



THE SAN JULIAN CONSOLIDATION PROJECT

WORKING PAPER No. 4

FINANCIAL SERVICES ANALYSIS

Prepared for the United States Agency

for International Development

La Paz, Bolivia

Under Contract No. AID/SOD/PDC-C-0219

by

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September 1979

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1. INTRODUCTION:

1.1 Terms of Reference:

This report is part of a study undertaken by a multi-disciplinary team to develop a project for the consolidation phase of the San Julian colonization area, which is located on the east side of the Rio Grande from Montero. The responsibility of the credit specialist was to design a credit system for agriculture and small business in the project area, and to determine the credit requirements based on the data provided by the farm development models and the rate of adoption. The economic feasibility of the agricultural credit program was also analyzed from the point of view of the lender.

1.2 Summary:

1.2.1 Objective:

The objective of the rural financial services element of the proposed project is to, {within the constraints of sound fiscal policy}, provide the capital and other financial services to the project community which is required for achievement of the rate of socio-economic development anticipated in the project design. Due to the

*added
by
Lloyd
Christman*

order of the requirements of the various financial services, the appropriate lending services are described here. The other services essential to a rural, developing community, including savings, investments, financial transfers and insurance, are deferred for development in the course of project implementation.

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Chapman
Expellier*

1.2.2 Clients and uses of credit:

The following types of loans are proposed:

- (a) short-term credit, generally required for the support of farm production inputs or to otherwise finance the borrower between harvests
- (b) medium to long term loans for farm capital investment, such as the purchase of livestock, machinery and land improvement
- (c) capital and operating loans to finance local agribusinesses which provide essential services to the project area settlers

1.2.3 Service delivery system:

The financial service delivery system requires the establishment of a savings and credit sub-agency in

San Julian, with enough decentralization for credit decisions, in order to provide a useful and timely service to the farmers and to minimize credit delinquency.

A roving credit system is recommended for maximizing effectiveness in reaching the farmers, reducing their non-financial costs of credit and improving compliance with the repayment schedule. All credit operations from filling out loan applications to repayments should be done at the community level.

The portfolio should be controlled with as few accounts as possible. Short-term credit for agriculture should be channeled through a line-of-credit and managed as one outstanding balance per client to reduce cost and to develop confidence on the part of the farmers regarding the availability of funds, provided that they comply with the credit terms.

Every new, long-term credit should be blended with the outstanding balance of the previous one to simplify procedures and minimize costs. The repayment schedule would be reviewed with every additional credit.

In the case of credit for rural small business, loans for capital equipment and working capital should be carried as a single account.

A credit manual should be drafted and adopted by the lending agency, establishing lending policy, eligibility for credit, credit terms, debt service requirements and account management procedures.

Loan application forms should be designed to first reveal the eligibility of the applicant. Then they should include questions, the answers to which weighted values can be assigned, the sum of which would be the basic reference point for deciding on the worthiness of the application. Such a scheme would reduce the time required to process an application and would contribute to consistency in decision-making.

The disbursements provided for each crop and for seasonal activities of permanent crops should be for 12 months, and those for long-term uses should have repayment periods of ~~five to~~ eight years. Loans for working capital for small businesses would have a maximum repayment period of 30 months, and for fixed assets up to seven years.

1.2.4 Charges:

Minimum agricultural and small business loans should be established. Loans below certain amounts are uneconomical because they produce very little income from interest charges. Group lending would be the way to overcome this constraint in loans for agriculture. A higher interest rate should be charged for small loan amounts so as to improve the contribution to fixed cost.

Interest rates of 19% for short-term loans and 15% for long-term loans were used in the economic feasibility analysis of agricultural credit. Under the assumptions made, these interest rates were adequate.

In addition to the interest rate, there should be a commission charge of between 1/2% and 1% on each disbursement, so that the lender would be reimbursed immediately for the variable cost of processing each application and disbursing the fund.

It should be reasonable to start the small business program with an interest rate of 19% for loans below \$b.30,000 and 15% for loans above that amount. Considering that the small-scale entrepreneurs are yet to emerge, it would be reasonable to start a small credit

program for them setting a low minimum loan amount of about \$b.3,000. Such a policy at the beginning would likely allow more small businesses to get started.

The minimum amount for short-term loans for agriculture should be about \$b.3,000. This is due to the fact that with an average outstanding balance of about \$b.,2,000 at 19% interest, the contribution to fixed costs would be approximately zero.

For long-term loans the minimum amount should be calculated according to the repayment period.

1.2.5 Credit requirement:

Based on the rate of adoption of the farm development models which were estimated in the economic analysis, the credit requirements would be \$b.93,000,000 in the first four years of the project. The fund requirements, net of repayments, would be \$b.66,353,000. The contribution to fixed costs, net of incremental costs, delinquency and interest, would be about ^{7.4%} 8.6% of the outstanding portfolio at the end of the fourth year.

The credit demand for small and medium size business was estimated to be \$b.56,675,000 during the first

four years. Credit for agricultural machinery and for two sawmills accounted for 51.9% and 45.6% of the total requirements. (The inclusion of sawmills as probable investments assures that a clarification and some modifications in the forestry policies will be made.)

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Dr. [unclear]
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1.2.6 Broadening the scope of financial services:

*added by
Dr. [unclear]
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Considering the almost complete absence of financial management capabilities among the settlers at the present, it is obviously necessary to restrict financial service to the provision of credit by outside institutions. However, strong emphasis should be placed on developing financial management capabilities among the settlers. It is recommended that they be assisted in developing their own multi-purpose cooperative as rapidly as they can. It should include a savings and credit activity which could in time manage all of the credit required by its members.

1.3 Principal References:

In addition to field observations and inquiries, the following papers were considered in preparing this report:

1.3.1 Observations of Rural Financial Markets in Three Bolivian Regions, by Jerry R. Ladman and Ronald L. Tinnermeier, La Paz, USAID, October 30, 1977. The analysis and conclusions of this research provided very valuable background information for this report.

1.3.2 "Estado de la Reorganización del Banco Agrícola de Bolivia y Capacidad para la Administración del Crédito al Pequeño Agricultor", by Pedro Negrón, *Servicio Técnico del Proyecto*, La Paz:USAID, August, 1979. It provides recommendations for improving the administration of credit to small farmers in the Banco Agrícola, as a component of a reorganization plan.

1.3.3 "Proyecto Integrado de Desarrollo Rural", Chimore-Chapare", "Convenio MACA-IICA No. 8/78, Cooperación Técnica del BID" ATC/TF (SP) - 1579-BD.

1.3.4 The scope and content of the present report are complementary to the ones mentioned above.

2. BASIC DATA ON SAN JULIAN COLONIZATION PROJECT:

At the present time there are approximately 1800 families settled in the San Julian North area of the proposed

project area. It is expected that this number will increase to approximately 3,150 within the next four years. Colonization of San Julian is said to have started in 1972.

Each family is in possession of 50 hectares of arable land, only about 6% of which is cultivated each year. There is practically no animal husbandry activities nor any income generating plantations of a permanent type. The agricultural practices are rudimentary. The San Julian project site is about 100 kilometers from Santa Cruz, which is an active industrial and commercial city. There are several marketing constraints for commercial agriculture. The main ones are the lack of a bridge across the Rio Grande, expensive transportation and lack of farm storing facilities. The San Julian project area is divided in nucleos of 40 families each. A group of nine nucleos forms what is called a NADEPA. All of the 50 hectare plots of each nucleo extend from a central community residential area.

