos, Solicitud de Prestimo al Banco Interamericano de Desarrollo, Santiago, July 1965

Interamerican Development Bank, Evaluacion de Programas Globales de Credito Agricola en Seis Paises Latinoamericanos, Washington, D. C., August 1971

Nisbet, Charles T., "Interest Rates and Imperfect Competition in the Informal Credit Market in Rural Chile," Economic Development and Cultural Change, Vol. 16, No. 1, October 1967, pp. 73-90

Nisbet, Charles T., "Supervised Credit Programs for Small Farmers in Chile," Inter-American Economic Affairs, Vol. 21, No. 2, Autumn 1967, pp. 37-54

Nisbet, Charles T., "The Informal Credit Market in Rural Chile: Its Nature, Significance and Relationship to the Institutional Credit Market," unpublished Ph.D. thesis, University of Oregon, June 1967

Valdes Estrades, Nancy and Cuevas Sottolichio Fernando, El Caracter del Credito en Los Pequenos Productores Agricolas," Escuela de Economia, Universidad de Chile, June 1971

COUNTRY STUDY

RURAL CAPITAL MARKETS AND SMALL FARMERS
IN BRAZIL, 1960 - 1972

by:
Richard L. Meyer
Dale W. Adams
Norman Rask
Paulo F. Cidade de Araujo
Ohio State University

Columbus, Ohio
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Some of the conclusions reached in the paper are controversial. Individuals and organizations mentioned in the above may or may not care to be identified with these conclusions.

Rural Capital Markets And
Small Farmers In Brazil

by
Richard L. Meyer
Dale W Adams
Norman Rask
Paulo F. Cidade de Araujo

-Abstract-

This paper examines the extent to which small farmers in Brazil have participated in the rapid increase in institutional credit during the past decade. Over the 1960 to 1970 period the real value of institutional agricultural credit in Brazil increased over four fold. Data is presented which indicates that only a modest amount of this additional credit filtered down to small farmers. Several different explanations for this situation are examined. These explanations include: (1) small farmers lack effective demand for institutional credit, and (2) with existing administrative procedures and interest rate policy, banks have little financial incentive to supply small farmers with credit.

We conclude that both demand impediments and supply constraints have helped to skew the distribution of credit away from small farmers. In the short run we suggest that monetary and administrative policies be adjusted so that banks have more financial incentives to loan to small farmers. Over the long run the profitability of purchased inputs for small farmers must be substantially improved to boost effective demand for credit.

We also conclude that the huge increase in institutional agricultural credit in Brazil, coupled with negative real rates of interest on loans, have seriously retarded growth in non-institutional segments of rural capital markets. The lack of significant economic incentives to mobilize voluntary financial savings in rural areas has also seriously hindered a balanced growth in rural capital markets. Apparently, some opportunities are being missed for self-financing of rural credit needs.

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Rural Capital Markets and Small
Farmers in Brazil
1960-1972*

by

Richard L. Meyer, Dale W Adams, Norman Rask,
and Paulo F. Cidade de Araujo**

I. INTRODUCTION

Various types of credit programs have been used throughout the world to treat small farmer development problems. Three general approaches have been emphasized: (1) An integrated strategy where credit is one element in a package of services provided to small farmers. This technique has been popular in Asia and parts of Africa. (2) A non-integrated approach has been more frequently used in Latin America. This includes credit plus some technical assistance and is often called supervised or directed credit. (3) Still another technique used might be termed the "filter down" approach. In this case attempts are made to substantially increase the total size of the agricultural credit portfolio, the assumption being that part of the increase in credit will filter down to small farmers. A good deal has been said and written about the first two approaches. Relatively little attention, however, has been paid to the results of the filter down strategy.

The recent Brazil Experience provides an excellent case of this latter approach. In this paper we attempt to assess the extent to which Brazil's overall rural capital market has serviced small farmer needs. Because of the general lack of information on informal rural capital markets, however, emphasis will be placed on formal market actions. ^{1/} Brazil has been very aggressive in the past dozen years in expanding formal agricultural credit. Some specialized small farmer credit programs have been introduced, but they have been relatively unimportant in comparison with the overall agricultural credit buildup [23, 66].

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**Asst. Professor, Professor and Associate Professor respectively, Department of Agricultural Economics and Rural Sociology, The Ohio State University and Professor Assistente, Departamento de Ciencias Sociais Aplicadas, Escola Superior de Agricultura "Luiz de Queiroz, Piracicaba, São Paulo, Brazil.

^{1/}In this study the terms 'formal' and 'institutional' capital markets will be used interchangeably. These terms will indicate credit-savings activities in institutions at least partially influenced by banking regulations: public and private banks, legally recognized cooperatives, savings and loan associations, and credit associations. The terms 'informal' and 'non-institutional' will refer to other credit-savings activities among friends, relatives, with merchants etc.

The discussion which follows opens with a brief review of recent agricultural development in Brazil. A description of Brazil's formal rural capital market and associated policies are presented next. A few comments on informal rural credit systems in Brazil follow. The next section gives an overview of the most important specialized small farmer credit programs carried out in Brazil during the past couple of decades. The main part of the paper is presented in the final three sections. This includes empirical information on the impact of overall credit policy on small farmers, and a discussion of the economics of credit use at the farm level in Brazil. The paper concludes with a discussion of policy recommendations which might induce the overall credit system to service small farmers more adequately.

II. Agricultural Development in Brazil

Brazil's economic growth during the past few years has been remarkable. Growth rates exceeding ten percent per year in 1971 and 1972 were among the highest in the world. ^{2/} As can be noted in Table 1 agricultural growth rates varied throughout the 1960's but in 1969 began an upward trend which has continued to the present. ^{3/} Sharp increases in output of wheat, soybeans, oranges, corn and poultry have been experienced. A major part of the increase in output has been the result of clearing of new lands [40]. Some productivity changes have also occurred in some regions, however, through wider use of improved seed, chemical fertilizer, insecticides, and mechanization. From 1960 to 1970 fertilizer use jumped from 300 thousand metric tons to almost 1 million tons [52]. Over 100 thousand new tractors were purchased by farmers from 1960 to 1970.

Between the end of World War II and the early 1960's Brazilian agricultural policies ranged from general neglect of the sector to programs which discriminated against agriculture via import substitution and industrialization programs [14]. Foreign exchange controls, tariffs, and direct assistance to selected industries were major policies employed. A large part of the government investment went into construction of infrastructure and basic industries. Traditional agricultural exports were largely ignored and little effort was made to stimulate or diversify exports. In general these policies led to the transfer of resources from agriculture to non-agricultural sectors.

Only a few programs favorable to agriculture were undertaken during this period and they were largely forced upon policy makers by food crises and urban unrest. Some investments were made in marketing facilities in the early 1950's when severe losses in food marketing channels occurred at the same time that food prices were rising rapidly [73]. Another food supply crisis in 1959 was followed by an expansion in agricultural credit. Food riots in 1962-1963 led to even more interest in changing agricultural policy.

^{2/} For additional background on Brazil's economic growth refer to the following citations listed in the Appendix Bibliography [14, 38, 39, 41].

^{3/} Additional references on agricultural development in Brazil are [2, 40, 44, 54, 67, 70, 72, 73, 74].

Table 1
Annual Growth Rates in Brazilian Agriculture 1960-1971 a/

Year	Percent Rate of Growth
1960	4.9
1961	7.6
1962	5.5
1963	0.7
1964	13.0
1965	13.8
1966	1.8
1967	2.1
1968	2.3
1969	6.0
1970	9.0
1971	11.3

a/ Based on 13 agricultural commodities which represent approximately 80 percent of the total value of agricultural output.

Source: Unpublished estimates prepared by the Ministry of Agriculture.

In large measure agricultural growth has been stimulated since the early 1960's by a complex set of fiscal and monetary measures conceived and administered by the Ministry of Finance and the Central Bank. Heavy emphasis has been placed on product, input, and credit price incentives to induce rapid agricultural growth. A major expansion in amount of agricultural credit has also been an integral part of these measures. As can be noted in Table 2, in real terms, the value of institutional agricultural credit quadrupled between 1960 and 1970. The ratios of agricultural-credit-to-total-credit, and credit-to-output in agriculture also sharply increased during this period.

Brazil has also stressed minimum-price support programs for basic commodities since the early 1960's as means of encouraging production. The impact of these price supports has been especially impressive in wheat areas. Internal wheat prices, about double the Brazilian import price, plus substantial amounts of operating credit for wheat growers and good weather, have caused wheat output to quadruple during the past decade.

Some economic policies recently adopted may also contribute to further agricultural growth. The income tax system now provides substantial incentives for investment in reforestation and developing new land for cattle raising. Special credit and tax treatment is also provided to encourage exports including many agricultural goods. The huge investments in the Transamazonic Highway and colonization along its route may also have some far reaching impacts on Brazil's agriculture. In addition, promised land reform through the new Proterra Fund for the Northeast may yield some results. Additional investments in roads, marketing facilities and irrigation in the central Brazilian states of Goias, Mato Grosso and Bahia should also contribute to future agricultural growth. In the leading agricultural state of São Paulo, large investments are being made in research, infrastructive, and stimulation of agricultural exports.

As can be noted in Table 3 the real value of Brazilian agricultural exports more than tripled from 1930-32 to 1969-71. This occurred even though the major policy emphasis was placed on stimulating industrial growth. It can also be noted in Table 3 that agricultural exports have been substantially diversified over the past 40 years. An indication of this is the fact that Brazil recently became the number two exporter of soybeans behind the United States.

Despite some bright spots in Brazil's development picture, rural poverty is still a major unresolved problem. To date the weight of Brazil's agricultural policies has been focused on increasing output. Rural employment and income distribution questions have received relatively little attention. The huge lump of rural misery in the Northeast of Brazil has been much discussed, but little treated, and has grown larger and more desperate during the "decade of development." To some, at least Brazil's major challenge during the next decade is to spread the fruits of development much more widely in rural areas. As will be argued later in this paper at least part of this spread-effect might be accomplished through changes in rural capital market policies.

Number of Small Farms in Brazil

The number of small farms in Brazil is unquestionably large but difficult to quantify with accuracy. Two sets of data can be used to obtain some notion of farm size distribution. The first is information from the

Table 2

Institutional Agricultural Credit in Brazil 1960-1970

Year	Agricultural Production Loans Made During Year ^{1/}				Ratio of Agricultural Credit to Total Credit ^{3/}	Net Internal Product From Agriculture ^{4/} Million U.S. Dollars ^{2/}	Ratio of Credit to Output
	Number in '000s	Index 1960=100	Value Million U.S. Dollars ^{2/}	Index 1960=100			
1960	231	100	416	100	0.11	3,129	0.13
1961	285	123	452	108	0.11	3,503	0.13
1962	441	190	603	145	0.14	4,099	0.15
1963	549	237	527	126	0.14	3,614	0.15
1964	771	334	672	161	0.19	3,927	0.17
1965	666	288	503	121	0.14	4,090	0.12
1966	856	371	624	150	0.16	3,626	0.17
1967	1,029	445	770	185	0.18	3,844	0.20
1968	1,500	649	944	227	0.18	3,852	0.25
1969	1,145	496	1,492	358	0.23	4,083*	0.37
1970	1,191	515	1,761	423	0.25	4,451*	0.40

^{1/} Data were drawn from various Central Bank of Brazil reports.

^{2/} Cruzeiro values were adjusted to 1969 values using the General Price Index published by the Getulio Vargas Foundation. The adjusted Cruzeiro values were then converted to U.S. dollar values using 1969 exchange rate of 4.35.

^{3/} Total credit is equal to the domestic-credit-claims-on private sector figures published by International Monetary Fund in International Financial Statistics. Data were adjusted to 1969 prices using the General Price Index published by the Getulio Vargas Foundation.

^{4/} Center of National Accounts, Instituto Brasileiro de Estatística -- Fundação Getulio Vargas (IBGE-FGV) Conjuntura Econômica, Vol. 25, No. 9 (Rio de Janeiro: FGV, August 1971) pp. 107-111.

* Projected from the 1968 figure using growth rates shown in Table 1.

Source: Originally published in [3].

Table 3
 Changes in Value of Agricultural Exports from Brazil
 1930-1971, Indexes and Percentages

Item	YEARS				
	1930/32	1940/42	1950/52	1960/62	1969/71
		<u>Index Numbers</u>			
Total Exports (fob)	100	71	173	136	239
Total Agricultural Exports (fob)	100	115	274	194	309
		<u>Percent of Agricultural Exports</u>			
Principle Agricultural Commodities					
Coffee	84	56	81	70	57
Cocoa	4	7	5	7	7
Cotton	2	25	10	9	11
Sugar	1	1		5	8
Hides and Skins	6	10	2	1	1
Tobacco	3	1	2	4	3
Soya				1	5
Beef				1	6

Source: Various reports prepared by the Ministry of Finance.

1960 Census, this being the most recent data published. ^{4/} As shown in Table 4, 45 percent of Brazilian farm properties fell into the size category under ten hectares, and approximately the same number in the 10 to 100 hectare group. Wide variation is found between states and regions. Rio Grande do Sul is generally known for its small farms but actually only a quarter of its properties had less than ten hectares. However, over 60 percent of the properties in the Northeast had less than ten hectares and 30 percent had between 10 and 100. Yet these two groups represent only a quarter of the total farm area. Within the Northeast, around 80 percent of the properties in the states of Pernambuco and Maranhao had less than ten hectares.

These types of data provide only limited assistance in determining the distribution of economic units. A property of ten hectares with good soil and plentiful water located close to an urban market may provide productive employment and a good income for several people. The same sized property located elsewhere may not provide a decent living for a family. In an attempt to improve the understanding about the size distribution of properties, the Comité Inter Americano de Desarrollo Agrícola (CIDA) related property size to number of people employed, or employable, who worked fulltime. The results are necessarily crude and arbitrary but are useful in relating both land and labor to a size classification. The results reported in Table 5 suggest that roughly one-third of Brazilian farms are too small to support a family (minifundio), slightly more than a third are one family units, and thirty percent are multi-family farms. However for the Northeast, over half of the farms, are too small to support a family.

According to the 1960 census, there were 3.3 million farm properties in Brazil. Using the CIDA classification, this implies that there were over a million small properties (minifundios) unable to adequately support a family. About 1.2 million were family farms, and another million were large farms.

Between 1950 and 1960, the total number of properties in Brazil grew from 2 to 3.3 million. This appeared to be due to a sub-division of larger into smaller units as well as settlement along the frontiers. The CIDA data showed that the proportion of small properties grew from 23 to 32 percent. If these trends in property numbers ^{5/} and size distribution continued throughout the 1960's, there may be as many as 1.5 million small rural properties in Brazil today occupying only one to two percent of total farm area. Furthermore, CIDA estimated just over three agricultural workers per small property from the 1950 census. If this relationship has remained constant, approximately 4.5 million workers are currently working on these small properties. Assuming just two additional family

^{4/} Preliminary results of the 1970 Agricultural Census are expected soon so the projections presented here can be compared with actual results.

^{5/} INCRA restrictions on subdividing small properties may have slowed trends in increasing property numbers in the late 1960's. 217

Table 4

Size Distribution of Farms in Brazil and for Selected Regions 1960 and 1967

Size Interval	Brazil		Rio Grande do Sul		Northeast Brazil		Pernambuco a/	
	Number of Farms	Area	Number of Farms	Area	Number of Farms	Area	Number of Farms	Area
	<u>Hectares</u>				<u>Percent</u>			
Under 10	44.8	2.4	26.3	2.3	62.0	4.4	68.4	4.1
10 to 100	44.7	19.0	66.5	30.3	29.9	21.8	19.9	8.8
100 to 1,000	9.4	34.4	6.4	31.1	7.5	43.7	10.7	64.1
1,000 to 10,000	0.9	28.6	0.8	30.1	0.5	24.4	1.0	20.8
over 10,000	0.1	15.6	0.1	6.2	b/	5.7	b/	2.2

a/ Literal and Zona da Mata only. Based on 1967 Instituto Brasileiro de Reforma Agraria land survey.

b/ Less than one percent.

Sources: 1960 Census; George F. Patrick, Desenvolvimento Agrícola do Nordeste (IPEA, Rio de Janeiro, 1972); Mario Riedl, "Reforma Agraria no Brasil," IEPE, Porto Alegre, 1971; Unpublished data of the Ministry of Agriculture.

Table 5

CIDA Classification of
Size Distribution of Farms in Brazil
1960 Census

Type	Brazil		Northeast		Rio Grande do Sul	
	Proportion of Farms	Proportion of Area	Proportion of Farms	Proportion of Area	Proportion of Farms	Proportion of Area
I	32	1	55	2	11	1
II	38	8	25	8	75	23
III	27	38	18	43	14	52
IV	3	53	2	47		24

a/

The classes were defined as follows:

- I - minifundio: Properties too small to provide fulltime employment for two persons throughout the year considering actual levels of technology and resources,
- II - family farms: properties which can provide fulltime employment for two to four persons,
- III - medium size multi-family farms: properties large enough to provide employment for 4-12 persons, and
- IV - latifundios: properties which can employ more than 12 persons.

Source: Comité Inter-Americano de Desarrollo Agrícola, (CIDA), Posse e Uso da Terra e Desenvolvimento Socio-Economico do Setor Agrícola Brasil, (Washington, D.C.: OAS, 1966).

members per worker, there may be thirteen million Brazilians on these properties, a number almost equal to fifteen percent of Brazil's total population.

The number of small properties discussed above does not include all small farms. Renters and sharecroppers are common in Brazil, and the latter often farm small areas and provide labor services to landowners. According to the IBRA (now INCRA) land survey of 1966, there were almost 800,000 sharecroppers on almost ten million hectares. ^{6/} Assuming that the relative importance of sharecropping has remained roughly constant, the total number of small farmers in Brazil today exceeds two million and the total population on small farms probably exceeds 18 million people.

III. The Institutional Make-Up of the Rural Capital Market

Brazilian agricultural credit policy can best be understood when one has some knowledge of local institutions, and their evolution over time. Some limitations on modifying policy stem from the historical development of these institutions. This section highlights the evolution of credit institutions, programs, and policies affecting agriculture in Brazil. Some attention is also paid to the methods used to allocate the supply of institutional credit.

Prior to the creation of the Central Bank in 1964, the Bank of Brazil (BB) played the dual role of being the largest commercial bank and a bank's bank. The BB is a part-public, part-private bank with the federal government being the primary stockholder. With its network of over 600 agencies it is often the only source of institutional credit in many isolated regions. Historically, the BB has been the largest single source of agricultural credit in the entire country. During the period 1958-1967 it supplied about 90 percent of the total amount of formal agricultural production credit in the country.

Since 1952 the Development Bank of the Northeast (BNB) has also provided an increasing proportion of total agricultural credit in that region. As with the BB, the Federal Government is the major stockholder in the BNB. The BNB carries out both commercial and development banking functions, but as will be argued later, the commercial orientation has taken precedence in recent years.

The National Bank of Cooperative Credit (BNCC) is also active in agricultural lending. The BNCC grew out of an earlier cooperative credit bank which was converted into a stock company in 1966 with major control in the hands of the Federal Government. The BNCC has the responsibility of providing technical assistance and credit to all types of cooperatives. It has often financed small rural cooperatives unable to obtain credit from other sources. Its lack of adequate structure and resources, however, has restricted its activities largely to a complementary role alongside other official and private banks.

The entire banking system of the country was altered in 1964 with the formation of the National Monetary Council and the Central Bank. The objective of this reform was to provide a system which would plan and control finances rather than rely on haphazard responses to crises. Control of inflation was one of the primary concerns. It became the function

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^{6/}Instituto Brasileiro de Reforma Agraria (IBRA), A Estrutura Agrária Brasileira, (Rio de Janeiro: IBRA, 1967), p. 65.

of the Monetary Council to develop general guidelines for monetary policy, including control of banking services, interest and discount rate policies and commission for banking services. In practice the Monetary Council has gone beyond even these ample original objectives and now also participates in price setting for agricultural products.

The Central Bank implements the action of the Monetary Council and monitors bank operations. It is also responsible for control and coordination of several funds created to address special agricultural and industrial problems. Within the bank, an administrative section (Gerencia de Coordenação de Crédito Rural e Industrial -- Gecri) was established to provide and distribute resources for financing agriculture, livestock, and industry. GEBAN (Gerencia de Operações Bancárias), the administrative unit controlling rediscount operations, also affects the supply of institutional agricultural credit.

In summary, the National Monetary Council and the Central Bank have five general functions regarding agricultural credit: (1) establish the norms for agricultural credit granted by official and private banks; (2) provide funds used for discounting approved forms of agricultural credit; (3) coordinate and audit the actual application of these funds; (4) advise individual banks on agricultural lending practices, and (5) assist in training bank employees in the Rural Credit System. ^{7/}

The Rural Credit Law of November 1965 was a further attempt to create a more comprehensive rural capital market in Brazil. ^{8/} A major aim of the law was to force non-governmental banks to become more aggressive in making loans to agriculture [80]. Partially as a result of this law the proportion of total agricultural credit provided by the BB, BNB, and BNCC has dropped substantially during the past few years. However in 1969 these three institutions still supplied over 50 of total rural credit. ^{9/}

Agricultural Credit Policies and Programs

The Rural Credit Law of 1965 is the basic enabling legislation defining agricultural credit policy. Its overall objective is to increase the supply of low cost agricultural credit. Four objectives were specified in the law: (1) to stimulate farm investments, (2) to provide additional working capital to farmers, (3) to strengthen the economic position of farmers, particularly small and medium sized units, and (4) to encourage the application of modern technology to agriculture.

The law directed that at least ten percent of the commercial bank deposits be committed to agricultural lending. This resulted in an increase in the total credit available to agriculture as well as in the

^{7/} For a detailed discussion of the relationship between the Central Bank and individual banks see [27, 81].

^{8/} Law 4,829 of November 5, 1965. Additional Resolutions (5 of 1965, 69 of 1967, 97 of 1968, 181 of 1971 among others) have aided the implementation of the basic law.

^{9/} Banco Central, Crédito Rural, Dados Estatísticos, 1969, p. 10.

number of banking agencies lending to agriculture. The law further specified that interest rates on agricultural credit could not exceed 75 percent of the rates applied to normal commercial loans. Loans of an amount less than 50 times the minimum wage were assigned even lower interest rates. ^{10/}

Subsequent Central Bank resolutions for implementing the law have special significance. Resolution 5 of 1965 required commercial banks to hold 25 percent of their total deposits in compulsory deposits, 10 percent of which could be held in certain types of rural loans or agricultural bonds. Eligible loans could not exceed certain maximums (initially Cr\$ 3,300), could not carry terms of less than 120 days or more than one year, could not carry total charges of more than 15 percent, and marketing loans could not exceed more than 25 percent of the total. Resolution 100 reduced some of the rural credit incentive by permitting a larger proportion of compulsory deposits to be held as adjustable treasury bonds earning six percent nominal interest plus monetary correction, compared to negative real interest rates on agricultural loans. ^{11/}

Resolution 69 of August, 1967, directed all banks to commit at least 10 percent of their deposits to agricultural loans. ^{12/} Deposits not complying with this regulation would have to be deposited with FUNAGRI, the fund created by the Central Bank to assist industrial and agricultural development. Such deposits would only earn a six percent nominal interest rate compared to the 18 percent which could be earned on agricultural lending. Several types of lending were eligible: (1) working capital for agricultural processing and industrialization, (2) investment capital for pastures, reforestation, breeding stock, machinery, and other long-term investments, (3) agricultural marketing credit, and (4) credit for fisheries.

Several aspects of the rural credit legislation encouraged banks to concentrate their agricultural lending in a few large, short-term loans emphasizing marketing rather than production activities. In addition to the 12 percent rate of interest on agricultural credit, banks are permitted to charge a four percent inspection commission on loans under 50 times the minimum wage, but six percent on loans over that amount. Moreover, the commission can be charged on marketing loans without carrying out the actual inspection procedure.

Marketing loans are attractive because the interest can be discounted from the principal which is not the case for other types of agricultural lending. Furthermore, marketing loans tend to be shorter term and less

^{10/} Fifty minimum salaries equaled Cr\$11,280 in mid-1971. This equaled \$2,062 at a dollar exchange rate of Cr\$5.47 in effect September, 1971.

^{11/} Inflation rates in Brazil have ranged from 20 to 90 percent during recent years while nominal interest rates plus commissions on agricultural loans have not exceeded 18 percent.

^{12/} In fact, certain types of deposits were excluded so that the resolution affected about 85-90 percent of total commercial bank deposits.

risky. The purchase and sale of agricultural products usually occurs soon after harvest, and the entire transaction may only take 60 to 120 days. Production loans must be made for an entire growing season, and there are obvious uncertainties about how much will be produced and the farmers' ability to repay.

Short-term loans have another advantage. Banks have to meet credit requirements based on quarterly calculations using month-end balances. Due to the low return on these obligated uses of deposits, and the wide fluctuation in total deposits, banks prefer short-term agricultural loans so that total volume can be periodically adjusted to just barely meet minimum requirements. To avoid exceeding the 10 percent limit, some banks have hedged by placing funds in FUNAGRI deposits earning six percent which could be quickly refunded rather than overlend to agriculture at 18 percent, when lending to other sectors earned 24 percent or more.

Some of these disincentives built into the legislation were modified or eliminated by Resolution 97 of August 1968 which went into effect in May, 1969. ^{13/} Regarding Resolution 69 lending, it required that (1) no more than 67 percent of the loans could be granted for marketing, and (2) the individual value of at least 70 percent of the marketing loans could not exceed 600 times the highest minimum wage, (3) 10 percent of the total lending would have to be made to farmers in amounts not to exceed 50 times the highest minimum wage of the country, (4) no more than 10 percent of the funds could be used to finance jeeps, station wagons and cattle, and (5) banks without bona fide agricultural credit departments could extend up to 50 percent of the loans for marketing, but the rest of their unused funds would have to be deposited with FUNAGRI. Efforts were initiated by the Central Bank to institute a comprehensive inspection system to assure that banks complied with the criteria, that they have bona fide agricultural departments, and that the loans were actually going to agriculture. A large training program also was set up to instruct commercial bank employees in techniques of rural credit.

Special Credit Programs

Besides these general regulations affecting agricultural credit, special credit programs have been designed to promote certain aspects of agricultural growth. A few examples follow. Credit has been used to speed the adoption of modern farm inputs in Brazil. Farm machinery purchases have been stimulated by reducing interest rates and lengthening repayment periods for loans incurred to purchase domestically manufactured tractors and farm implements.

AID has been active in various aspects of the credit program to promote fertilizer use. In the mid-1960's, AID granted two fertilizer import loans to Brazil for a total value of \$35 million dollars [2]. In 1966 the Brazilian government created FUNFERTIL (Fund for Financial Incentive to the Use of Fertilizers and Mineral Supplements) to grant food producers financial incentives to use fertilizer on crops and pastures and mineral supplements for livestock. An important part of the Fund's resources came from AID counterpart funds. The purpose of the Fund was

^{13/} Recent Resolutions modified some of the specifics but not the spirit of Resolution 97.

to finance part or all of the interest and administrative costs for fertilizer loans. Initially farmers were relieved of all interest charges, and later the program was modified so they paid either a zero or a three percent nominal rate of interest depending on loan size [78]. In 1966 FUNFERTIL financed 10 percent of total fertilizer consumption in the state of São Paulo; in 1968 it reached its highest volume by financing 49 percent of São Paulo fertilizer use, and 75 percent of national consumption. These credit terms were so favorable that there were reports of "paper fertilizer," that is, loans were taken out for fertilizer purchases and the funds diverted to other purposes.

FUNFERTIL ended in 1970 and was replaced by FUNDAG (Special Fund for Agricultural Development). Under both FUNFERTIL and FUNDAG lending agencies received interest rate subsidies which resulted in the agencies realizing interest rates equal to regular agricultural loans. FUNDAG's objectives were broader and included the stimulation of the adoption of modern inputs such as fertilizer, lime, mineral and protein feed supplements, improved seed, artificial insemination, and agricultural chemicals. Farmers were charged seven percent interest compared to three percent under FUNFERTIL. These favorable credit terms plus an improvement in fertilizer/crop price relationships were largely responsible for the growth in fertilizer consumption from 280,000 metric tons in 1966 to almost 1,000,000 tons in 1970 [52, p. 10].

Production of several commodities also has benefitted from special credit programs and policies. Major export commodities which also represent important sources of farm employment like coffee, sugar cane, and cocoa are eligible for credit to expand output, increase productivity, and finance exports. Also, during the decade of the sixties, special attempts have been made to reduce the foreign exchange drain of wheat imports by increasing domestic production. In 1962, the Bank of Brazil became the official purchaser of all wheat. All domestic production is purchased at fixed prices. Although real domestic wheat prices have dropped in recent years, prices during the 1960's were set at levels ranging from US\$100-130 per metric ton compared to FOB export prices of major exporting countries of US\$50-70. Subsidized credit for fertilizer and farm machinery was made readily available throughout the wheat growing region. Farmers were required to adopt recommended production techniques in order to receive Bank of Brazil operating credit for wheat growing. These highly favorable policies plus generally good weather conditions were responsible for the steady increase in production from 0.3 million metric tons in 1962 to 2 million tons in 1971.