Families who move to San Julian are given food for about nine months while they produce and harvest their first crop. They are provided with seed for planting the

initial crop. A four-months orientation course is also offered by the United Churches Committee through a formal agreement with the Instituto Nacional de Colonización.

The Banco Agrícola de Bolivia began a credit program in San Julian in the crop period, 1977-1978. From verbal information given by the administrator of the Montero agency of the Bank and the credit agent of the area, it can be supposed that for that crop, it provided 13 short-term production loans to groups for a total of \$US33,000. These loans benefited approximately 220 group members. At the end of the repayment period about 70% of the outstanding balance was overdue. According to the Bank agent, this was due to a severe drought in 1977-1978. The repayment of most of the overdue balance was restructured. At the present time the Bank credit agent thinks that about 10% of the outstanding balance is overdue.

For the crop season, 1978-1979, the Bank provided about 20 short-term loans to groups with a total of 175 members, for the total amount of approximately \$US30,000.

New loans can be approved only for those farmers who do not have overdue balances. The Bank provides only

short-term loans for cash crops as stipulated in the USAID loan agreement which is the source of funds.

According to the Bank's policy for the program, loans are available only to groups. Each member of a group must be a co-signer. According to the agency administrator, the purpose of the policy is to minimize cost. However, the Bank's agency keeps a record, outside the account books, of the outstanding balance of each member.

The Bank's loans cover only 80% of the standard budget established for each crop.

There is an example of a credit cooperative in the region. Cooperativa San José Obrero was organized around July 1976, with the assistance of the United Churches Committee. As of January 1979, the portfolio amounted to about \$US15,000, distributed among 178 of 330 members of the organization. The average loan per member has been around \$US100. Loans are approved by majority vote of the assembled organization. According to the information obtained, there were no overdue accounts as of December 1979.

3. CONSIDERATIONS FOR THE DESIGN OF A CREDIT SYSTEM FOR
SMALL FARMERS:

The purpose of this chapter is to establish a theoretical framework or a body of principles by which a reliable credit service can be designed.

For the purposes of this study, a credit system consists of its total components, including policy statement, organization, operational procedures, delivering system, loan service and repayment.

The objective here is a system to make credit marketable, cost-efficient and effectively controllable at an acceptable level of risk.

A credit system must be designed within the parameters of the credit objectives, volume, credit amount per borrower, beneficiary's activities, environment, and the level of development already achieved by the borrowers, and their activities. Although these are variable factors, they embrace certain basic concepts which are applicable to any credit program for small farmers.

Although an important tool for providing the funds that small farmers need to carry out their farm development and production plans, credit by itself does not generate increases in the income. It is the small farmer's goals, values and will, a well thought-out farm development plan, land security, appropriate technology, efficient marketing, and the effectiveness of the institutions promoting these conditions that really make a well designed credit system effective in increasing the small farmer's income. No matter how good and efficient the design of a credit system, it will be of little help without the other essential elements of a broader supporting system.

A credit system for small farmers must meet certain requirements from the point of view of the farmers as well as from that of the lender.

3.1 Important Characteristics of a Credit System for the Farmer:

It can be said that in order for a credit system to be viable for small farmers, it must have:

- (a) an efficient logistical system
- (b) adequate terms
- (c) good image
- (d) reasonable cost

3.1.1 Efficient logistical system:

- The system must be easily understandable and usable.

- It must be flexible enough so as to respond quickly to different farm situations and farmers' needs.

- It must be able to disburse funds when they are needed.

- It must avoid, as much as possible, paper work and time and transportation-consuming procedures.

3.1.2 Adequate terms:

- The credit budget and the repayment dates should be flexible to allow for considerations and solutions of unforeseen problems that may arise due to the nature of the business.

- The repayment schedule should be in line to the farmer's cash flow.

- The guarantees and collateral should be reasonable in value, and within the borrower's capabilities. The borrower should feel compelled to repay; however he should not feel that he will be left hopeless if he were not able to repay at due time.

3.1.3 Good image:

- The credit system must meet the farmer's needs in a way that it can be socially acceptable, depended on when needed, and appreciated.

- Given the rules of the game, the lender must gain the confidence of the farmer.

3.1.4 Reasonable cost:

- The interest rate charged on the outstanding balance and any commission charge on disbursements should be the only relevant costs incurred by the farmer for borrowing. Legal costs should be avoided or at least minimized to the extent possible. If appropriate, suggestions should be made for changes in certain laws and regulations which might be increasing cost. Alternative means for meeting the same objectives could be suggested in some cases.

3.2 Important Characteristics of a Credit System From the Viewpoint of the Lender:

From the point of view of the lender, the credit system for small farmers must have the following characteristics:

- a) adequate organization and support
- b) efficient, reliable personnel
- c) low cost and good financial health
- d) reasonable control

3.2.1 Adequate organization and support:

- There must be well-defined tasks and responsibilities for each position and each employee. The lines of authority should be well-defined, and there should be only one boss for each employee. There should be a strong commitment to the program from top down and vice-versa. To accomplish this, it is necessary that everybody complies with established policies and procedures. The need for making exceptions should seldom arise, and in such cases there should be a standard, known procedure for processing and implementing them. This procedure should operate from

field personnel upward and should include written justification with the signatures of at least three people in the line of responsibility. To have a procedure for exceptions is helpful for control and for keeping records. It may lead to detecting the need for desirable adjustments in certain norms.

- There should be an internal auditing unit headed preferably by a Certified Public Accountant. This unit should be independent of management. Among its auditing tasks, it should verify the compliance with policies and procedures at each level of the organization. The chief of the internal auditing unit should report to the Board of Directors any reluctance or lack of support of the organization implementing compliance with established norms.

- The organization should comply strictly with the quality of services and procedures that it has informed or agreed with the farmers that it would comply. If changes are necessary, they should be explained and justified to the farmers in advance. Otherwise, the lender would probably lose face as well as the good will of the farmers.

Once the draft of the system has been completed, it is worthwhile to discuss it with different groups of farmers. Orientation seminars should be carried out for community leaders before starting the program in a community. On the other hand, meetings should also be held with the farmers of the community to discuss the system, the services they would receive, and their rights and duties.

- The whole organizational structure of the lender should be reviewed when a small farmer credit system is considered to determine if and how the system can best fit in the present organization. It may be that minor adjustments in the system would be sufficient. On the other hand, major adjustments in the organization may be required. If this were the case a carefully thought-out plan should be designed for accomplishing the required adjustments.

- The organizational structure and the credit system itself should consider both the short run and the long run potential of each project area as well as the growth of the small farmer credit program throughout the country as a whole. Without increasing short run costs to

undesirable levels, the organizational structure and the credit system should be planned so that they would be able to support potential increases in volume with as a few adjustments as possible in organization and procedures. This would save cost in the future. It would avoid deep changes, redesigning, retraining, disturbing employees and human errors.

- Training of field personnel and staff should be given high priority. A new credit system for small farmers or for small business should not be started unless it is determined, through the technique of simulation, that everybody knows his job well and is able to perform it without committing serious errors. It should be remembered that to detect and to correct operating errors is more costly than training. On the other hand, if there were too many errors, the accounting record would not be up to date, and even worse, many people throughout the organization would spend their time searching for errors rather than doing the jobs they were hired to perform.

- There should be periodic meetings of field personnel with regional officers, and of senior executives

of these offices with top management. This is most important for maintaining coordination and for keeping the organization and systems sensitive to field realities and organizational needs.

3.2.2 Efficient and reliable personnel:

- Good management should encourage loyalty to the institution rather than to its members, so that all members of the organization will commit themselves faithfully to the goals of the organization.