The Brazilian livestock sector has lagged behind its growth potential, and the slaughter rate is low because of the traditional production technology employed. In 1967 a livestock development program was initiated (CONDEPE); World Bank and Interamerican Development Bank loans were obtained to finance large scale investments in cattle raising. The program got off to a very slow start in large part because farmers objected to the monetary correction built into the loans which offset advantages such as the 12 year repayment period, with a grace period on paying the first installment for the first three or four years. Farmer interest increased after mid-1970 when the price control commission (SUNAB) improved livestock prices, and the monetary correction feature was altered.

Brazil is striving to rejuvenate its aging coffee plantations and introduce more disease resistance varieties. The Coffee Institute is working with selected banks to provide credit at three to seven percent interest for financing the growth of seedlings, replanting of trees, fertilization and spraying equipment. Over Cr\$1 billion is planned for this use in the 1972/73 agricultural year in order to plant 200 million trees.

Credit Allocation System

The Central Bank established general guidelines for distribution of rural credit, but the individual banks set internal policies consistent with their specific objectives. In many cases, the local rural credit manager largely determines how the credit department of a particular agency is managed. In the case of the Bank of Brazil, the rural credit department manager often acts quite independently of the overall branch manager.

There are three basic steps in granting agricultural credit. The first is determining repayment potential of borrowers. To assure repayment, detailed information is obtained from the credit applicant giving personal characteristics, all assets and liabilities, and sources of income. This data is checked for accuracy and completeness. Second, an application for credit is completed giving amount, use and timing of disbursements and payments. Third, the bank is required to inspect loans to ascertain that the credit is being properly used. At one time inspection was required for all loans, but now banks are permitted to inspect a sample of their total portfolio.

Various forms of collateral are used to insure repayment. For operating and investment loans, where the borrower has a strong net worth position, the crop, livestock, or machinery financed can serve as the collateral. In other cases, a mortgage may be taken against other unencumbered property. If this collateral is still insufficient, a borrower may obtain a co-signer who will be responsible for repayment in the event of default. Farm renters usually do not need a rental contract but may be required to present a letter from the landowner giving him the right to crop the land.

In addition to these objective criteria, there are a number of subjective considerations used in making credit allocation decisions. For example, some banks limit their financing of crop production loans to a fixed proportion, currently 60 percent, of the expected value of production based on fairly low expected yields in order to reduce lender risks. If expected production costs do not justify the amount of credit requested, the bank may lend even less than this standard fixed proportion. On other types of loans, credit may be extended for up to 60 percent of the value of the collateral. In the case of some machinery loans, all of the purchase price may be lent. Some banks lend up to 50 percent of the borrower's total assets. ^{14/} For loans greater than that amount, a co-signer

^{14/} In the wheat growing region, the Bank of Brazil usually limits the amount of area financed in any one year to some fixed proportion of the acreage the borrower planted in the previous year.

is required. In many cases, a good co-signer can compensate for the borrower's weak net worth position or shaky loan repayment history.

Banks always strive to increase their volume of deposits. Farmers have a better chance of obtaining a loan when they maintain large bank deposits. They are usually asked to open an account when seeking credit for the first time in a new bank, and some lenders "suggest" that a portion of the money lent be retained in the account. Banks may also consider a loan application from a new customer in light of all banking services he may possibly use.

Even though this credit allocation system appears definitely weighted in favor of larger, wealthier farmers, bankers argue that all persons have access to credit. For high risk, limited equity renters and small farmers, there is the possibility of getting a co-signer to back a loan. Furthermore, the Bank of Brazil recently reduced interest rates for small loans below Central Bank requirements: loans above 50 minimum salaries are charged 15 percent interest while those below that amount are charged only 10 percent. Certain insurance, appraisal, collateral, and filing requirements can be waived for smaller loans.

Bankers admit, however, that smaller farmers are less likely to seek credit. Finding an appropriate co-signer is usually not easy because of the difficulties small farmers have in weathering economic setbacks. Frequently the only person who will be a co-signer is a relative or someone who has a special relationship with the borrower.

As mentioned above, the banks are not particularly interested in small farmers because of administrative costs and higher risk. Local managers of the Bank of Brazil who have tried to attend to small farmer needs complain about the attitude of new banks entering the rural credit field. They argue that the new banks try to attract a few of their older, well-to-do clients in order to meet their credit requirements, and leave the Bank of Brazil to serve the large pool of small and medium sized farmers.

Inflation and Agricultural Credit

Agricultural credit in Brazil cannot be thoroughly studied without at least mentioning the impact of high rates of inflation on the behavior of both farmers and lenders. This issue has not been treated in any great depth in Brazil.

From 1950 to the present, the annual increase in cost of living in Brazil has never been less than 10 percent, and almost reached 100 percent in 1964. The present government is utilizing a policy of gradual reduction in inflation, and the expected rate for 1972 is about 15 percent. It is often argued that inflation causes a misallocation of resources in the investment process, and can have a negative effect on the growth rate. Baer attempted to test these hypotheses in Brazil and concluded that growth in the period 1947-1961 was in part facilitated by the effect that inflation had in redistributing the increments in national output from consumers to investors [14]. Some of the potential misallocative forces of inflation were counterbalanced by built-in mechanisms. He argues that institutional factors may have caused some of the distortions which occurred. One of the reasons given for this conclusion, at least for the industrial sector, was that much investment was

derived from internally owned funds so that problems of cash balances and controlled rates of interest were not as pressing as would have been the case if more external financing had been used.

However, aside from the overall growth issue, there is the effect of inflation on financial institutions, savings rates, capital markets, and investment by farmers. The behavior of financial intermediaries in the inflationary environments is often distorted. In an inflationary economy cash is a poor storer of value so investments in inventories and capital goods are preferred to bank deposits. Banks face slow growth in reserves unless they offer high returns on deposits. Lenders try to keep loan portfolios heavily weighted with commercial and industrial paper rather than lend to agriculture at fixed negative real interest rates. Credit going to agriculture tends to be composed of a few large loans to reduce administrative costs and keep the "loss" from agricultural lending to a minimum. Loans are short term to reduce risk and permit quick turnover; funds obligated to agriculture may earn positive returns if lent to other sectors during brief periods of reduced demand in agriculture.

Farmers as investors are likely to be encouraged to invest in land rather than reproducible capital in periods of high inflation. Schuh found only about five percent of farm capital in 1940 was made up of machines and vehicles, while land represented 57 percent [70]. By 1965 real estate had declined somewhat in importance, but he concludes that there was little deepening of capital in the agricultural sector. Although this can be explained in part by relative prices, inflation also encourages this type of farm capital structure.

When farmers obtain subsidized credit, there is likely to be considerable leakage to non-agricultural uses where the return may be higher or toward the purchase of fixed capital assets rather than modern inputs. Problems such as "paper fertilizer" have prompted banks to incur additional administrative costs and adopt complex rules and regulations to discourage inappropriate or unauthorized use of borrowed funds. Also the Central Bank must employ a complex set of inspection procedures to ascertain that credit is actually used for intended purposes.

High rates of inflation force financial institutions to guard the real value of their portfolios. Attempts to force them to lend at negative real interest rates which erode the real value of those portfolios will be resisted, and inducements and controls of various kinds will be required to make them comply. Likewise, lenders must closely inspect loans to assure that credit is actually used for intended purposes.

IV. Informal Rural Capital Markets

Very little research or data is available on the nature, magnitude and extent of informal rural capital markets in Brazil. Some writers have assumed that informal credit transactions such as those between friends, relatives, and from merchants make up a very large proportion of the total rural capital market transactions [27, 31, 70, 72, 73, 82]. Little data is presented, however, to substantiate this assumption.

There is little discussion in the literature of the criteria which ought to be used to measure relative importance of the informal capital market. At least four distinct criteria might be used: (1) the number

of loans made in a given time period to farmers by the informal credit system in comparison with total loans made by the overall capital market, (2) the number of farmers who receive all or a major part of their credit in a given period from informal sources in comparison with the total number of farmers receiving credit from any source, (3) the total value of credit granted to farmers during a given period by informal sources of credit in comparison with total value of all farm credit granted during the same period, and (4) a composite credit-value-figure, which takes into consideration amount of loans as well as length of loan, from informal as well as all sources. This last criteria would weight a six month loan for \$100 at one-half the value of a 12 month loan for the same value. In an economic sense the latter two criteria appear to have the most meaning.

Results from a handful of recent farm level studies in Brazil appear to challenge the conventional thinking on the economic importance of the informal credit system. Erven, for example, found that 233 commercial crop and livestock farmers in Southern Brazil got only three percent of the value of their total agricultural credit portfolio from informal sources [33]. In the same general region, but among small farm operators, Rask and Rao found in an unpublished study that only one-third of the total value of farm credit used by 200 small farmers came from non-institutional sources. In a more recent study among 154 crop farmers in the northern part of the State of São Paulo Nelson found the total value of non-institutional credit use to be small [52]. During the year 1970, this sample of farmers had purchased fertilizer with credit valued at almost two hundred thousand dollars. Only about 15 percent of this value was provided by non-institutional credit sources. In a study which will be further discussed later in this paper, Tommy found similar low levels of non-institutional credit use among 338 farms he studied in 1965 and 1969 [83]. In 1965 approximately 40 percent of the total loan portfolio value held by these Southern Brazil farmers came from non-institutional sources. The absolute as well as relative value of non-institutional lending to these 338 farmers declined in 1969, however. Only 17 percent of their total loan portfolio came from non-institutional sources in that year. Data collected in 1971 in the southern region of the State of São Paulo appear to substantiate the results of both Nelson and Tommy. In the municipios of Itapetininga and Guareí Nehman found, in yet unpublished research, that non-institutional credit made up only 21 percent of the loan portfolio value for small and medium sized farms. The farm size in this sample was relatively small which may explain the slightly higher use of non-institutional credit. In a 1965 study of the same area Araujo found that only 17 percent of the number of loans held by 132 farmers came from non-bank sources [10, p. 82].

In general the studies reported on here suggest that non-institutional credit sources are more important for small farmers than for medium sized and large operators. There is also some indication in Tommy's study that the large buildup in formal agricultural credit during the late 1960's, plus the negative real rates of interest charged on this credit may have adversely affected the growth of the non-institutional credit system in rural areas. Much more information is needed on the nature and extent of the informal rural capital market in Brazil. It appears however that its size and importance has been generally overestimated.

V. Special Small Farmer Credit Programs in Brazil

At least two major programs and a number of small pilot projects in Brazil have been focused on providing more credit to small and medium-sized farmers. In many respects the most important of these has been the ACAR Credit program in the State of Minas Gerais. Begun in 1948 as a joint venture between the state government of Minas Gerais and the American International Association for Economic and Social Development (AIA), ACAR was aimed at assisting small-to-medium sized farms in the state. Supervised credit and extension education activities were the main approaches used. A good deal has been written about this program during the past 20 years [8, 47, 49, 50, 65, 66, 85, 86, 87]. In fact, ACAR's credit program has probably received more research attention than any other small farmer credit program in the world.

ACAR's program has moved through three distinct phases. In the first stage detailed farm plans were prepared and intensive supervised credit was provided. Later less detailed farm planning and less farmer supervision was done in ACAR's oriented credit program. In the 1960's emphasis again shifted this time to providing credit to "early adopters".

ACAR has relied upon the Caixa Economica do Estado de Minas Gerais, a state bank, to handle the loan paper work. Funds provided by AIA, the state, the Federal government and an Inter-American Development Bank loan of \$6.4 million in 1962 have been used in the operation. The interest rates charged on farmer loans have generally ranged from 6-8 percent on an annual basis. There has been very little default problem among the borrowers. In 1968 about 10,000 loans were in force under this program, for a total value of approximately ten million dollars [43, p. 29].

In general there have been four types of criticisms of the ACAR program: (1) the very low nominal interest rates charged on loans make it impossible to maintain the real value of ACAR's loan portfolio, (2) costs for supervising the loans were high, (3) only modest increases in income, net worth and capital formation have been noted among the borrowers, and (4) the program is only servicing a small proportion of the total number of small to medium-sized farm operators in the area. In 1968 only about 5 percent of the farmers in the state received credit from ACAR.

Ribeiro and Wharton cite the major accomplishments of the program as: (1) ACAR introduced ingredients of experimentation, adaption and flexibility into Brazil's agricultural development thinking, (2) administration of the program was unrelated to politics, (3) ACAR's program has trained a large number of Brazilian technicians, and (4) ACAR's experience was used to evolve a nationwide program of extension and credit [66].

Limited oriented credit programs for small farmers, following the ACAR model, have been initiated by extension services in a number of Brazilian states. Some of these started as early as 1954 in Ceara, 1955 in Pernambuco and Bahia, and 1956 in North Rio Grande and Paraiba. None of these programs, however, are as large and effective as the ACAR program in Minas Gerais.

In addition to the ACAR program, some additional special efforts have

been made to reach small farmers by loaning money to cooperatives for relending to their members. This has been especially true in the Northeast where both the BB and BNB have temporarily stationed bank employees in cooperatives to help with organizing the credit service. Part of the financing for these programs is provided by various state banks. Additional funds from the BNB, BNCC, and BB are also channelled through cooperatives. In the late 1960's the Inter-American Development Bank also lent about \$2.7 million to BNB which was directed at servicing small and medium sized farmers' credit needs through cooperatives in the Northeast.

Recently the IDB has attempted to reach small and medium farmers and their cooperatives through the national rural credit system by lending to the Central Bank. The \$26 million livestock loan for CONDEPE is used for oriented credit to farmers in the states of Rio de Janeiro, Espirito Santo, and Minas Gerais. Eligible producers are those with less than \$50,000 net worth, and loan-limits are \$5,000 to \$30,000. A national program of credit was supported by a loan of \$20.5 million followed by another of \$35 million. In this program, small farmers are defined as having net worth up to \$10,000 and medium farmers up to \$30,000. Loan terms run up to 12 years.

Resolution 181 of March, 1971 extended livestock development loans to small and medium farmers of the Northeast. The BB, BNB, and BNCC were authorized to make technically oriented loans to small farmers who were defined as having less than 100 times the value of the minimum wage in animal production, and medium farmers with less than 1,000 times that amount. Total resources were set at approximately \$133 million. Loans are for a maximum of eight years. Borrowers will be charged 7 percent interest, and the lending agency will receive another 5 percent from the FUNDAG fund.

Unfortunately there is little data available to evaluate these programs. Many programs only provide data on total amount of resources used without describing the types and number of farmers receiving credit. Only now are some banks beginning to collect statistics on number of farmers benefitted by loans to cooperatives. The data available from the BB, BNB, BNCC, the three institutions making most loans to cooperatives, suggest that in 1972 a total of 200-250 thousand farmers may receive credit from cooperatives. Most, but not all of these farmers are probably small.

Aside from a bit of information in the Northeast which suggests some default problems in loans to cooperatives, almost no information is available on the economic impact at the farm level of this credit.

A number of other small farmer credit pilot programs have been carried out in Brazil. In the early 1950's the Caixa's Rurais in Rio Grande do Sul attempted to reach small farmers through credit. Erven and Rask report on another small short-term small farmer credit program carried out in the early 1960's in Rio Grande do Sul [34]. As with other small farmer credit programs, little or no information is available to indicate the total magnitude of these pilot activities and their impact on small farmers. A lack of success may be signalled by the paucity of information available on these programs.

Overall it is doubtful if 5 percent of Brazil's total institutional resources directed to agricultural credit is moving through ACAR, other

extension-credit programs, cooperative credit and other special pilot programs to small-to-medium sized farmers. Further expansion in these programs is probably necessary and desirable. Clearly, however, improving the manner in which the overall banking system services small farmers offers more possibilities for substantially increasing credit for this group.

VI. Agricultural Credit in the Northeast

A number of special problems exist in the Northeast region of Brazil. This area has the largest geographic concentration of rural poverty in Latin America. The 15 million rural poor located there is larger in number than all the rural poor in Chile, Peru, Bolivia and Ecuador combined. Periodic droughts, landownership concentration, and poor quality of land resources further complicate problems, and present especially challenging conditions for farmer credit programs.

During the 1950's and early 1960's the BB and the BNB provided most of the rural credit in the Northeast. As a result of special tax incentives introduced in the early 1960's, some agricultural credit funds were also administered by the Superintendency for the Development of the Northeast (SUDENE). Most of these funds, however, were directed at a small number of large agricultural enterprises.

In the early 1970's the BB and the BNB together provided over 95 percent of the formal agricultural credit in the region. Other agencies providing rural credit include the BNCC, state banks and a few private banks. Little information is available on the nature and extent of the informal rural capital market in the Northeast. These sources of credit, however, are probably quite important in the interior areas, especially for the large numbers of renters and sharecroppers found in the region.

The amounts of BNB and BB credit to agriculture are shown in Table 6. In 1959 the BB and BNB provided 81 and 8 percent respectively of the total formal agricultural credit in the region. The BNB's proportion of this credit expanded rapidly through the 1960's until in 1968 it provided 36 percent of the region's agricultural credit. A decline in BNB agricultural lending since 1968, while the BB continued to expand its portfolio, resulted in BNB's relative share dropping to 18 percent in 1971.

In general the BB makes much smaller loans to farmers in the Northeast than does the BNB. In 1971 BB production loans averaged about \$1,100 dollars in size while the BNB averaged \$3,000 dollars. As will be pointed out later in this paper, since 1968, the BNB has sharply increased the real average size of its loans made to agriculture.

Outside of the creation of the BNB, relatively little special attention was given to agricultural credit problems in the Northeast until 1970; national credit policies were not differentially applied. It appears that the rate of growth in agricultural credit in the Northeast more-or-less matched the growth rates for all of Brazil. There was, however, some regional disparities as shown by credit-to-output ratios. In 1969 institutional loans to agriculture in the Northeast represented only about one-quarter of the region's gross agricultural output. In comparison the southern part of the country had a ratio of approximately .40.

Table 6
 Direct Agricultural Production Loans in Northeast Brazil
 By Two Banks, at 1971 Prices a/
 (in Millions of U.S. Dollars)

Year	Bank of Brazil*		Bank of the Northeast		Total Direct Loans	
	Value	Percent	Value	Percent	Value	Percent
1964	90.8	85.5	12.8	14.5	103.6	100
1965	83.6	81.0	19.5	19.0	103.1	100
1966	88.1	73.5	31.5	26.5	119.6	100
1967	102.5	65.0	55.1	35.0	157.6	100
1968	110.0	64.0	61.8	36.0	171.8	100
1969	113.9	73.5	41.2	26.5	155.1	100
1970	109.5	77.0	32.1	23.0	141.6	100
1971	185.5	82.5	39.1	17.5	224.6	100

* Includes commercial credit and credit under the minimum price support program.

a/

The General Price Index of the Fundação Getulio Vargas was used to deflate all Cruzeiro Values to 1971 prices. These were then converted to dollar values using an exchange rate of 5.635.

Source: Unpublished records of the Banco do Brasil and Banco do Nordeste.

In addition to the inter-regional comparisons which suggest credit shortage in the Northeast, several sets of farm level studies done during the 1960's also point toward the same conclusion. In the early 1960's Nicholls and Paiva found, for example, in their study of farms in three Northeast areas that credit-to-output ratios were very low [53]. In Caxias, Maranhao; Crato, Ceara; and Caruaru, Pernambuco they found the ratios of total-agricultural-credit-used-to-total-productive-capital to be .10, .03, and .04 respectively. Credit was an important factor of production in only a couple of the farms they studied.

More recent farm level studies by Michigan State University indicates some improvement in the rural credit situation, but also suggests that a large number of farmers in the Northeast still do not have access to institutional credit [72]. They interviewed 774 farmers in seven different areas of the Northeast in 1967. In only two of these areas did they find as many as 40 percent of the farmers who had any credit from banks or cooperatives. In one of the areas none of the farmers interviewed had institutional credit. Aside from a few relatively well-off rice and dairy farmers who had satisfactory access to credit, most farmers with credit had an average loan of only \$500 to 600 dollars. A significant number of farmers in each area felt they could not obtain bank or cooperative credit even if they sought it.

In a recent survey of cotton farmers by the Ministry of Agriculture in the interior of Ceara, it was found that almost all landowners used institutional credit but little or no informal credit. Conversely only one out of sixty sharecroppers had institutional credit but almost all had one or more informal loans obtained from farm owners or local merchants. In many cases they purchased consumption necessities on time from the local store owned by the landowner or storekeeper. Provisions exist for sharecroppers to obtain bank credit by providing a letter from the owner granting permission to farm the land. However, it appeared that few tried to get such credit, and if they tried, the banks were not likely to be very receptive.

A major concern in the Northeast is whether improved production technology exists in sufficient quantity to justify credit for purchased inputs. It has been reported that much of the operating credit actually goes to finance consumption [64]. The Ministry of Agriculture's survey confirmed that view for cotton producers. Much of the formal and informal credit was being used to finance family consumption from one harvest to the next. Large farmers borrowed operating credit and relent it to sharecroppers or paid direct labor costs. Few modern inputs were used so only a small fraction of total credit financed improved seed, lime, fertilizers, chemicals, and mechanization.

As suggested earlier, both the BB and BNB have attempted to service small farmers' credit needs through cooperatives in the Northeast. BB expanded its loans to agricultural cooperatives in the Northeast by 45 percent in real terms from 1970 to 1971. A number of sub-borrowers from these cooperatives were small farmers. In 1971 BNB lent money to cooperatives who in turn relent these funds to approximately 16 thousand small farmers. Overall, however, only a small portion of the small farmers in the Northeast were being touched by these cooperative programs.

The recently announced Proterra program for the Northeast includes a strong credit component. ^{15/} In addition to some land redistribution, Proterra provides loans to agricultural producers for financing modern inputs at zero nominal rates of interest. Additional credits are provided at a seven percent interest rate to finance other production materials, supplies and equipment. In 1972 a total of \$170 million dollars was provided for financing Proterra through December 31, 1972. In addition a total of \$700 million dollars was earmarked for this program over the next four years. It is still not clear how much of these funds will actually filter down to small farm operators [64]. The recent increase in small loans made by the BB in the Northeast may imply that these and other programs are having some impact.

VII. Participants in Formal Agricultural Credit in Brazil 1965-1970

It is surprisingly difficult to determine the characteristics of agricultural credit borrowers in Brazil. In part this is due to the fact that credit information published by various banks, including the Central bank, generally focuses on loan rather than borrower characteristics. Agricultural loans are usually classified by loan size, the economic activity used as justification for the loan, and the loan terms. In some cases credit data are also presented by land tenure class under which the borrower operates. That is, whether the borrower is an owner of land, a renter, or a share-cropper. Only the size of the loan and the tenure information give some insights into who borrows money. As will be shown later, however, many institutional credit borrowers in Brazil have multiple loans and large farmers have small loans [87, p. 14]. Thus, loan size is only a weak reflection of size of economic operation run by the borrower. Likewise, large as well as small farmers may rent a major portion of the land they operate. These factors help explain the apparent discrepancy between banking statistics and farm level studies.

As was previously noted in Table 2 the number of new, formal agricultural loans increased from 231 thousand in 1960 to almost 1,200 thousand in 1970: over a five fold increase. This was almost as large as the increase in the real value of money lent. The most rapid period of increase covered roughly the 1964 to 1969 period. It is unlikely that the "spread effect" of Brazil's substantial increase in agricultural credit was as large as these figures might suggest, however.

Three types of data in the following discussion are used to shed light on this question: (1) loan portfolio information from the Bank of Brazil and the Development Bank of the Northeast, (2) credit use information drawn from farm level surveys carried out in 1965, 1969-70, and in 1971 in Southern Brazil, and (3) credit use information for 338 farmers interviewed in 1965 and 1969 in Southern Brazil. While these data are not representative of all credit conditions in Brazil, they do give valuable insights into how some segments of the rural capital market have operated in Brazil.

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^{15/}

Decree Law No. 1179 of July 6, 1971.

The BB's and BNB's Rural Credit Portfolio

In spite of the increase in rural credit provided by other banks, the BB is still the most important source of rural credit. BB statistics show that the bank's share in number and value of rural credit loans dropped to below 50 percent in 1969 but again increased in 1971 so that BB loans represented 56 percent of the total number of loans and 51 percent of total value. In many regions it still provides 60 to 70 percent of total rural credit, and in some states that proportion exceeds 90 percent. As seen in Table 7, the BB increased the number of rural loans by over 50 percent from 1966 to 1971.

The BB has attempted to meet small farmer needs and its data seem to confirm that effort. Small loans represented approximately 90 percent of total loans between 1966 and 1971. There was a tendency between 1968 and 1970 for the relative value of small loans to decline but the trend was reversed in 1971 when the proportion of credit lent as small loans rose to 37 percent of total value. These data suggest that small farmers received a relatively constant proportion of total credit during BB's credit expansion of the late 1960's and early 1970's.

The BB continues to be the most important source of rural credit in Northeast Brazil. In fact, BB statistics show that its share of total value of rural credit in the region rose from 49 to 62 percent between 1969 and 1971 [15]. This change is largely explained, however, by changes in BB lending in 1971. As shown in Table 8, BB made 15 to 25 thousand fewer rural loans per year in the Northeast between 1967 and 1970 than it made in 1966. Likewise the total value was \$7-12 million dollars less per year, measured in real terms. In 1971 the BB made 140 thousand loans valued at over \$170 million dollars far exceeding the \$100 million lent in previous years. This spurt in credit reversed the steady downward trend in proportion of BB rural credit going to the Northeast but the percent of number and value of loans is still below 1966 levels.

By comparing Tables 7 and 8, it can be seen that the proportion of BB credit in the Northeast lent as small loans has been higher than the national average in both number and value of loans. Furthermore, a significant proportion of the 1971 increase in credit was made up of small loans; the proportion of total value was 46 percent that year compared to 38 percent the previous year. It would appear that the BB has attempted to respond to the larger number of small farmers in the Northeast by making larger numbers of small loans. However, the relationship between making small loans and lending to small farmers is not perfect. As will be shown later, it is difficult to derive firm conclusions from these bank statistics.

As was previously mentioned, the BNB is one of another major source for formal agricultural credit in the Northeast. As can be noted in Table 9 over the 1961 to 1968 period, the BNB had a four fold increase in the real value of its new agricultural loans. A decrease in the volume of agricultural loans from 1968 to 1971 still resulted in BNB lending almost three times as much in real terms to agriculture in 1971 as in 1961. Likewise, over the 1961 to 1968 period the total number of new rural loans made annually by BNB more than doubled. This number was almost halved from 1968 to 1971 however.

Table 7
Value and Number of New Rural Loans Made by the
Bank of Brazil, 1966-1971

Year	Total Rural Loans		Percent Small Loans b/	
	Number	Value in 1971 Prices a/ (Millions U.S. Dollars)	Number	Value
1966	461,293	651	88	28
1967	481,945	597	90	37
1968	540,699	713	89	36
1969	563,624	784	88	33
1970	612,879	914	87	32
1971	737,707	1,155	92	37

a/ Current values were converted to 1971 values using the General Price index, aggregate supply, published by the Getulio Vargas Foundation in *Conjuntura Econômica* Vol. 26, No. 7, 1972, p. 164. The adjusted Cruzeiro values were then converted to U.S. Dollars using the 1971 exchange rate listed in the appendix.

b/ Small loans are defined as being less than or equal to 50 minimum salaries. In mid-1971 this equaled Cr\$11,280. At an exchange rate of Cr\$5.47 for each U.S. dollar this equaled \$2,062. Bank statistics by size of loan do not provide size intervals exactly equal to 50 minimum salaries resulting in some overestimation, especially for 1971.

Sources: Published and unpublished data of the Banco do Brasil.

Table 8

Value and Number of New Rural Loans Made by the
Bank of Brazil in Northeast Brazil, 1966-1971

Year	Total Rural Loans		Percent of Small Loans ^{b/}		Percent of BB Loans <u>in NE</u>	
	Number	Value in <u>a/</u> 1971 Prices (Million U.S. Dollars)	Number	Value	Number	Value
1966	115,886	122	94	31	25	19
1967	98,944	109	93	35	21	18
1968	95,199	110	94	37	18	15
1969	91,854	114	91	35	16	14
1970	97,549	109	92	38	16	11
1971	140,293	185	95	46	19	16

a/ Current values were converted to 1971 values using the General Price Index, aggregate supply, published by the Getulio Vargas Foundation in Conjuntura Econômica Vol. 26, No. 7, 1972, p. 164. The adjusted Cruzeiro values were then converted to U.S. dollars using the 1971 exchange rate listed in the appendix.

b/ Small loans are defined as being less than or equal to 50 minimum salaries. In mid-1971 this equaled Cr\$11,280. At an exchange rate of Cr\$5.47 for each U.S. dollar this equaled \$2,062. Bank statistics by size of loan do not provide size intervals exactly equal to 50 minimum salaries resulting in some overestimation, especially for 1971.

Sources: Published and unpublished data of the Bank of Brazil.