Employees should be hired, rewarded and promoted strictly on the basis of their performance. Through training and meetings, they should come to realize the importance of the goals of the program and of their performance, participation and constructive criticism. This is most important for keeping the staff and employees highly motivated. The management style should encourage new ideas and suggestions.

- It is the people in the organization who will in the end make the program succeed or fail. For this reason, together with a reasonable personnel rewarding

policy, there should be strict rules for off-standard performance. Only persons with the highest integrity, good intentions and ethics should be allowed to work for the organization. This is the most basic and important commitment for a successful credit program.

Good human relations within the organization are important for promoting good performance, and they should be encouraged at all times.

3.2.3 Cost and financial health:

- To save cost, one must be very strict and careful in justifying every step of paper work, and time and transportation consuming procedures. The questions of what would happen, what is the probability that it could happen, what would be the loss or the problem if it should happen, in what other ways could it be prevented from happening, in what other ways could it be found out if it should happen, and in what cases could a given bit information be useful, or would it be just as useful, available and safe to look for it when the need arises -- should always be asked before establishing every work activity in the process.

- Collection activities should be constant and consistent to prevent defaults. Some people might have the tendency to spend their money for other purposes if they do not see, through the collection system, that it is more important to repay the loan. On the other hand, an effort should be made to get borrowers well acquainted with credit terms and repayment schedules and the importance of complying with them. There should be this educational component in the credit system. The lender should also be ready and willing to provide financial advice and to help the farmer, through contacts, to get the other services that he or his community needs.

- Group and community participation in credit decisions and repayments should be maximized to increase community involvement, and to improve the system.

- Informal and formal group lending should be encouraged to reduce cost. This minimizes the number of clients without reducing the number of beneficiaries of the program. There should be caution, however, and the lender should make sure that the group transactions are well managed and that group members really feel a commitment for compliance.

- All the possible ways of interinstitutional coordination should be explored to increase the probabilities of success of a development program and to reduce cost. Each program can be thought of as either an input or a support to all the other programs. There can be found ways within the objectives of each organization to plan their tasks together, not only to improving effectiveness through better coordination but also to reduce cost through better distribution of work load, sharing equipment and office space.

- Risk boundaries on defaults and on accumulated losses in the profit and loss statement should be established for the program. These boundaries should be taken as a commitment so that a given strategy should be followed to assure compliance to these limits. The implementation plan and the rate of growth of the program should be reviewed in terms of the results that are being observed. It is worthwhile to design an implementation plan which would concentrate in given areas and to start the program at a low volume relative to the funds which could be available. Another strategy for keeping the program within the risk boundaries would be

to operate with a portfolio mix of different degrees of risk. This means that different project areas, classified according to risk, should be chosen for implementing the program, rather than concentrating only in the highest or lowest risk areas. For judging the risk, it should also be taken into account that the percentage of defaults among clients will depend on the effectiveness of the other development support services.

- The cost policy of the credit system should be well thought through, taking into consideration the medium and long-term implications as the program grows. By cost policy, it is meant, in this case, to make a choice between a system with high investment and high fixed cost with relatively low variable cost and a system with high variable cost per loan with relatively low investment and fixed cost. Semi-variable cost is also implied when reference is made of variable cost. A third alternative would be a compromise between the two alternatives mentioned above; that is, to design a plan in which the organization would move gradually from one cost policy to the other. The criteria for choosing a given cost policy would be based

on the following factors: a) insuring a profitable, economic performance in the long run without incurring high decapitalization in the short run, b) the effect of each policy on the quality of service to the farmers, c) its contribution to the design of an effective and efficient system to control operations and to supply relevant information for analytical purposes, d) problems anticipated by a radical change in cost policy in the future. It can be said that in general, the higher the number of credit transactions, the more important it is to keep variable costs low, even at the expense of higher fixed costs. In some systems a policy of low variable cost is safer against the risk of inflation.

- It is very important to consider all the possible means of protection against the effects inflation. The higher the percentage of long-term loans in the portfolio, the greater the adverse effects of inflation on the financial health of the organization. The risk is even higher when the interest rates are relatively low and even worse when they are subsidized.

- It is worthwhile to consider, in colonization projects, the possibility of having in each community a mix of relatively efficient farmers with unskilled farmers. In this way the transfer of technology would be enhanced.

- It reduces costs to plan, up to the point that it is possible, the reception of loan applications from each community so that all of them can be processed at the same time and community cooperation would be more feasible. Loan applications as well as disbursements should be planned with the community.

- The cost of a credit system is a function of the number of loan applications and accounts in the portfolio. So it is worthwhile to think of a scheme by which the number of loan applications and accounts can be minimized without limiting the number of credit beneficiaries.

- Financial charges to borrowers: The credit transactions should generate to the lender an income large enough to cover costs at a reasonable portfolio level. Besides the operating expenses, the lender's costs also include the cost of money and a provision for bad debts.

In the medium term, as the volume increases, the lender should operate with a reasonable profit. To have a profitable, economical performance is consistent with development purposes, because it is the most certain way to insure continuous operation and growth. This is the only way by which it can be hoped that the program would be able to expand continuously and to be able to reach, in the long run, most of the small farmer sector.

- The lender should consider charging a commission on each disbursement in order to be immediately refunded for the average cost associated with processing loan applications and disbursements. This would significantly improve the profit and loss statement in the short-run. A commission of about 1% in each disbursement should be considered.

- For calculating the appropriate interest rate the average variable and semivariable cost per year of each credit transaction and account in the portfolio should be figured. This cost figure, divided by the average outstanding balance per account, would provide one of the components of the interest rate to be charged. The second component would be the cost of money, i.e. the interest rate paid by

the lender. The opportunity cost of money might come out unreasonable high for most of the activities that the program could possibly finance at the beginning. However, when the funds come from international development agencies, it could be considered that the opportunity cost is equal to the interest rate paid, due to the fact that the funds would not be available for any other purpose. The third component of the interest rate to be charged would be an estimate of a reasonable provision for the risk of losses through defaults. The fourth component would be what might be estimated to be a reasonable contribution to fixed cost for reaching the break-even point with a given portfolio volume.

3.2.4 Control:

~ There should be a relevant control of the portfolio. It should be designed with the objectives of, a) keeping up-dated information for effective and efficient collections, b) avoiding frauds and discovering human errors and c) producing information for analytical purposes.

- The supervision of the use of credit funds by the farmer should be aimed at verifying compliance with credit terms; however, care should be taken that farmer's feelings will not be hurt.

- An effective auditing system should be designed for implementation by the internal auditing unit to continuously check on loan operations and compliance with policies and procedures.

- There should be periodic orientation meetings with the community. Farmers should be informed about all of the aspects that should concern them and they should be encouraged to make suggestions for improving the system. It should be pointed out that the farmer's knowledge of the system is also a very important control tool.

4. COMPONENTS, TERMS AND DELIVERY SYSTEMS:

4.1 Assumptions:

The components that are suggested for the credit system are based on the following assumptions:

4.1.1 Flexible, technologically and economically feasible farm development models for gradual implementation in a reasonable period of time, according to each farmer's ability, would be available for assuring a continuous growth in farmers' income and standard of living. The models would be taken as guides and would be reviewed periodically. The lender would take into consideration changes in the variables and assumptions of the models.

4.1.2 The project area would be provided with a package of effective, integrated and coordinated services, including education, health, extension and social promotion, community integration and leadership development activities for enhancing community commitment, participation and contribution to its progress.

4.1.3 Inputs for farm activities would be easily accessible. Furthermore, farmers either would have access or would be required to build, with loan funds, the proper storage units for their products. This is very important as they move toward commercial agriculture. In the case of animal husbandry, the building of adequate infrastructure would also be done, for minimizing transportation costs.