Table 9

Value and Number of Rural Loans Made by the Bank of Northeast Brazil, 1961-1971

Year	Total No. of Rural Loans <u>a/</u>	Percent of Loans Which Were Small <u>b/</u>	Total Value of Rural Loans in 1971 Prices <u>c/</u>	Percent of Total Loan Value Lent in Small Loans <u>b/</u>		
				Total	Direct <u>d/</u>	Cooperatives <u>e/</u>
		%	(thousand U.S. dollars)	%	% of Total Value in Small Loans	
1961	22,822	94	17,061	68	75	25
1962	22,015	99	15,508	90	82	18
1963	23,364	96	13,127	84	83	17
1964	26,714	94	14,626	77	84	16
1965	32,017	99	21,466	94	90	10
1966	38,963	86	34,744	45	79	21
1967	44,972	82	59,415	33	78	22
1968	50,764	85	72,191	36	60	40
1969	36,951	87	48,007	36	59	41
1970	25,891	86	37,323	31	54	46
1971	28,902	86	44,911	31	58	42

a/ Figures are for new loans made during the year. This includes loans made to cooperatives, part of which was sub-loaned to farmers.

b/ Small loans are defined as being less than or equal to 50 minimum salaries. In mid-1971 this equaled Cr \$11,280. At an exchange rate of Cr\$5.47 for each U.S. dollar this equaled \$2,062. Bank statistics by size of loan do not provide size intervals exactly equal to 50 minimum salaries resulting in some overestimation, especially for 1971.

c/ Current values were converted to 1971 values using the General Price Index, aggregate supply, published by the Getulio Vargas Foundation in Conjuntura Econômica Vol. 26, No. 7, 1972, p. 164. The adjusted Cruzeiro values were then converted to U.S. dollars using the 1971 exchange rate listed in the appendix.

d/ Loans made directly to farmers by the Banco do Nordeste (BNB).

e/ Loans made by the Banco do Nordeste to farmer cooperatives. All of the sub-loans made by these cooperatives were of sizes less than 50 minimum salaries.

Sources: Banco do Nordeste, Relatório Exercício 1970 and 1971, pages 215 and 153, respectively; various unpublished reports prepared by the DERUR section of the Banco do Nordeste.

Percentage wise a substantial portion of BNB's loans in 1961 were of the small variety. About 94 percent of their loans were of 50 minimum salaries or less in size. This declined somewhat to 86 percent in 1971. Between 1968 and 1971, however, BNB reduced the absolute number of small loans made on an annual basis by 18,000. Also in absolute terms, BNB was making only about three thousand more small loans in 1971 than in 1961, barely a 15 percent increase over the number in 1961. If there was some increase in the number of people with multiple small loans from BNB in 1971 over 1961 there may have been little or no increase in the number of people served by BNB with small loans.

Turning to the value figures in Table 9 similar trends can be noted. In 1961 about two-thirds of the \$17 million dollars lent by the BNB to rural sources went out in small loans, i.e. \$11 million dollars. In 1971 less than a third of the value of BNB's loans fell in the small rural loan category, for a total value of \$14 million dollars. The 1971 figure was only a little over half the value of small loans made by BNB in 1968, and only about 20 percent more than the 1961 figure.

It is clear that the BB has managed to maintain and even increase small loans at the same time that the BNB has experienced a trend toward larger loans. It is particularly disheartening that the BNB as the major developmental bank situated in the most critical poverty region in Latin America and specifically charged with accelerating the region's development has made so little progress in servicing small farmers over the past decade.

No clear cut reasons emerge to explain BNB's inability to substantially increase its services to small farmers in the Northeast during the "development decade." Compared to the BB it has not always had access to or responsibility for certain special funds for the region. However, more importantly, the BNB has been very sensitive during recent years to its internal profits. In many respects it has operated like a private bank, attempting to maximize net returns and placing less emphasis on achieving social objectives. An example of this was a 1968 study carried out by BNB which attempted to measure lending costs for various sizes of agricultural loans. Given the BNB's lending practices and the rates of interest they were allowed to charge on rural loans, they concluded that loans of less than 50 minimum salaries, (roughly \$2,000 U.S.) resulted in an operational loss to BNB. The sharp reduction in BNB small loans from 1968 to the present and the increased emphasis on lending to cooperatives were direct results of these conclusions. Parenthetically, there was apparently little or no consideration given by BNB to attempting to lower their costs of lending small amounts ^{16/} Some additional reasons for the lack of credit spread in the Northeast will be treated later in this paper.

Cross Sectional Data from Southern Brazil 1965 to 1969-70

Additional insights into the extent to which the rural capital markets in Brazil have serviced small farmers can be obtained from summary data

^{16/} Why the BNB could not afford to continue as high a proportion of small loans as the Bank of Brazil is not clear. It is also unclear why a number of other banking agencies, cooperatives, farmer associations, etc. around the world have been able to work out profitable means of lending small amounts while the BNB has not.

derived from various farm level studies carried out between 1965 and 1971 in Southern Brazil. These studies were done in areas which were experiencing rapid technological changes, areas which included some of Brazil's best agricultural resources, and areas which were most adequately serviced by the institutional credit systems. ^{17/} While not representative of all of Brazil, these farm data do show how various parts of the rural capital markets are servicing different groups of farmers in Brazil.

As can be seen in Table 10, in 1965 a broad spectrum of 953 farmers was interviewed. They represented various farm types, enterprises and farm sizes typical in the southern region of Brazil. In 1969-70, 1,264 interviews were carried out; approximately one quarter of these, 338, were repeats from the 1965 survey. An additional 150 farms were later interviewed in the central part of the state of São Paulo, and will be reported on separately later in this section.

In Table 10 it can also be noted that overall in 1965, 43 percent of the farmers were receiving some cash credit, most of which was from institutional sources. Thirty-three percent of the farmers had credit in kind during the same year, almost all of which was from non-institutional sources. In total, 56 percent of the farmers made use of formal and/or informal credit in 1965. It can also be noted that the largest farm size group, those with over 200 hectares of land, had substantially higher credit participation rates in both cash and kind credit than did any of the other size groups.

Credit data for the 1969-70 period is also presented in Table 10. Overall the percentage of farmers with cash credit increased from 43 percent in 1965 to 67 percent of those interviewed in 1969-70. Part of this increase over the 1965 figure can be explained by the addition of farms to the sample which were located in areas more adequately serviced by formal credit systems than those interviewed in 1965: the northern part of the state of São Paulo for example. At least part of the increase in the percentage, however, was undoubtedly due to some spreading of the increased credit supply to additional borrowers.

It can also be noted in Table 10 that in 1969-70 the percentage of farmers with credit in kind dropped to 31 percent. There was an absolute decline in the number of loans in kind, which was mainly informal credit, among the two largest farm size groups as well as the smallest farm size group. It might have been expected that large farmers with access to ample formal credit might reduce their use of non-institutional credit. It was not expected that small farmers would have a similar reaction. Without

^{17/} The states in which the studies were carried out were São Paulo, Santa Catarina, and Rio Grande do Sul. For descriptions of these areas, see Norman Rask, "Analysis of Agricultural Development Problems at the Farm level: Methodology and General Farm Description," AFC No. 18, Department of Agricultural Economics and Rural Sociology, The Ohio State University, August, 1968; and Kelso L. Wessel and William C. Nelson, "Methodology and General Data Description: Farm Level Capital Formation in São Paulo, Brazil" Occasional Paper No. 47, Department of Agricultural Economics and Rural Sociology, The Ohio State University, December, 1971.

Table 10

Number of Farms and Percentage Participation in Various Types of Credit
in Southern Brazil by Farm Size, 1965 and 1969-70.

Farm Operating Unit Size (Hectares)	Number of Farmers Interviewed		Percent of Farmers with Various Types of Credit in					
	1965	1969-70	1965			1969-70		
			Credit in			Credit in		
	Number		cash	kind	mixed	cash	kind	mixed
			Percent					
0 - 19.9	304	273	37	31	52	47	28	59
20.0 - 29.9	197	194	44	31	55	58	38	70
30.0 - 49.9	158	166	39	31	49	66	39	78
50.0 - 99.9	101	196	42	37	56	71	37	78
100.0 - 199.9	67	158	36	30	49	73	28	75
200 +	126	277	67	40	75	82	23	85
Total	953	1,264	43	33	56	67	31	74

Source: Farm interviews carried out in 1965 and 1969-70 in Rio Grande do Sul, Santa Catarina and São Paulo.

further analysis it is not clear if small farmers substituted cash credit for credit in kind, or whether there was less credit in kind available for small farmers in 1969-70 than in 1965.

Except for the smallest farm size group, there were increases in the percentage of each farm size group which had some form of credit in 1969-70 over the 1965 surveys. Approximately three-quarters of the farmers interviewed in 1969-70 had cash and/or kind credit. One might conclude from these figures that some spread effect had occurred in the credit increase over the 1965 to 1969-70 period.

Somewhat different conclusions can be drawn when the volume of credit, that is credit value, is analyzed. As can be noted in Table 11 there were 193 of the 953 farms interviewed in 1965, 20 percent, who operated 100 hectares or more of land. Valuedwise, however, these large farmers absorbed 80 percent of all of the cash credit held by the farmers interviewed in 1965. They also held two-thirds of the value of credit in kind. Overall these farmers had 72 percent of the value of all credit held by the farmers interviewed.

Similar data for 1969-70 is presented in Table 12. Of the 1,264 farmers interviewed during this period 22 percent had 200 hectares of land or more. This large farm group held 74 percent, however, of all cash credit, a third of the credit in kind, and 70 percent of total credit. Since the largest farm size group has approximately the same proportion of total credit in both surveys, it appears that this group has absorbed a large majority of the increase in credit value available over the 1965 to 1969-70 period.

Another view of the relative credit use among various farm size classes can be drawn from comparing the ratios of credit-to-gross-output by different farm size groups as shown in Tables 11 and 12. In 1965 farms with less than 30 hectares of land had credit equal to less than one-fifth the value of their gross output. The largest farm size group had a ratio of .47. These ratios for small farms improved in the 1969-70 period, but they still only reached about two-thirds the ratios found among larger farm size groups. It should also be noted that a handful of "small farms" were absorbing a substantial part of all credit received by the small farmer class in 1965 and 1969-70. Some of these "small farms" were intensive swine, poultry, and dairy enterprises which were rather large businesses run on relatively small amounts of land. Some of the other "small farmers" who received relatively large amounts of credit were only part-time farmers with substantial economic interests outside of agriculture. Subtracting these "small farmers" from the small farmer class would have resulted in less significant changes in the ratio of credit-to-gross-output over the 1965 to 1969-70 period.

Time Series Data

As was mentioned earlier, there were 338 farmers interviewed in 1965 in the States of Rio Grande do Sul and Santa Catarina who were reinterviewed in 1969-70. Some 49 percent of these farmers were users of institutional credit in 1965. Despite the major increase in value of institutional loans made to this group by 1969-70, the percent of farmers with institutional loans only increased to 56 percent. There were 146 non-borrowers of institutional credit in 1965. About one-third (56) of these

Table 11

Credit Use, Operating Expenses, and Farm Output by Farm Size Groups,
953 Farms in Southern Brazil, 1965

Farm Operating Unit Size	No. of Farms	Total Cash Credit	Total In-Kind Credit	Total Credit 2 + 3	Total Cash Operating Expenses	Total Gross Farm Output	Ratio of Credit-to-Gross-Output
Hectares	1	2	3	4	5	6	7 (4/6)
	(U.S. dollars and 1965 Prices)*						
0 - 19.9	304	13,010	21,501	34,512	80,391	180,366	.19
20.0 - 29.9	197	15,531	15,087	30,618	68,336	169,953	.18
30.0 - 49.9	158	19,147	25,980	45,127	79,080	173,890	.26
50.0 - 99.9	101	24,206	21,067	45,273	96,507	146,739	.31
100.0 - 199.9	67	25,543	35,254	60,798	130,061	178,566	.34
200 +	126	373,557	197,649	571,206	1,255,598	1,224,208	147
Total	953	470,995	316,539	787,534	1,709,972	2,073,722	.38

*Converted to U.S. dollars using exchange rate of 2.22.

Source: Farm interviews carried out in 1965.

Table 12

Credit Use, Operating Expenses, and Farm Output by Farm Size Groups,
1,264 Farms in Southern Brazil, 1969-1970

Farm Operating Unit Size	No. of Farms	Total Cash Credit	Total In-kind Credit	Total Credit 2 + 3	Total Cash Operating Expenses	Total Gross Farm Output	Ratio of Credit-to- Gross - Output
	1	2	3	4	5	6	7 (4/6)
Hectares		(U.S. dollars and 1965 Prices)*					
0 - 19.9	273	44,218	26,940	71,158	154,237	201,974	.35
20.0 - 29.9	194	46,723	32,019	78,742	179,614	210,812	.37
30.0 - 49.9	166	80,597	39,245	119,842	244,346	283,974	.42
50.0 - 99.9	196	297,403	132,037	429,440	791,617	734,459	.59
100.0 - 199.9	158	668,960	154,277	823,236	1,357,887	1,259,960	.65
200 +	277	3,291,928	193,850	3,485,780	7,246,025	6,948,430	.50
Total	1,264	4,429,829	578,368	5,008,197	9,973,727	9,639,609	.52

* Adjusted to 1965 Cruzeiro prices using the unpublished index of prices-paid-by-farmers-for-purchased-inputs-in-São Paulo, constructed by the Instituto do Economia Agrícola, Secretaria da Agricultura, São Paulo: Base period 1948-1952 = 100, 1965 = 7,513, and 1969 = 17,590. Then converted to U.S. dollars using exchange rate of 2.22.

Source: Farm interviews carried out in 1969-70.

received institutional credit in 1969-70. There was also, however, 37 borrowers in 1965 who did not borrow in 1969-70. That is, there was a net gain of 19 new borrowers over the 1965 to 1969-70 period. Overall about one-quarter (90) of the 338 farmers were not associated with institutional credit in either year.

In Table 13 institutional loan information for these 338 farms for both 1965 and 1969-70 are presented. As can be noted, the total number of institutional loans held by this group increased from 197 in 1965 to 280 in 1969-70. As already mentioned, only 19 new borrowers were reached by the additional 83 loans. Most of the additional loans were absorbed by individuals who already had formal credit and merely increased the number of loans which they held. The "spread effect," therefore, was much smaller than one might think from looking at numbers of additional loans made.

It can also be noted in Table 13 that the total value of institutional loans held by the 338 farmers increased by 116 thousand dollars from 107 thousand dollars in 1965 to 223 thousand in 1969. Two-thirds of this increase was absorbed by the largest eleven farmers in the group. It can also be noted that these 11 farmers increased their proportion of the total value of institutional loans held by the entire 338 farms from 53 percent in 1965 to 60 percent in 1969. Valuewise, there was more loan concentration in 1969 than in 1965.