4.1.4 The lender would offer loans only for those farm activities for which it has developed budgets and feasibility models. Furthermore, it would make sure that there exists for each activity the know-how to successfully implement it. This does not, however, imply a rigid system. There would be flexibility where necessary.

4.1.5 The lender would provide the farmers in the project area education and advice on the use of credit and the responsibilities of the borrowers, as well as information about the terms of delivery. Feedback suggestions from the farmers would be encouraged and given due consideration.

4.1.6 There would be a very strong management-level commitment within all the organizations that would participate in the task and support the program goals.

4.2 Recommendations for the Components and Terms of the Credit:

4.2.1 Credit beneficiaries:

All farmers who have been accepted as settlers in the San Julian project site and are living there and are

complying with the conditions established by the Instituto Nacional de Colonización would be eligible to participate in the credit program. Credit would be available to individual farmers, as well as to formal and informal groups who are well organized.

4.2.2 Types of credit:

Short Term: Repayment period up to 12 months. Farmers themselves would be given the opportunity to establish in the loan application the final date for repaying the loan. This would give them flexibility for marketing their products and could contribute to developing higher repayment commitment on their part.

Long Term: Repayment period more than 12 months and up to eight years.

4.2.3 Line of credit:

Clients who are approved for short term loans for the second year in a row would be authorized a line of credit for all their short term financing requirements. This line of credit would be established for a given period, which could be 5 years, and under conditions which would

give the lender the right to stop disbursements because of lack of compliance from the client, increase in risk or lack of funds. The amount of the line of credit would be established according to the client's plan for the next 5 years. The objectives of the line of credit would be to avoid the additional cost of having to approve loan applications for each season and of having to keep a different outstanding balance account for each activity and for each season.

4.2.4 Record of outstanding balance of long term loans:

With the purpose of minimizing costs and improving control, every time that a new long term loan would be authorized and disbursed, the previous outstanding balance would be consolidated with the new disbursements in a single account. The whole repayment schedule would be reviewed. The loan contract would include this consideration.

4.2.5 Purpose of loans:

To provide needed funds for viable production activities and investments with the following purposes:

4.2.5.1 Working Capital: According to farm development plans, production loans for cash crops, maintenance and harvesting of permanent crops in production. Minor repairs of equipment would be included.

4.2.5.2 Fixed Assets and/or farm Infrastructure: According to farm development plans for the implementation of permanent crops, animal husbandry, farm infrastructure and purchase of tools and equipment of general use and major repairs or reconditioning of equipment and machinery.

4.2.5.3 Others: In the long run, at the appropriate time, if funds were available, it could be considered to provide loans for home improvements and for para-professional and professional studies by young people from the nucleus. Certain types of personal loans could also be considered to save the farmer from having to go to private lenders who charge higher interest rates.

4.2.6 Minimum loan amount per client:

Loans below a certain amount, about \$b.3,000, to farmers who have never been approved and/or disbursed a loan would not be approved.

The minimum loan amount per client would be one that would provide at least \$b.200 of contribution to fixed cost per year. This limit would be established to avoid credit transactions which would cause losses. However, in order to make the credit program available to the "poorest of the poor", the lender would encourage the farmers with loan requirements below the minimum to make joint applications. In this way it would be possible for them to use credit and the lender would operate with a positive contribution to fixed cost. If the loan were approved, everyone in the group would have to be a co-signer.

This scheme would be expected to be acceptable by many small farmers in projects such as San Julian where the members of a nucleo live in a more or less concentrated area rather than dispersed in a wide area.

4.2.7 Maximum loan amount per client:

The maximum loan amount would be reviewed periodically and adjusted according to the budgets and stage in the process of implementation of the farm models. By maximum loan amount is meant the total amount of the borrower's outstanding balance in the portfolio plus that of any additional loan application that is being considered.

4.2 8 Guarantees

The borrower's integrity, pride, good will and know-how are the most relevant guarantees. Collateral on farm production would be established as an additional sense of commitment by the farmers. If there were high legal expenses involved for meeting this requirements, it might turn out to be inadvisable to incur farm production. If this were the case a thought should be given to suggesting a different legal procedure which could be more compatible with rural development. Nevertheless, it should be realized how difficult it could be on a large scale to make this type of collateral of small producers a good substitute for repayment. There would be problems of logistics and of the lender's image.

Collateral on the assets being financed would be required on loans for fixed assets. A mortgage on the plot would also be required if the law would allow the farmers to sell the plot.

Here again, it should be mentioned that every effort should be made to educate the farmers on the use of

credit and to strengthen their personal values and sense of commitment. This is worthwhile from the development point of view, as well as to the lender's financial health.

4.2.9 Interest rate and commission on disbursement:

Considerations for calculating the appropriate interest were given above (3.2.3). Both short term and long term loans would have one interest rate for small loans within a certain range and a lower interest rate for higher amounts.

A commission of 1% on each disbursement is recommended so as to improve the profit and loss statement of the lender in the short run by generating with each disbursement a revenue which would more or less compensate for the incremental cost of processing the loan application and disbursing the funds.

A penalty interest rate for late repayment would be established, and it should be high. If the laws would allow it, the penalty should be equivalent to about 50% of the regular interest rate. There would be waivers and/or restructuring of the repayment schedules when farmers are not able to repay on time due to causes that are not within their control.

4.2.10 Loan default and restructuring of repayment schedule:

The loan repayment schedule of short and long term loans would be restructured without charging interest penalties when clients of a given activity in a given zone are unable to comply with repayments due to generally unfavorable agricultural conditions. Based on good judgement and a review of future risks, these clients could continue to receive additional loans to support their activities. A record of amounts restructured to each client would be kept. This is particularly important for analysis of the portfolio and for evaluating the risk situation of the lender.

Penalty interest would be charged to clients who incur loan defaults which do not deserve restructuring. The cooperation of the community would be especially important in requesting repayment. There would not be any additional disbursements to debtors of this category.

4.2.11 Incentives and rewards to organized communities:
with outstanding repayment records:

At the proper time, in consultation with the social promoters, it should be considered appropriate to introduce

some kind of recognition to communities or nucleos with outstanding repayment records. This scheme, if introduced properly, would probable increase the group commitment and loyalty to the credit program, and would develop a group need for compliance.

4.3 Delivery System:

4.3.1 Loan applications:

The loan application form would contain questions, the answers to which would determine the eligibility of the applicant and his proposition for credit consideration.

The questions of the eligibility type could be such as these:

- Is there any litigation regarding the plot you are planning to plant?

Yes: _____ No: _____

- Do you also plant on another farm in another region?

Yes: _____ No: _____

- Who is going to implement your farm plan this year?

Your father: _____ Brother: _____ Yourself: _____

Friend: _____ Other: _____ (give name)

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- Which months of the year do you live at your plot in San Julian?

January ___; F ___; M ___; A ___; M ___; J ___; J ___; A ___; S ___; C ___; N ___; D ___

- Confidential opinion of the community credit committee:

Excellent: ___ Good: ___ Bad: ___

The application form would also contain questions whose answers could be given weighted numerical values such as the following:

- How long have you lived in the community? More than 5 years ___ More than 3 year ___ Less than 1 year ___

- What yield per hectare did you get last year? More than 100 ___, Between 50 and 100 ___, Between 25 and 50 ___

- How much income did you get from your farm activities last year? ___

- Do you own oxen? Yes ___ No ___

- Do you use a tractor? Yes ___ No. ___

- Do you own it ___ Do you rent it ___

The loan application would also contain a page for the farm plan and the budget for the activity. This part of the application would be completed by the farmer with the help of the extension agent. Both would agree on the data.