Information on changes in non-institutional credit use among the 338 farms is presented in Table 14. The number of non-institutional loans held decreased from 283 in 1965 to 240 in 1969, and there was also a sharp drop in the total value of informal loans. It appears that the availability of non-institutional credit was adversely affected by the large increase in institutional credit. The fact that non-institutional credit made up less than 20 percent of the total value of credit held by the farmers in 1969 is also an interesting point. This further substantiates the point made earlier that non-institutional credit sources play a minor role in Brazilian agriculture.

Cross Sectional Data From São Paulo, 1971

In 1971 an additional 150 farmers were interviewed in the municipios of Itapetininga and Guareí in the State of São Paulo. As can be noted in Table 15, banks were by far the most important sources of credit for these farmers. Almost 85 percent of the total value of credit held by this group of farms came from banks. As shown in Table 16, only a minor proportion of the small farm operators had access to institutional credit, while almost all large land operators made use of this resource. The 15 farmers in the largest size strata held 84 percent of the outstanding institutional credit. At the same time, only 27 percent of the credit of small farmers came from institutional sources.

VIII. The Economics of Credit Use in Brazil

To this point we have presented various pieces of data which suggest that there was relatively little "filterdown" to Brazilian small farmers of the substantial increases in agricultural credit during the late 1960's. These results are contrary to bank data for reasons explained above. Two contrasting arguments might be put forward to explain this lack of credit spread. The first, and the one most often heard in Brazil, is that small

Table 13
 Institutional Credit Use By Farm Size,
 338 Farmers In Southern Brazil, 1965 and 1969-70

Size of Land- ownership Unit (Hectares)	1965			1969		
	No. of Farms	No. of Loans <u>a/</u>	Value of Loans (U.S. dollars) <u>c/</u>	No. of Farms	No. of Loans <u>a/</u>	Value of Loans <u>b/</u> (U.S. dollars) <u>c/</u>
0-9.9	37	8	630	42	16	3,606
10.0-19.9	102	46	7,782	104	75	16,782
20.0-29.9	95	57	12,675	90	73	22,156
30.0-49.9	55	31	9,411	53	48	23,403
50.0-99.9	38	33	21,090	38	31	24,555
100.0-499.9	9	15	32,984	8	24	77,081
500 +	<u>2</u>	<u>7</u>	<u>22,877</u>	<u>3</u>	<u>13</u>	<u>55,189</u>
Total	338	197	107,449	338	280	222, 773

a/ Number of loans on which a balance was owed at time of interview.

b/ Deflated to 1965 prices using the unpublished Index of prices-paid-by-farmer-for-purchased-inputs-in São Paulo constructed by the Instituto do Economia Agricola, Secretaria da Agricultura, São Paulo: Base Period 1948-52=100, 1965=7, 513 and 1969=17,590

c/ Converted to U.S. dollars using rate of 2.22.

Source: Farm interviews carried out in 1965 and 1969 in Rio Grande do Sul and Santa Catarina.

Table 14

Non-Institutional Credit Use by 338 Farmers in Southern Brazil 1965 and 1969-70 by Farm Size

Size of Landownership Unit (Hectares)	1965			1969-70		
	No. of Farms	No. of Non- Inst. Loans <u>a/</u>	Value of Non-Inst. Loans (U.S. dollars) <u>c/</u>	No. of Farms	No. of Non- Inst. Loans <u>a/</u>	Value of Non- Inst. Loans <u>b/</u> (1965 prices) (U.S. dollars) <u>c/</u>
0 - 9.9	37	34	5,457	42	35	2,592
10.0 - 19.9	102	76	18,107	104	64	6,145
20.0 - 29.9	95	62	10,718	90	57	4,877
30.0 - 49.9	55	44	8,597	53	44	4,712
50.0 - 99.9	38	48	13,632	38	26	2,828
100.0 - 499.9	9	12	19,456	8	9	16,886
500 +	2	7	13,470	3	5	11,484
Total	338	283	89,437	338	240	49,523

a/ Number of loans on which a balance was owed at time of interview.

b/ Deflated to 1965 prices using the unpublished index of prices-paid-by-farmers-for-purchased-inputs-in São Paulo, constructed by the Instituto do Economia Agrícola, Secretaria da Agricultura, São Paulo: Base period 1948-1952 = 100 1965 = 7,513 and 1969 = 17,590.

c/ Converted to U.S. dollars using exchange rate of 2.22.

Source: Farm interviews carried out in 1965 and 1969-70 in Rio Grande do Sul and Santa Catarina.

Table 15

Number and Value of Loans by Source,
150 Farms in São Paulo, 1971

Loan Source	No. of Loans <u>a/</u>	Percent of Total	Value of Loans <u>a/</u> (U.S. dollars) <u>b/</u>	Percent of Total
<u>Institutional Sources</u>				
Bank of Brazil	24	16	30,902	32
State Bank of São Paulo	38	25	33,556	34
Other Banks	9	6	16,449	17
Sub-Total	71	47	80,907	83
<u>Non-Institutional</u>				
Family	9	6	1,329	1
Friends	13	9	2,977	3
Neighbors	10	7	1,340	2
Moneylenders	2	1	195	1
Merchants	22	15	1,251	1
Former Land Owners	5	3	6,115	6
Input Dealers	19	12	2,979	3
Sub-Total	80	53	16,186	17
Total All Loans	151	100	97,093	100

a/ Loan number refers to loans on which balance was outstanding at time of interview. Loan value refers to original principal value of loans on which a balance was owed at time of interview.

b/ Converted to U.S. dollars using exchange rate of 5.635

Source: Farm interviews carried out in 1971 in the municípios of Itapetininga and Guareí, São Paulo.

Table 16

Average Value and Percentage Distribution of Loans Outstanding by
Loan Source and Size of Farms, 150 Farms in São Paulo, 1971

Operating Unit Size (Hectares)	No. of Borrowers	All Loans		Institutional Loans			Non-Institutional Loans		
		Percent Distri- bution	Average Value of Loans ^{a/}	No. of Borrowers	Percent Distri- bution	Average Value of Loans ^{a/}	No. of Borrowers	Percent Distri- bution	Average Value of Loans ^{a/}
			(U.S. dollars) ,			(U.S. dollars)			(U.S. dollars)
0 - 20	38	6	146.1	12	2	125.1	31	26	135.6
21 - 100	30	20	651.4	15	14	744.6	26	51	322.0
100 +	16	74	4,458	15	84	4,510	3	23	1,226
All Farms	84	100	1,148	42	100	1,912	60	100	270.9

^{a/}

Converted to U.S. dollars using exchange rate of 5.635. Values refer to original principal on loans outstanding at time of interview.

Source: Interviews with 150 farmers carried out in municípios of Itapetininga and Guareí, São Paulo in 1971.

farmers have failed to seek participation in the expanded credit supply. That is, various types of small-farmer-demand impediments restrict credit use. These alleged impediments include: (1) small farmers lack the knowledge of how to use credit, (2) small farmers usually use credit for consumption purposes, (3) small farmers are afraid to borrow because of unfamiliarity with bank procedures, (4) they are also afraid to borrow because of production risks, and (5) small farmers lack profitable uses for credit.

An alternative and less popular explanation of the lack of credit spread focuses on institutional credit supply questions [3]. There are two facets of this argument: (1) the overall supply of agricultural credit is limited and banks do not have enough to service small farmer needs, and (2) the banking system generally lacks incentives to loan to small farmers.

A comprehensive explanation of the lack of credit spread in Brazil would include elements of both the demand and supply arguments. In the following discussion we attempt to assess the relative importance of these various arguments as well as suggest which impediments to small farm use of credit might be most easily treated by policy adjustments.

Demand Questions

There are several pieces of data which indicate that small farmers in Brazil will use credit if given the opportunity to do so. Erven and Rask, for example, report on a pilot program aimed at providing credit to small farmers in the State of Rio Grande do Sul [34]. They reported that small farmers were eager to absorb additional quantities of credit, and in fact a large number of previous non-borrowers sought credit when given the opportunity. Previously reported results of the BNB's lending patterns in Northeast Brazil provides further evidence on this point. As was noted in Table 9, between 1968 and 1971 the BNB reduced the number of agricultural loans, which they made by almost 22 thousand. Approximately 18 thousand of these eliminated loans fell in the small size category. That is, borrowers who were interested in contracting 18,000 loans in 1968 from the BNB found themselves without loans from the BNB in 1971. Defaults were not a problem on these loans. The fact that small borrowers participated in formal credit system in one time period, and repaid their loans suggests that they would be willing to use additional credit if allowed. At the same time, the BB maintained its level of small loans in the Northeast and even rapidly expanded small loans in 1971. These data suggest that timid behavioralistic tendencies among farmers, with respect to credit use, are not a major factor in explaining why small farmers do not use more credit in Brazil.

A more serious assertion is that small farmers lack profitable uses for credit. Some policy makers in Brazil argue that, for various reasons, small farmers realize very low marginal returns from use of inputs which credit might purchase, while larger farmers realize high marginal returns. They conclude therefore, that market forces within rural financial markets correctly direct the flow of funds to large operators. The fact that large farmers absorb most of the credit is cited as proof of this argument. The weakness in this argument is that during the past two decades, Brazil has not had positive real market prices on agricultural credit. With an income

transfer implied in credit transactions under negative real interest rates, one cannot conclude that credit use logically entails substantial economic returns in an agricultural production process. Credit may be used largely because of the income transfer under existing credit pricing arrangements rather than because of returns from production. Only detailed production function analysis of Brazilian farms can provide insights into the farm level economics of credit use.

Over the past three to four years a handful of such studies have been carried out on Brazilian farm data. The results from these studies may not be representative of all of Brazil because they tend to be based primarily on data from southern and central regions. They do, however, provide evidence on two points which appear to be worthy of further testing:

- (1) Overall, among all farm size groups, agricultural resources in Brazil appear to have relatively low productivities. Said another way, many Brazilian farmers are working with low profile production functions.
- (2) Heavy users of formal agricultural credit which tend to be large farmers, in Brazil, have been able to increase input use up to or near the point where marginal costs and returns are equated. At the same time, small farm operators with limited access to formal credit appear to be facing some external capital rationing problems. That is, they have at least some opportunities to profitably use additional credit in their production processes. In a tentative way we conclude from this research that some reallocation of formal credit from current large agricultural credit users to some small and medium sized farms in Brazil would have a positive impact on output as well as help to better achieve employment and income distribution objectives. The highlights of some of this research are presented below.

A study by Rao using 1965 farm level data from 451 farms in several areas of southern Brazil provides some evidence on these points [59]. He measured the returns to various inputs including general capital inputs: working assets and operating expenses. The farms analyzed were divided into subsets on the basis of size and farm type. In general he found that investments in working assets (production and work animals, and equipment) were close to the economic optimum for all sub groups of farms. Investments in operating expenses, however, were less than the optimum level on all farm types except large crop farms. These large farms had access to substantial amounts of institutional credit. The general finding of the analysis was that the degree of under-investment in operating expense was higher on smaller farms where the level of institutional credit use was lower. Marginal value productivities (MVP's) for operating expenses for both borrowers and non-borrowers on small farms, and for non-borrowers on large farms, were about 1.7, whereas large borrowers experienced MVP's of 1.37. It was concluded, therefore, that there were profitable investment opportunities on small farms, but they were facing some external credit rationing.

Companion research by Rask [60, 63] utilizing subsets of the same data give additional details. In this research attention is directed at the economic returns to fertilizer, seeds, and insecticides. The analysis showed that marginal productivities of these specific inputs displayed considerably greater variation than did total operating expenses, and were strongly related to average input use levels. Large mechanized crop farms, for example, with investments of about 17 dollars per hectare in crop expenses showed a marginal value product of less than one. These farms had

only modest modern input use levels, yet appeared to be overutilizing variable inputs. On the other hand, various small farm groups had per hectare crop expense costs of from 2 to 6 dollars. Marginal productivities in these cases ranged from a low of 1.8 to a high of 4.4, indicating some room for additional profitable use of crop inputs.

In the above comparisons credit use per hectare for crop expenses was not only greater in absolute terms on the large mechanized farms, but also as a percentage of crop costs. This research suggests that large mechanized crop farms were employing greater quantities of crop inputs, using both more credit and owned liquid resources to pay for these inputs, and had equated costs and returns at the margin. It also strongly suggested that available resources for the purchase of modern inputs were lacking on small farms. Rask also concluded that the above mentioned mechanized crop farms were equating costs and returns at very low output levels. Average per acre yields of 11 bushels for wheat and soybeans, and 17 bushels for corn were reported. These yield levels were only one-third or less of those experienced by modern agriculture in other regions of the world. Price levels of corn and soybeans were somewhat under U.S. prices, wheat was substantially higher.

Knight reporting on production function analysis on farmer data as well as experimental yield responses concluded that substantial nitrogen use on wheat and rice in Rio Grande do Sul was not very profitable [44]. These results were similar to those reported in other parts of the world, where declining yields from traditional varieties resulted when more than 40-50 kilograms of nitrogen per hectare were used. This was cited as evidence that plant breeders have not enjoyed much success up to that time in creating wheat and rice varieties capable of using nitrogen efficiently in Brazil.

Knight also found that fertilizer responses for corn were found to be substantially better than for wheat and rice, yet farm use of fertilizer on corn was lower than for wheat and rice. Since corn is principally a small farm crop, it was suggested that credit constraints may have inhibited the use of fertilizer on corn.

A study by Nelson focused specifically on fertilizer response on several crops in the Ribeirão Preto area of São Paulo [52]. Cross sectional farm level data was obtained from 174 specialized crop farms for the 1969-70 crop year. Production functions were fitted for corn, cotton, rice and soybeans. Almost all farmers in the sample were fertilizer users, and credit and marketing facilities were not considered as limiting factors. One might assume that optimal use of fertilizer had occurred on farms in the region. The analysis confirmed this assumption, as additional fertilizer use was not profitable.

Nitrogen application, however, was low in absolute amounts and also low relative to recommended levels. It was noted, for example, that levels of nitrogen use on corn were only ten percent of those used in corn areas of the United States. Despite this fact, marginal productivities for fertilizer were insignificant. This suggested that even these low levels of nitrogen use additional fertilizer application was not profitable. Yield levels on corn of about 40 bushels per acre and soybeans of 23 bushels per acre were substantially better than yields noted in Rio Grande do Sul. They still fell short of expected yield levels under optimum fertility. The prices of about one dollar per bushel for corn and three dollars per bushel for soybeans were in line with world prices. Fertilizer prices were slightly higher

than U.S. prices, (5-10 percent) but with subsidized interest rates in credit, were roughly equivalent in total farmer cost. Thus price considerations did not appear to be responsible for low fertilizer use levels.