The system of assigning weights or numerical values to certain answers would be developed so that there would be a weighing of risk in the decision. This scheme facilitates consistency and accuracy. The weights assigned to each answer could be changed over time according to experience gained.

The loan application form for medium and long term loans for permanent crops and investments in fixed assets would also include the specific information relevant to each activity that the lender finances in the project area. The feasibility of each loan application of this type should almost be determined by reference to the model.

Applications by groups for loans to purchase equipment for sharing, such as tractors, could be analyzed in much the same fashion as indicated above. The idea is to have a kind of a routine standard for determining the feasibility of each loan application, so that the staff in

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the project area could analyze it in very short order.

Any idea or any loan application for anything should be received, even though the specific activity might not qualify under the lender's present policies. These ideas should be discussed with the applicant and passed on to higher authorities for deciding whether they merit further study.

4.3.2 Loan authorization:

4.3.2.1 Short term loans: The authorization levels would be such that at least 99% of the applications would be approved in the sub-agency which services the project area. In the case of San Julian a limit of between US\$3,000 and US\$4,000 would probably be appropriate.

The above statement makes it advisable for the lending organization to choose, for each project area, an agency head and a sub-agency credit agent who have categories in the personnel administration system that is in keeping with the forecast volume of credit. In this way employees with higher categories will be assigned to agencies and subagencies where there is a stronger demand for relatively higher loan amounts.

Loan applications which are not sanctioned by the community credit committee would not be approved. However, the credit agent would verify that the committee's opinion is based on good judgement and is well-intended.

At his own discretion the credit agent would discuss certain loan applications with persons providing other services in the area.

Loans above a certain limit would be sent to the next higher ranking office in the organization for consideration.

4.3.2.2 Long term loans: Within certain limits long term loans would be approved by a credit committee of the lender at the agency level. The committee would include the agency manager, the credit officer, a member of the organization which provides extension services, and a member of the one that provides social promotion services. The autonomous limit of the agency could be between US\$7,000 and US\$10,000. This scheme would increase coordination and would help to minimize risk.

4.3.3 Logistics for filling loan applications and for disbursements:

Depending on the degree of community organization and commitment and the cooperation that each nucleo is able and willing to provide to the credit program, a credit officer might be able to effectively service from as a few as 20 communities to as many as probable sixty. At the present in the San Julian project, a credit agent could probably service well only between 20 to 30 nucleos.

The short and medium term objectives for community cooperation with the credit program from the viewpoint of the lender should be:

- To give opinion regarding the credit risk of each applicant.
- To provide feedback from the community members.
- To coordinate all the meetings of members.
- To help to answer questions of members.
- To hand out the funds of loans being disbursed.
- To help develop a sense of compliance to the terms of the loans.
- To collect repayments.

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The procedure would be put in practice as the community responds to the above objectives. In the medium term there would be greater time demand on the part of the lender. This procedure should be adjusted and improved as more experience is gained in the implementation phase.

The credit agent would visit the communities well before each planting season. He would inform the community organization of the dates he would be present to receive loan applications from the farmers. In the cases of necessity he would fill the applications himself with the data given by the farmer. Before submitting the applications to the credit agent the farmer would have sought the assistance of the extension agent in preparing a farm plan and budget, which would be a part of the application.

The credit agent would consult the community credit committee in arriving at a risk classification of each applicant for short and long term loans.

The credit agent would inform each applicant through the community credit committee of the decision on his application.

Each farmer whose loan was approved would sign a form statement authorizes the lender to hand out the credit funds (cash and/or kind) to a given member of the community credit committee. A lawyer should be helpful in writing the printed text of the form.

On a given date the credit agent, with one or two other employees from the lender's office, would meet with the community organization to disburse the loans in cash and/or kind and to get a receipt signed on behalf of each client. The community credit committee would then hand out the cash and/or goods to each member and get a receipt signed by each one.

Another alternative for disbursing the loans would be for the credit agent himself to hand out the money to each borrower. However, it would take more time and would probably create more logistical problems.

Communities which are not far from the lender's office or agency and have reasonable means of transportation would disburse the loans at the agency's office on pre-established dates.

Loans for relatively large amounts for fixed investments would be disbursed only in the office. In such cases the transportation costs and other expenses incurred by the borrower are insignificant in proportion to the size of the loan.

4.3.4 Loan repayment:

Loan repayments would be collected at the community level by the credit agent and/or through the community credit committee at the proper time.

At least every two months each client would receive a statement with all the information regarding disbursements, repayments, interest charged and his outstanding balance, including how much money he owes due to accrued interest since the last such statement.

The credit agent would make personal contacts with clients who fall behind their repayment schedules. The agent would be expected to gain the support of the community organization for this task.

4.3.5 Portfolio data and control:

The data to be kept and the reports to be issued could be divided in three groups, according to their purpose:

- Data and reports to be used for follow-up and for control of each client's repayment.
- Data and reports for evaluating the credit program at the community, regional and national level.
- Data and reports for analysis and revision of rules regarding decisions on credit approval and for testing apparent correlations between the portfolio situation and specific variables.

The use of a computer should be considered.

When there is a large number of clients, it is important to have rules for establishing priorities for collection efforts. It is necessary in this case to be able to produce a classification of clients in each community according to the priorities established.

4.4 Investment and Costs:

4.4.1 Assumptions:

- a) There would be sub-agency at the colonization project site for processing loan approvals, disbursements

and collections, and for providing credit training and guidance to the beneficiaries. Within established authorization limits of the agency, the credit agent with the concurrence and assistance of the community organization, would approve and disburse short term loans. The head of the agency would later indicate his authorization by signing the contract.

b) During the first two years of operation, the credit agent would assist an average of only 25 communities with an average of approximately 20 beneficiaries each.

c) There would be a cashier in the sub-agency who would also keep a record of each client's disbursements and repayments.

d) Seasonal labor would be hired during peak times for helping handle disbursements in kind.

e) The agency would make the accounting entries of each transaction. It would keep the record of the outstanding balances, and it would issue periodic statements to the client and the sub-agency of the transactions made during the period.

f) The reports of the daily operations to the agency would be signed by the cashier and the credit agent.

g) The credit agent would be responsible for the administration of the sub-agency.

h) The impact of the sub-agency of cost during the first four years, would be the salaries: 14 months per year, plus 10% of additional fringe benefits, plus 20% allowance for hardship, plus 5% per diem. The rate of increase of these cost items is 10% per year. In addition to this, the total impact on out-of-pocket operating costs of the whole institution would be equivalent to 80% of the total sum of the cost items mentioned above, plus the equivalent to 20% of the original price of the vehicle.

i) A second credit agent and a second cashier would be required, beginning in the third year. Each credit agent would be assigned to service a group of communities chosen in such a way that both agents could use the same vehicle. It would be planned so that the date that one of them visits a nucleo, the other one would visit the neighboring nucleo. At this point a bookkeeper would be required in the agency for maintaining the updated, outstanding balance of each account and for doing other minor, related jobs.

j) Rustic office and living quarters would have to be built.

4.4.2 Cost data:

According to the above assumptions the investment required for fixed assets would be US\$23,200 the first year and a total of US\$26,500 in the four year period (see the following table).

The incremental cost would be US\$25,200; US\$30,300; US\$61,000; US\$68,100 for the first four years, consecutively, for a total of US\$184,600 for the four year period.