Several other studies have reported similar findings to those noted above. Frederick budgeted fertilizer use on several crops in the northeast of Brazil and concluded it was a poor investment except on sugar cane [36]. Rask, Meyer and Peres reported that little evidence existed of potential yield response from fertilizer in the northeast, based on interviews with soil and plant scientists [64]. Most of the research discussed above focused on the productivity aspect of resource use.

Several studies have attempted to assess directly the role of credit in stimulating the economic utilization of resources. This section reports on these studies.

Araujo reporting on a study of 132 farms in 1965 in the state of São Paulo, concluded that a higher economic performance in the farm business was positively associated with credit [10]. Further, credit users made greater use of improved technology and were generally more efficient in the use of resources. In attempting to measure factors that affected the demand for credit, Araujo concluded that the cost of credit had no appreciable effect on farmer demand. Level of new investments, debt load, and education were all positively related to demand, while volume of internal funds and indebtedness ratio were inversely related to credit demand. The author cautioned that supply restrictions may have affected somewhat the findings of his study. That is, full credit demand may not have been exercised and thus some of the observed behavior may have resulted from supply allocation policies

Rao expanded his productivity analysis to test two additional hypotheses relative to credit use [59]: (1) that credit is not used for non-productive purposes and (2) that investments on farms are associated with credit use. His analysis demonstrated that there was no significant correlation between credit use and consumption expenditures. He also found that asset purchases were not related to credit use. Operating expenses were the most important variable explaining credit use.

In summary, the response to various modern inputs, and especially fertilizer is not presently encouraging on small as well as large farm units in Brazil. Optimal input levels are reached at relatively low yields. On many large farms ready access to credit has financed the purchase of sufficient inputs to exhaust present productive use. Further economic stimulation of purchased inputs through additional subsidized credit could only lead to misallocation of resources on these farms. In specific instances, evidence has been presented to demonstrate somewhat less-than-optimal use of variable resources on small farms. Partial evidence has suggested that credit constraints may play a part in explaining this underutilization of resources. Some redistribution of credit to small farmers may thus result in improvements in resource use, output and income. However, since almost all studies have indicated low profile production functions, this can only be a temporary policy. If substantial improvements in productivity are to be possible, serious efforts must be devoted to the development of new technologies, especially in the area of fertilizer responsive varieties. Only after these new technologies are

available can new infusions of credit play a significant role in lubricating the use of substantial additional productive resources in Brazilian agriculture.

Credit Supply

To this point we have mainly focused on the economics of credit use at the farm-firm level. A look at credit supply considerations requires shifting the analysis to different decision making units. Overall credit supply in Brazil is largely determined by the National Monetary Council and policies of individual banks. As pointed out earlier, formal credit supplies have been sharply expanded during the past 6-8 years. Data cited previously on aggregate as well as farm level credit-to-output ratios in agriculture suggest that, currently, overall credit supply may not be a pressing problem in Brazil [1, 3]. These ratios compare favorably with those found in countries where the supply of institutional credit is thought to be adequate at realistic interest rates. Under existing policies, it is doubtful if Brazil can reach a large group of new small farmer borrower even with additional increases in credit supply. Our major concern in the remainder of this section, therefore, is not with how decisions were made to increase overall supply. Rather, we focus on the question of how the banking system makes agricultural credit allocation decisions, that is, how does a bank decide which individuals will or will not receive credit? We feel that too little attention has been given to how different policies affect the credit allocation incentives of agencies handling agricultural credit.

As was mentioned before, several national monetary policies affect the way banks allocate credit to agriculture. The first is through interest rate policies. As was pointed out earlier, loans to agriculture may carry maximum interest rates of only 75 percent of those charged on regular commercial non-agricultural loans. Further, small rural loans are assigned still lower interest rates. To overcome these disincentives to loan to agriculture, various types of portfolio quotas and special funds are used to encourage banks to loan to farmers.

A number of people in Brazil have argued in favor of low interest rates on loans to agriculture, and especially to small farmers on the grounds that cheap credit is required to elicit loan demand. Low interest rates have often been justified because policy makers feel farmers have high elasticities of credit demand with respect to interest rates. Parenthetically, recent research by White casts serious doubt on this basic point [87]. Advocates of inexpensive credit regularly ignore the fact that interest rate policies are a two-edged tool. Low rates may encourage credit use, but they also seriously affect a bank's financial interests to make loans which carry concessional terms. With low administered interest rates on agricultural credit one should not be surprised that governments must force banks to lend to agriculture. With even lower interest rates applied to small loans, it should also not be surprising that banks which are forced to lend to agriculture attempt to minimize costs and lending risks, and maximize interest payments by concentrating their funds in large, well secured loans. At the close-to-zero or negative real rates of interest charged on agricultural credit in Brazil, banks face a virtually unlimited credit demand from people who have excellent credit ratings [13]. Government attempts to redirect credit

flows through special legislation have been only partially successful.

In a real sense current interest rate policies in Brazil seriously blunt the incentives of banks to lend to small farmers. They also encourage rural individuals who are well connected to the banking system to overuse credit, and seriously distorts capital-labor price ratios against socially satisfactory employment solutions.

The recent Brazilian experience strongly suggests that major policy adjustments are necessary if more credit is to go to small farmers through normal banking channels [3]. Currently banks do not have any economic incentives to make such loans. Small loans are only made by overriding the internal financial signals in the banks.

Such incentives for banks could be provided through any one of a number of policy alternatives. As a minimum, credit charges on all sizes of agricultural loans should be equalized in Brazil; banks should not be penalized for making small loans. It appears politically impossible to charge higher rates of interest on small loans than large loans. But higher real interest charges across-the-board for agricultural credit might achieve many of the same purposes. Increased credit charges on large borrowers may force them to reduce their borrowing substantially and expand the funds available for small loans. Banks could also be encouraged to make small loans by a differential discount rate policy through the Central Bank; that is, a larger discount spread might be allowed on small loans than on large loans.

Efforts to lower the administrative costs of small loans may also provide added incentive. In spite of simplified procedures which exist for small loans, in practice many banks in Brazil require almost the same amount of paperwork on a one hundred dollar loan as on a ten thousand dollar loan. Few bank managers, nevertheless, express serious concern about the willingness of small borrowers to repay loans. Some in fact feel that small borrowers are more likely to repay than large borrowers. New administrative procedures which require less documentation on small loans along with adoption of modern data processing procedure might bear fruit. Loans of up to a certain limit might be made almost automatically to borrowers with good credit ratings with the bank, to applicants for loans recommended by extension agents, and to people who have several letters of recommendation from borrowers in good standing with the bank. Loosening of lending procedures would likely result in some increase in default rates, but this loss ought to be covered by lower administrative costs. If it were found that default risks were a serious block to banks lending to small farms, a national default insurance program might eliminate much of this risk.

Improving the incentive system for banks to loan to small borrowers will not resolve all small farmer credit problems. It should, however, clear away a good bit of the fog which currently surrounds this topic. When banks begin to channel credit vigorously to small farmers at realistic prices, it should be possible to identify more clearly demand constraints caused by lack of profitable investment alternatives, shortage of appropriate technology, adverse tenure systems, effect of unstable marketing conditions, and need for supervision or special lending arrangements. The importance of these issues cannot be clearly determined until the distribution of credit is rationalized and current credit policies substantially adjusted.

The lack of incentives for banks to loan to small farmers appears to be only one manifestation of a more extensive problem. That is, how can appropriate internal incentives be introduced into rural service institutions so that more of their activities are directed toward the rural poor? This includes extension services, agricultural research programs, general and vocational education activities, and cooperative and community development programs. If the Brazilian credit case is at all representative, policy makers appear to have paid too little attention to this question. The implications of neglecting the small farmer sector can be significant in terms of employment generation, income distribution, social welfare, and long-term political stability.

IX. Conclusions and Policy Recommendations

Although far from conclusive, data presented in the preceding discussion suggests that relatively little of the recent large increase in Brazil's agricultural credit has filtered down to small farmers. The reasons why so little credit spread has taken place are not entirely clear. We posit, however, that in the short run a significant amount of credit might be productively absorbed by small-to-medium sized farmers if banks could be induced to aggressively lend to small borrowers. Policy changes which provide banks with more financial incentives to loan to small farmers appear to be well within the realm of the possible. Appropriate adjustments in interest rates, streamlining small loan administration, and perhaps default insurance appear to be key issues in creating new incentives.

Rask has recently argued that Brazil may also have some additional short run opportunities to move more credit into small farmers' hands by reallocating credit regionally [62]. That is by inducing those banks which service relatively homogeneous small farm areas (unimodal) as well as small-farm-large-farm areas (bimodal) to shift more funds into unimodal areas. This assumes that small farmers get better treatment from those agencies of banks which largely service small farm areas. The lack of large farmers in the area makes it difficult for agencies of these banks to divert funds away from small farmers.

Basically over the longer run, substantial improvements are needed in Brazilian small farmer production possibilities. The economic returns to fertilizer use and the use of other modern inputs must be sharply increased. It seems that Brazil has relatively little further latitude to alter price relationships to provide such input-use incentives because of the costs involved. The social costs of increasing relative product prices and/or further reducing credit prices or input prices appear to be prohibitive. We argue that even with appropriate banking policies, Brazil must make some major breakthroughs in yield increasing technologies before large doses of credit will move into the small farm sector, or before present credit users can productively increase credit use. Small farmer interests in borrowing, their ability to repay, and their concern with repaying to maintain a valuable credit rating largely depend on the economic returns which credit gives in the production process. In too many cases small farmers in Brazil have limited economic incentives to use credit in spite of low interest rates.

Brazil also needs to take a more balanced view of the development of

its rural capital markets. This includes several different dimensions. For example, immediate attention might be placed on mobilizing more voluntary financial rural savings to further fuel the growing rural credit system. To this point almost no attention has been given to making the rural capital market more self financing in Brazil. Almost no reasonably attractive financial channels for rural savings are available in Brazil. A number of farmers are experiencing rapid increases in income especially in Southern Brazil. It is highly likely that a significant portion of this increased savings capacity could be mobilized if attractive interest incentives were available. An expansion of local savings could help respond to the criticisms that present savings policies encourage a concentration of capital in large urban centers. It will be difficult, however, to offer attractive interest rates on savings until interest rates on credit are raised.

Policy makers in Brazil also need to be very sensitive to the inter-relationship between formal and informal credit systems. Informal credit systems have often been criticized as being expensive and highly discriminatory. However, non-institutional credit systems can provide a valuable economic service in a rapidly developing country where credit needs quickly rise in response to new economic opportunities. Data previously cited in this paper suggests that abundant, very cheap formal credit in Brazil may have stunted and even rolled back the growth of informal rural credit. A balanced growth of both informal and formal credit would be more desirable.

Finally, policy makers in Brazil as well as other developing countries ought to be very alert to the possibilities of reorienting overall credit-savings policies so that small farmer development objectives are more adequately met. A larger and more rapid impact on small farmer credit problems may be realized by getting the entire existing credit system more favorably oriented toward small farmer problems than by the slower and more costly process of setting up special small farmer credit agencies and programs.

BIBLIOGRAPHY

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Bibliography *

1. Adams, Dale W , "Agricultural Credit in Latin America: A Critical Review of External Funding Policy," American Journal of Agricultural Economics, Vol. 53, No. 2 (May, 1971), pp. 163-172.
2. Adams, Dale W , "What Can Underdeveloped Countries Expect from Foreign Aid to Agriculture: Case Study: Brazil - 1950-1970," Inter-American Economic Affairs, Vol. 25, No. 1 (Summer, 1971), pp. 47-63.
3. Adams, Dale W , Harlan Davis, and Lee Bettis, "Is Inexpensive Credit a Bargain for Small Farmers? The Recent Brazil Experience," Inter-American Economic Affairs, Vol. 26, No. 1 (Summer, 1972), pp. 47-58.
4. Adams, Dale W , William Simpson, and Joseph Tommy, "Capital Formation on Small-to-Medium Sized Farms in Southern Brazil, 1965 to 1969," unpublished Research Note No. 8, Department of Agricultural Economics and Rural Sociology, The Ohio State University, June 28, 1971.
5. Adams, Dale W , and Joseph Tommy, "Capital Formation on Small-to-Medium Sized Farms in Southern Brazil, 1965 to 1969," unpublished Research Note No. 5, Department of Agricultural Economics and Rural Sociology, The Ohio State University, October, 1971.
6. Adams, Dale W , and Joseph Tommy, "Changes in Small Farmer Credit Use in Southern Brazil, 1965-1969," unpublished Occasional Paper No. 61, Department of Agricultural Economics and Rural Sociology, The Ohio State University, February, 1972.
7. Alencar, Geraldo de, "Efeitos da Inflação no Crédito, nos Custos e nos Preços dos Produtos Agrícolas," unpublished Master's thesis, Instituto de Economia Rural, Universidade Rural do Estado de Minas Gerais, 1966.
8. Alves, E. R. de A., "An Economic Evaluation of an Extension Program, Minas Gerais, Brazil," unpublished Master's thesis, Department of Agricultural Economics, Purdue University, 1968.
9. Anjos, Natanael N. dos, "Análise Comparativa de Resultados Econômicos entre Cooperados e Não-Cooperados," Departamento de Ciências Sociais Rurais, Escola Superior de Agricultura "Luiz de Queiroz," São Paulo, 1969.
10. Araújo, Paulo F. Cidade de, "An Economic Study of Factors Affecting the Demand for Agricultural Credit at the Farm Level," unpublished Master's thesis, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1967.