SAN JULIAN COLONIZATION PROJECT - CONSOLIDATION PHASE:

INVESTMENT AND INCREMENTAL OPERATING COST OF THE CREDIT PROGRAM

I. Investment Required

Items	Investments - \$US 1,000s									
	Year 1		Year 2		Year 3		Year 4		Total	
	Units	\$US	Units	\$US	Units	\$US	Units	\$US	Units	\$US
-House: office space and living space for three people, 80 square meters	1	12.0	-	-	-	-	-	-	1	12.0
- Desks	2	0.6	-	-	1	0.4	-	-	3	1.0
- Chairs	3	0.2	-	-	-	-	-	-	3	0.2
- Safety file	1	1.0	-	-	-	-	-	-	1	1.0
- Calculators	2	0.2	-	-	-	-	-	-	2	0.2
- Typewriter	1	0.2	-	-	-	-	-	-	1	0.2
- Other furnitures	-	0.5	-	-	-	0.2	-	0.2	-	0.9
- Four-wheel drive vehicle	1	8.5	-	-	-	-	-	-	1	8.5
- Others	-	-	-	1.0	-	0.5	-	1.0	-	2.5
TOTAL		23.2		1.0		1.1		1.2		26.5

II. Incremental Costs

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Total</u>
Credit Agent - 14 months	4.9	5.4	10.9	11.9	33.0
Cashier	2.9	3.2	6.4	7.0	19.5
Bookkeeper proportional	0.0	0.0	2.9	3.2	6.1
Auditing salaries	2.0	3.0	4.0	4.5	13.5
Fringe benefits	1.0	1.2	2.4	2.7	7.3
Allowance for hardship	1.6	1.8	3.4	3.8	10.6
Per Diem	0.5	0.6	1.2	1.4	3.7
Out-of-pocket operating cost	10.3	12.1	24.9	27.6	74.9
Others	2.0	3.0	5.0	6.0	16.0
TOTAL	25.2	30.3	61.0	68.1	184.6

- NOTE: a) The ratio of incremental cost per client in the agricultural portfolio alone, taking as a basis the 4th year, would probably be between \$US27 and \$US22.
- b) The percentage ratio of incremental cost over the agricultural portfolio in the fourth year would be around 2%.

5. CREDIT PROGRAM FOR SMALL AND MEDIUM SIZE BUSINESS:

5.1 Objectives of the Program:

The objectives of the credit program vis-a-vis agribusiness development in the consolidation phase of the San Julian colonization project would be:

a) to promote the organization of feasible business, for supplying the expected growth in demand for goods and services as the farming production activities and the income of the farmers increase

b) to facilitate the installation of industries for processing the raw materials produced in the area

c) to contribute to the development of the area by creating new sources of income and stable employment

5.2 The Components and Terms of the Credit System:

The general considerations discussed in Chapter 3 regarding the objectives of a credit system are also applicable to the small business credit program.

The institutional organization suggested in Chapter 3 for the credit program for small farmers and the roving

credit services at the community or nucleo level are also recommended as components of the system for the small business program.

The same personnel staffing the sub-agency in San Julian would provide services to small and medium size business projects.

5.2.1 Credit beneficiaries:

Small and medium size entrepreneurs who are already living in the project area of San Julian or who have decided to establish themselves with the purpose of operating a feasible business would be eligible to participate in the program. Likewise, farmers or groups of farmers of the nucleos who would like to engage in small business activities which they have gained the necessary skills to operate successfully would be eligible.

5.2.2 Types of credit:

For working capital: The repayment period would be up to 30 months. The principal and interest would be amortized through equal amounts on a monthly or quarterly basis. A line of credit is not recommended in this case,

even though it was recommended for short-term credit for agriculture. The nature of small business is different. Whereas in the usual agricultural activities of small farmers the sales and incomes are seasonal. In the case of small business the sales are more or less even throughout the year, and relatively high inventories of raw materials and finished products must be kept. It is more appropriate for small business to repay their working capital loans periodically over a reasonable period. However there should be flexibility and care, due to the fact that there are some small business activities which are seasonal, such as threshing or dehulling.

For financing fixed assets: The repayment period would be up to 84 months. The principal and interest would be amortized through equal, monthly, quarterly or semiannual payments.

Under special circumstances clients would be allowed to cancel only a fraction of the periodic repayment. However, they would be charged a penalty interest rate of 1% per month on the overdue balance.

A grace period of up to 18 months could be provided, depending on the forecast cash flow of the business.

5.2.3 Record of outstanding balance:

There should be only one outstanding balance account per client. This means that for clients who have obtained loans for working capital and fixed assets, the amounts to be repaid at each payment period would be based on the forecast of their cash flows. This is equivalent to saying that the loans for working capital and for fixed assets would be blended into just one account per client.

5.2.4 Purpose of loans:

To provide funds for working capital and fixed assets for the development and operation of viable projects of small and medium size industry, handicraft, services and commerce. Loans for working capital would be mainly for financing inventories. Loans for fixed assets would be for financing machinery, equipment, tools and warehouses or storing facilities.

5.2.5 Minimum loan amount per client:

The minimum loan amount should be relatively low at the beginning of the program -- about \$b.3,000 or \$b.5,000.

The economic implication of this policy for the lender should be analyzed after disbursing about 50 loans. The minimum loan amount would be raised if the cost of disbursement and servicing should result in a loss to the lender. This would be the case if there were a concentration of many small loans with a significant number of them producing a negative contribution to fixed cost.

The above strategy might seem inconsistent or different to the one recommended for agricultural credit. It does not seem probable in the case of small business that small entrepreneurs, each one with his own business, would want to make joint loan applications for meeting a given minimum loan amount requirement. The case is also different because there would not be as many small businessmen as there would be farmers. Furthermore, the small businessmen would probably not live as close to each other as would be the case of the farmers, thus they would not know each other as well. There is probably also a higher sense of competition among businessmen of this type than among farmers.

5.2.6 Maximum loan amount per client:

The maximum loan amount would be established at \$US30,000 at the beginning of the program. For cooperatives and corporations the maximum would be \$US700,000.

5.2.7 Guarantees.

Here again, the borrower's integrity, pride, good will and know-how are the most relevant guarantees.

Collateral would be established on finished products and raw materials if only working capital were financed. Collateral would be established on all the fixed assets of the business when loans were provided for purchasing assets.

Mortgages on the land and building would be required when loans were provided for construction.

The guarantees of two co-signers would be required in all cases for loans below \$US5,000. One of the co-signers would have to be a person who did not belong to the family of the borrower.

Regardless of the above mentioned general policies, additional guarantees would be required for higher risk loans. The additional guarantees could be a mixture of those mentioned above.

5.2.8 Approving loan applications:

As in the case of small farmers, the loan application form for small businesses should contain eligibility and risk evaluation questions (4.3.1, above).

Eligibility questions for individual loans would reveal:

- bank and commercial references, or opinions from some of the neighbors if the applicant does not have references from banks or commerce:

- whether or not the applicant is a permanent resident of the project area:

- type of business.

Risk evaluation questions that would be assigned weighted numerical values could reveal the following:

- period of time that the business has been in operation:

- debt:equity ratio

- factor of projected profits/debt

- income of co-signers

5.2.9 Limit of debt:equity ratio:

Businesses with relatively high investments in fixed assets (fixed assets/total assets, higher than 0.6) would be required a debt:equity ratio of less than 2.5.

Businesses with lower investments in fixed assets would be required a debt:equity ratio of less than 1.2.

Since usually these businesses do not keep accounting records, it would be necessary to inspect the business of the applicant and establish the balance statement through a physical evaluation of the assets.

5.2.10 Determining the repayment period:

The repayment period would be determined in such a way that the periodic repayments would not be above a certain percentage of the profit of the business. This percentage would be established taking into account that the profits are the source of funds for the living expenses of the client and his family.

The maximum periodic repayment amount for individual loans would be equivalent to 20 percent of the expected profits of the period when the total profit is less than an average of \$US100 per month. The total period for repaying the loan would then be determined, keeping within the maximum allowable duration for the type of loan in question.

5.2.11 Interest rate and commission on disbursements:

The same criteria established for credit for small farmers is applicable to the credit program for small and

medium size businesses (4.2.9). The interest rate would be higher for smaller loans.

5.2.12 Refinancing:

Clients whose businesses are performing well and are classified as good credit risks would have the opportunity to combine their outstanding balances with new loans to meet justified need of the business.

5.2.13 Educational component:

There would be a low-cost educational component for improving the overall administrative skills of small business operators.

Seminars would be held at the NADEPA level on simple, practical concepts of cost efficiency, revenue and expense records and general marketing principles.

In the medium-term, specific studies and seminars would be held on the most common business activities of the project area. The most common, year-round processing activities would probable be: bakeries, corn products, dairy products, sweets, leather products; shoes, belts, harness, garments, wood products, brick and roofing tile.

5.2.14 Loan authorization limits of the sub-agency and agency:

The authorization limits per loan for the sub-agency would be \$US3,000 and for the agency \$US25,000.

6. INSURING LENDER'S CAPACITY AND AVAILABILITY OF FUNDS:

The financial institution in charge of channeling sub-loans to the project area would be allowed to make a margin large enough to cover costs, including a provision for bad debts, and to receive a reasonable contribution to fixed costs.

It would be requested that this financial institution meet the following requirements:

- it would have designed all the required systems and procedures to the last detail;
- the whole credit system would have been proven to fit in the organizational structure and the accounting and auditing systems;
- it would be able to show a sound personnel policy;
- the personnel chosen for the program would meet the minimum qualifications established in the job descriptions;

- the whole organization would be well acquainted with and committed to the program, and the personnel who would operate it would have been given the proper training. The effectiveness of the training would be proved through simulation.

It would also be requested that any refow of the program funds not being used for credit at any given time be deposited in a special, interest-bearing account, preferably at the Central Bank.

The total amount disbursed to the financial institution would be at all times equal to the portfolio of the program plus the balance in the above mentioned special deposit account.

7. SAVINGS:

A savings systems would be introduced at the proper time with the purpose of developing the habit of saving among both adults and children in the community. As the income of the people rise there would also be a need for a way of safe-keeping their cash. The savings of the people living in the community could become an important source

of funds for the lender in the long run.

It would be easier to develop confidence on the part of the people in a savings system if they were pleased with the credit system.

The alternatives for a savings system should be discussed with the organization of each NADFFA in order to improve the probabilities of success of the system. Some alternatives for a saving system are:

- the well-known savings passbook;
- making the credit account a double purpose one; that is to say that the credit account would automatically become a savings account when it showed a positive balance in favor of the client (The legal and accounting implications of this alternative would have to be studied);

- giving the client savings stamps for each deposit made through the banks's agent at the community level. The client would exchange the stamps for cash when he went to the sub-agency's office, or he could return the stamps and have the amount credited in his passbook. The promotion of well-organized cooperatives should also be pursued as a means for developing saving habits and collecting funds for credit programs.

8. FORECAST OF AGRICULTURAL CREDIT DEMAND, CASH-FLOWS,
OUTSTANDING PORTFOLIO AND CONTRIBUTION TO FIXED COST:

8.1 Assumptions:

- Settlement capacity of the project as of September 1979
- Constant Bolivian pesos
- Rate of adoption of the farm model and credit demand per activity forecast in the proposed project achieved.

8.2 Analysis:

8.2.1 Capital requirements:

The credit requirements for each activity shown in the project development plan for the area were grouped according to the length of repayment period.

The credit disbursements of each group or type of credit for a period of ten years are shown in Table 1. The total disbursements for the whole period would be \$b.326,792,100. The distribution is as follows: 43.7% for long term 5 year credit; 1.9% for medium term credit (three years repayment period) and 54.4% for short term credit.

The credit requirements for a period of only four years are shown in Table 2. The total disbursements for this period would be \$b.92,910,000 (\$US\$,635,545) distributed as follows: 61.4% for long term, 3.8% for medium term and 34.8% for short term.

As time passes the mix of credit requirements changes from a higher proportion of long term credit to a higher percentage of short term credit.

The theoretical repayment schedule for a period of ten years is shown in Table 4.

The probable outstanding portfolio for each year, the repayments flow and the net cash flow of disbursements and repayment were estimated in Table 5. For estimating the probable portfolio, it was assumed that the overdue balance would be equivalent to 15% of the theoretical portfolio in the first three years and 10% of the portfolio from then on.

The portfolio reaches its peak in the eighth year at \$b.91,269,000. At the end of the fourth year, the portfolio would be \$b.66,353,000. However, to support the

proposed farm development model at the projected rate of adoption would require \$b.91,269,000 for funding the peak portfolio level. This is almost equal to the total disbursement of \$b.92,710,000 estimated for the first four years of the plan.

In the ninth and tenth years the cash flow would be positive. Repayments would be higher than disbursements.

8.2.2 Interest income:

The interest income cash flow is shown in Table 6. The interest charges were calculated for the current portfolio at 15% for medium and long term loans and at 19% for short term credit.

The contribution to fixed cost in each one of the first four years of the program is shown in Table 3. In the third and fourth years the contribution to fixed cost over the outstanding portfolio is 6.8% and 7.4%. Between the fourth and the eighth year the interest income would grow from \$b.9,494,000 to \$b.13,370,000 or 40.8%.

The above analysis is reliable at a given mix of short and long term portfolios at 15% and 19% interest. It

shows that the program is feasible for an established organization to undertake.

8.2.3. Minimum loans:

The outstanding portfolio for short term loans at zero contribution to fixed costs would be approximately:

For short term portfolio: $(0.19X - 0.03X - 0.4X = \$b.$

$$\frac{1,362,000}{3,150 \text{ clients} \times 2 \frac{\text{accounts}}{\text{client}}}; X = \$b. 1,800$$

Medium and long term loans would have different values for the minimum loan amounts which produce zero contribution to fixed cost, depending on the length of the repayment period.

The minimum loan amount could be determined, allowing for a 10% error, as follows:

a) Estimate the minimum outstanding portfolio balance which would produce zero contribution to fixed costs in a period of one year without taking into consideration any provision for bad debts.

$$\frac{15\%}{100\%} Y = \$216 + \frac{40\%}{100\%} X Y$$

where Y = average account balance in the portfolio.

$$Y = 216/0.11 = \$b.1,963$$

b) The following equation would provide the value of the minimum loan amount, taking into consideration the length of the repayment period but not including the provision for bad debts:

$$\frac{(Y \times 2)}{P + 1} \times P$$

where P = length of repayment period.