11. Araújo, Paulo F. Cidade de, "Aspectos da Utilização e Eficiência do Crédito e de Alguns Fatores de Produção na Agricultura - Itapetininga - Guareí, Estado de São Paulo," unpublished doctoral dissertation, Escola Superior de Agricultura "Luiz de Queiroz," São Paulo, 1969.
12. Araújo, Paulo F. Cidade de, "Demanda de Crédito Rural em Itapetininga - Guareí, Estado de São Paulo," Anais da VII Reunião da SOBER, (Julho, 1971), pp. 50-64.
13. Araújo, Paulo F. Cidade de, "Sugestões para Pesquisa em Crédito Rural," Report No. 6, Departamento de Ciências Sociais Aplicadas, Série Estudos Escola Superior de Agricultura "Luiz de Queiroz," São Paulo, (1970).
14. Baer, Werner, Industrialization and Economic Development in Brazil, (Homewood: Irwin, 1965).
15. Banco do Brasil, Atividade Rural Special report of the Departamento Geral de Processamento de Dados, Rio de Janeiro, no date.
16. Banco do Brasil, Boletim (Quarterly report) Rio de Janeiro: Editora Gráfica Barbero.
17. Banco do Brasil, Relatório (Annual) Rio de Janeiro: Superintendência da Moeda e do Crédito, published yearly.
18. Banco Central do Brasil, Crédito Rural, Dados Estatísticos, (Annual) report of Gerência da Coordenação do Crédito Rural e Industrial (GECRI), Rio de Janeiro: Serviço de Impressão.
19. Banco Central do Brasil, Estudo de Crédito Agrícola no Brasil: Relatório da Pesquisa Institucional, Rio de Janeiro: Banco Central do Brasil, 1969.
20. Banco Central do Brasil, Relatório, (Annual report), Brasília: Editora Gráfica Alvorada Ltda.
21. Banco do Nordeste do Brasil, Relatório, (Annual report), Fortaleza: Banco do Nordeste do Brasil (BNB).
22. Banco do Nordeste do Brasil, Relatório, DERUR, (Annual report of the Departamento de Crédito Rural (DERUR) Fortaleza: Banco do Nordeste do Brasil (BNB).
23. Banco Interamericano de Desarrollo (BID), Evaluación de Programas Globales de Crédito Agrícola en Seis Países Latinoamericanos, (Washington, D.C.: BID, 1971).
24. Bartholomeu, Luiz, O Crédito Agrícola no Brasil, (Rio de Janeiro: Imprensa Nacional, 1923).
25. Carvalho, Horácio M. de, and Ubaldo P. Dantes, "Nível de Vida dos Trabalhadores Rurais do Centro de Pesquisas do Cacau, Bahia, 1965," unpublished study, Centro de Estudos Regionais do Centro de Pesquisas do Cacau, Salvador, Bahia, no date, but circa 1967.

26. Castro, Miguel A., Técnicas para Reajustar os Programas de Crédito Agrícola, Fortaleza: Departamento de Crédito Rural (DERUR), Banco do Nordeste, do Brasil, 1967.
27. Comité Interamericano de Desarrollo Agrícola (CIDA), "Estudo de Crédito Agrícola no Brasil," unpublished preliminary report prepared by CIDA, Washington, D.C., February, 1969.
28. Costa, Paulo de T.L. da, O Uso de Funções de Produção na Análise e Formulação de Critérios para a Orientação do Crédito Rural, (Fortaleza: Departamento de Crédito Rural (DERUR), Banco do Nordeste, do Brasil, 1966.
29. Daniel, Luther Brack, "The Rural Credit Situation in the Northeast," unpublished report prepared for USAID/Brazil, December, 1970.
30. Denney, E, Wayne, "An Analysis of Income, Consumption, and Savings Potential at the Farm Level in Southern Brazil," unpublished Master's thesis, Department of Agricultural Economics and Rural Sociology, Ohio State University, 1970.
31. Early, John O., " An Economic Analysis of Agri-Business Credit Sources and Uses in the Itapetinga and São José do Rio Preto Areas, São Paulo, Brazil," unpublished Ph.D. dissertation, The Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1971.
32. Engler, Joaquim J. de C., I.J. Singh, "Production Response to Technological and Price Changes: A Study of Wheat and Cattle Farming in Southern Brazil," Occasional Paper No. 33, Department of Agricultural Economics and Rural Sociology, The Ohio State University, June, 1971.
33. Erven, Bernard Lee, "An Economic Analysis of Agricultural Credit Use and Policy Problems, Rio Grande do Sul, Brazil," unpublished Ph.D. dissertation, The University of Wisconsin, 1967.
34. Erven, Bernard Lee, and Norman Rask, "Credit Infusion as a Small Farmer Development Strategy -- The Ibirubá Pilot Project in Southern Brazil," unpublished Occasional Paper No. 48, Department of Agricultural Economics and Rural Sociology, The Ohio State University, December, 1971.
35. Escritório de Pesquisa Econômica Aplicada (EPEA), Crédito Agrícola no Brasil, (Rio de Janeiro: EPEA, 1966).
36. Frederick, Kenneth D., "Agricultural Development in The Brazilian North-east: Technological Alternatives and Probable Development Patterns," unpublished report prepared for the Agency for International Development Brazilian Mission, December, 1970.
37. Fundação Getulio Vargas, IBRE, "O Banco Central e o Crédito Agrícola," in Conjuntura Econômica, Vol. XXI, No. 10, October, 1967, pp. 9-11.
38. Furtado, Celso, Análise do "Modêlo" Brasileiro, (Rio de Janeiro: Editora Civilização Brasileira S.A., 1972). 261

39. Furtado, Celso, The Economic Growth of Brazil, (Berkeley and Los Angeles: University of California Press, 1968).
40. Hermann, Louis F., Changes in Agricultural Production in Brazil, 1947-1965, Foreign Agricultural Economic Report No. 79, Economic Research Service, U.S. Department of Agriculture, Washington D.C., June, 1972.
41. Hirschman, Albert O., Journeys Toward Progress: Studies of Economic Policy - Making in Latin America, (New York: The Twentieth Century Fund, 1963).
42. Instituto Brasileiro de Geografia e Estatística (IBGE), Anuario Estatístico do Brasil, (annual reports), Rio de Janeiro: IBGE.
43. Inter-American Development Bank (IDB), "Evaluation of a Supervised Rural Credit Program in Brazil," unpublished report prepared by IDB dated 1971.
44. Knight, Peter T., Brazilian Agricultural Technology and Trade; a Study of Five Commodities, (New York: Praeger Publishers, 1971).
45. Konzen, Otto Guilherme, "Avaliação do Projeto Pilôto de Crédito Rural," Anais da VI Reunião da SOBER, 1970, pp. 98-114.
46. Konzen, Otto Guilherme, "Influência Econômica do Projeto Pilôto de Crédito Rural sobre as Empresas Agrícolas de Ibirubá, Rio Grande do Sul," unpublished Master's thesis, Universidade Federal do Rio Grande do Sul, 1969.
47. Lessa, Carlos Alberto, "Estudo da Estrutura do Capital Agrícola do Cerrado Mineiro para sua Dinamização através do Crédito Agrícola," unpublished Master's thesis, Universidade Rural do Estado de Minas Gerais, 1969.
48. Martin, Larry J., "Return to Capital Inputs on Crop Farms in Southern Brazil," unpublished Master's thesis, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1968.
49. Mosher, A.T., Technical Cooperation in Latin-American Agriculture, (Chicago, University of Chicago Press, 1957).
50. Mosher, A.T., Technical Cooperation in Latin America: Case Study of the Agricultural Program of ACAR in Brazil, (Washington D.C.: National Planning Association, 1955).
51. Nehman, Gerald, "Agricultural Credit Use on Low-Income Farms in A Depressed Rural Community of São Paulo, Brazil," unpublished Research Note No. 12, Department of Agricultural Economics and Rural Sociology, The Ohio State University, June, 1972.
52. Nelson, William Charles, "An Economic Analysis of Fertilizer Utilization in Brazil," unpublished Ph.D. dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1972.

53. Nicholls, William H. and Ruy Miller Paiva, "Ninety-nine Fazendas: The Structure and Productivity of Brazilian Agriculture 1963," Volume I-V, Preliminary editions, Graduate Center for Latin American Studies, Vanderbilt University, Various years 1966-1970.
54. Patrick, George F., Desenvolvimento Agrícola do Nordeste. Relatório de Pesquisa No. 11 (Rio de Janeiro: Instituto de Planejamento Econômico e Social, Instituto de Pesquisas, 1972).
55. Peres, Fernando C., "Produtividade de Recursos com Vistas a um Programa de Crédito," unpublished Master's thesis, Instituto de Economia Rural, Universidade Rural do Estado de Minas Gerais, 1969.
56. Peres, Fernando C. and Dale Adams, "Resultados da Recente Política de Crédito Rural no Brasil," Report presented at the Seminário "A Influência da Política Agrícola na Formação de Capital," Brasília, EAPA/SUPLAN, Ministério da Agricultura, March, 1972.
57. Poli, João Batista E. H., "Descrição e Análise das Rendas em Relação ao uso de Empréstimos em Pequenas Propriedades Rurais; Lajeado - Rio Grande do Sul," unpublished Master's thesis, Universidade Federal do Rio Grande do Sul, 1967.
58. Quesada, Gustavo M., "Credit in Rural Brazil: A Comparison Between Farmers Holding Loans from ACAR, Banks, Private Sources, and those who are Non-Credit Holders," unpublished Working Paper No. 21, Department of Agricultural Economics, Michigan State University, East Lansing, 1969.
59. Rao, Bodepudi Prasada, "The Economics of Agricultural Credit Use in Southern Brazil," unpublished Ph.D. dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1970.
60. Rask, Norman, "Analysis of Capital Formation and Utilization in Less Developed Countries," Terminal Report for Research Project, unpublished Occasional Paper No. 4, Department of Agricultural Economics and Rural Sociology, The Ohio State University, December, 1969.
61. Rask, Norman, "An Analysis of Agricultural Development Problems at the Farm Level - Southern Brazil, Methodology and General Farm Description," unpublished Agricultural Finance Center Report No. 120, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1968.
62. Rask, Norman, "The Differential Impact of Growth Policy on the Small Farmer of Southern Brazil," unpublished paper presented at Purdue Workshop on Empirical Studies of Small Farm Agriculture in Developing Nations, Purdue University, West Lafayette, Indiana, November 13-15, 1972.
63. Rask, Norman, "The Impact of Selective Credit and Price Policies on the Use of New Inputs," Development Digest, Vol. IX, No. 2, April, 1971.

64. Rask, Norman, Richard L. Meyer and Fernando C. Peres, "Agricultural Credit and Production Subsidies as Policy Instruments For Developing Agriculture," unpublished Research Note No. 11, Department of Agricultural Economics and Rural Sociology, The Ohio State University, September 14, 1971.
65. Ribeiro, José Paulo, "Supervised Credit in Minas Gerais State, Brazil," unpublished paper presented at Latin American Seminar on Agricultural Credit and Cooperatives, Buenos Aires, Argentina, June 11-27, 1962.
66. Ribeiro, José P., and Clifton R. Wharton, Jr., "The ACAR Program in Minas Gerais, Brazil," in Subsistence Agriculture and Economic Development. Edited by Clifton R. Wharton, Jr., (Chicago: Aldine, 1969), pp. 424-438.
67. Rosenbaum, H. Jon and William G. Tyler (editors) Contemporary Brazil: Issues in Economic and Political Development, (New York, Praeger, 1972).
68. Schneider, Ivo Alberto, Comunicação e Uso de Crédito Rural - Ibirubá, Rio Grande do Sul, Brasil, unpublished Master's thesis, Universidade Federal do Rio Grande do Sul, 1967.
69. Schuh, G. Edward, Research on Agricultural Development in Brazil, (New York: The Agricultural Development Council, Inc., 1970).
70. Schuh, G. Edward, The Agricultural Development of Brazil. (New York: Praeger Publishers, 1970).
71. Secretaria de Estado da Agricultura de Minas Gerais, Departamento de Estudos Rurais, O Crédito Rural E os Fatores que Afetem e Limitam o seu Uso., unpublished report No. 9, Departamento de Estudos Rurais, 1971.
72. Slater, Charles, et. al., Market Processes in the Recife Area of Northeast Brazil, Research Report No. 2, Latin American Studies Center, East Lansing: Michigan State University, 1969.
73. Smith, Gordon W., "Brazilian Agricultural Policy, 1950-1967," in The Economy of Brazil, edited by Howard Ellis, (Los Angeles and Berkeley: University of California Press, 1969), 213-262.
74. Secretaria da Agricultura, Instituto de Economia Agrícola. Desevolvimento da Agricultura Paulista. (São Paulo: Instituto de Economia Agrícola, 1972.)
75. Soares, João B. de L., "O Crédito Rural e a Estrutura do Capital nas Empresas Agrícolas nos Municípios de Montes Claros e Almenara, Minas Gerais, 1965/1966," unpublished Master's thesis, Instituto de Economia Rural, Universidade Rural do Estado de Minas Gerais, 1967.
76. Sorensen, Donald M., "Capital Productivity and Management Performance in Small Farm Agriculture in Southern Brazil," unpublished Ph.D. dissertation, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1968.

77. Sorensen, Donald M., Norman Rask, Francis E. Walker, "Capital Productivity on Specialized Swine Farms in Southern Brazil," unpublished ESM, No. 459, Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1971.
78. Sorensen, Donald, Norman Rask, Wilmar O. Dias, and Carlos J. Gevaerd, "An Evaluation of the CNCR Fertilizer Loan Program in Brazil," unpublished report, Agricultural Finance Center, Department of Agricultural Economics and Rural Sociology, The Ohio State University, December, 1967.
79. Souza, Eli de M., Bernard Erven, and Julio P. Gutierrez, Relatórios de Avaliação: Projeto Piloto de Crédito Rural. Porto Alegre: Instituto de Estudos e Pesquisas Econômicas, Universidade Federal do Rio Grande do Sul, 1968.
80. Souza, Eli de Moraes, Valter Jose Stulp, José Hilário Schuck, Repercussão Econômico - Social da Recuperação de Solos, Ibirubá - RS, (Porto Alegre: Universidade Federal do Rio Grande do Sul, 1971).
81. Tendler, Judith, "Agricultural Credit in Brazil," unpublished report prepared for USAID/Brazil, 1969.
82. Tendler, Judith, "Agricultural Credit in Brazil--Part II," unpublished report prepared for USAID/Brazil, 1970.
83. Tommy, Joseph Lissa, "Credit Use and Capital Formation on Small to Medium Sized Farms in Southern Brazil 1965-1969," unpublished Master's thesis, The Department of Agricultural Economics and Rural Sociology, The Ohio State University, 1971.
84. Wharton, C. R., Jr., "The Economic Impact of Technical Assistance: A Brazil Case Study," Journal of Farm Economics 42: 252-67, May, 1960.
85. Wharton, C. R., Jr., "A Case Study of the Economic Impact of technical Assistance," unpublished Ph.D. dissertation, Department of Economics, University of Chicago, 1958.
86. Wharton, C. R., Jr., "The ACAR Programme in Minas Gerais, Brazil," in Change in Agriculture. (London: Gerald Duckworth and Company, 1970) pp. 525-532.
87. White, T. Kelley, "Credit and Agricultural Economic Development--Some Observations On A Brazilian Case," unpublished paper, Department of Agricultural Economics, Purdue University, October, 1972.

APPENDIX

Exchange Rates

Table A-1
Exchange Rate of
Cruzeiros for Dollars a/
1960-1971

1960	.180
1961	.367
1962	.475
1963	.620
1964	1.850
1965	2.220
1966	2.220
1967	2.715
1968	3.830
1969	4.350
1970	4.950
1971	5.635

a/ Free rate of number of cruzeiros per U. S. dollar.

Source: International Monetary Fund, International
Financial Statistics, various issues.