If a repayment period of 5 years were assumed, it would read:

$$\left(\frac{\$b.1,963 \times 2}{5 + 1} \right) \times 5 = \$b.3,270$$

c) The minimum amount thus calculated would have to be increased to provide for bad debts, which in this case assumed to be 3% of the loans disbursed.

$$\$b.3,270 \times 0.03 = \$98$$

The approximate minimum loan amount for a five year repayment period loan, would be:

$$\$b.3,270 + (98/0.15) = \$b.3,923$$

8.2.4 Costs and returns to the lender (an example):

As further explanation, the income and expenses generated by this loan would be shown:

-- The amortization of the principal:

$$\text{\$b.}3,923/5 = \text{\$b.}784 \text{ per year}$$

- The variable cost per year per account in the portfolio is $\text{\$b.}216$

- Income and expenses:

Income and Expenses from a Five year Loan of $\text{\$b.}3,923$ at 15 Percent Interest and 4 Percent Cost to its Lender

<u>Year</u>	<u>Outstanding Balance</u>	<u>Income from 15% Interest</u>	<u>Financial Cost to the Lender -4%</u>
1	$\text{\$b.}3,923$	$\text{\$b.} 588$	$\text{\$b.} 157$
2	3,139	470	125
3	2,355	353	94
4	1,571	236	63
5	787	118	31
		$\text{\$b.}1,765$	$\text{\$b.} 470$

- Interest income = cost (+) error

$$\text{Error} = \text{\$b.}1,765 - \text{\$b.}216 \times 5 + \text{\$b.}470 + \text{\$b.}98$$

$$\text{Error} = \text{\$b.}1,765 - \text{\$b.}1,648 = \text{\$b.}117$$

$$\text{Percent error} = (117/1,765) \times 100\% = 6.6\%$$

Another important variable is the percentage of loan disbursements which would eventually have to be written off. In the estimates made, it was assumed that bad debts

would be only 3% of loans disbursed. At the average outstanding current balance per client of \$b.18,960 (\$b. 59,723,000/3,150) in the fourth year, the contribution to fixed cost would be zero if the percentage of bad debt per disbursement were:

$$\begin{aligned} \$b.18,960 \times 0.159^* &= \$b.432 + \frac{\$b. 33,979,000}{3,150 \text{ clients}} \times Y + 0.04 \\ &(\$b.21,064); Y = 16.1\% \end{aligned}$$

In this example the cost of money to the lender was assumed to be 4 percent.

At the average outstanding current balance per client of \$b.18,960, the contribution to fixed cost would be zero if the cost of money were:

$$\begin{aligned} \$b.18,960 \times 0.159 &= \$b.432 + \frac{\$b.1,019,000}{3,150 \text{ clients}} \times Y \quad (21,064); Y = 10.7\% \end{aligned}$$

Based on the credit system described in Chapter 4, the variable cost per account in the portfolio would be \$b.216 per year. There would be only two accounts per client, one for his short term loan and the other for his long term. In this way, variable cost per client per outstanding current balance would be about 2.3%.

* Average interest rate of the portfolio mix of short and long term credit.

All the above estimates are based on constant Bolivian pesos.

9. FORECAST OF CREDIT DEMAND FOR SMALL AND MEDIUM SIZE BUSINESS:

9.1 Assumptions:

- Settlement capacity of the project as of September 1979.
- Constant Bolivian pesos.
- More than 3,000 families settles by the beginning of the third year.
- The agro-economic model would be implemented as planned.
- Small business activities would be implemented by individual families living in the nucleos.
- Credit would be provided to cooperatives or other formal or informal groups for purchasing tractors and threshing machines. In any case, the machines would be used by several farmers through a rental system or other arrangements.

- Two sawmills would be established for processing the timber which is cut in the process of clearing farm land (Table 10).

There will be no public electric power service in the four-year period considered.

- Excluding the hire of agricultural equipment, between 25% and 35% of the purchasing power would be spent for purchases from the local small businesses within the four year period.

The percentages of the total local purchases from each sub-sector would be 60% from commerce, 15% from industry and 25% from services.

- The number of small businesses to be established each year was estimated in Table 10, assuming the sales volume and a reasonable percentage profit over sales. The total investment requirements of each business was estimated, assuming what was considered to be a usual and reasonable return on investment for each sub-sector of small business in an area which is relatively remote from the urban centers.

The credit requirements were determined, assuming a reasonable debt:equity ratio (5.2.9).

9.2 Analysis:

The credit requirements of small businesses would be only \$b.1,315,000 during the four years of the project. This amount is equivalent to 2.5% of the total credit requirements (Table 10). The number of clients who would receive loans would be 131 for small commerce, 11 for small industry and 18 for services. The average loan per client would be \$b.4,400 for small commerce, \$b.31,800 for industry and \$b.21,700 for services.

Small industry, which could be established or expanded during the period, includes bakeries, garments, brick, roof tile, leather products and wood products. The service sector would be engaged mostly in repair of equipment, hand operated pumps and machines and equipment used for farming, and some construction. Most of the credit requirements would be for the purchase of equipment for agriculture and transportation. The participation of this type of credit would be \$b.27,360,000, which is equivalent to 51.9% of the total credit requirements. Threshing machines alone, according to the units forecast in the production model, would account for 38.2%.

The second highest credit requirement would come from the installation and operation of two sawmills with a total credit requirement of \$b.24,000,000 which is equivalent to 45.6% of the total requirement of the whole program.

The average repayment periods would be three years for small commerce, six years for small industry and the sawmills, four years for investments in machines for agriculture and other services.

Even though a cash flow of repayments was not prepared, as in the case of credit for agriculture, it can be expected that the reflows would be relatively small during the project period due to long repayment periods and due to the projection that 62% of the total requirements would be disbursed in the last two years.

Given that the smallest loan would be \$b.4,400, and taking into consideration the long repayment periods, it would be adequate to charge an interest rate of 19% on all loans below \$b.30,000 to get a reasonable contribution to fixed costs. For loans above this amount the interest rate would be 15%.

Table 1

SUMMARY OF TOTAL CREDIT REQUIREMENTS PER YEAR FOR TEN YEARS
(Thousands of Constant Bolivian Pesos)

I T E M	Y E A R										TOTAL	PERCENT
	1	2	3	4	5	6	7	8	9	10		
<u>PRODUCTIVE INVESTMENT :</u>												
Long Term :	10,074	12,634	16,665	17,544	13,875	21,063	19,145	16,753	7,408	7,182	142,341	43.7
Repayment Period, 5 Years Interest Rate, 15%												
Medium Term :	432	666	864	1,530	1,296	1,296	216	216	216	216	6,948	1.9
Repayment Period, 3 Years Interest Rate, 15%												
Production	2,301	5,085	9,931	14,905	18,733	22,113	23,233	25,455	27,396	28,270	177,503	54.4
Repayment Period, 1 Year Interest Rate, 19%												
T O T A L	12,887	18,385	27,460	33,979	33,904	44,472	45,594	42,424	35,020	35,668	326,792	100.0

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Table 2

SAN JULIAN CONSOLIDATION PROJECT

SUMMARY OF AGRICULTURAL CREDIT REQUIREMENTS FOR THE FIRST FOUR YEARS

(\$b. 1,000's)

I T E M	Y E A R				TOTAL	PERCENT
	1	2	3	4		
<u>PRODUCTIVE INVESTMENT :</u>						
Long Term :	10,074	12,634	16,665	17,544	56,916	61.4
Repayment Period, 5 Years Interest Rate, 15%						
Medium Term :	432	666	864	1,530	3,492	3.8
Repayment Period, 3 Years Interest Rate 15%						
Production :	2,381	5,085	9,931	14,905	32,303	34.8
Repayment Period, 1 Year Interest Rate, 19%						
T O T A L	12,887	18,385	27,460	33,979	92,711	100.0
Percent of Total Requirements :	13.9	19.8	29.6	36.7	-	100.0

Table 2

Table 3

SCHEDULE OF THE AMORTIZATION OF THE LOANS DISBURSED EACH YEAR FOR TEN YEARS

(Numbers in Columns Indicate Outstanding Loans by Year of Disbursement)

I T E M	Y E A R									
	1	2	3	4	5	6	7	8	9	10
<u>THEORETICAL REFLAWS :</u>										
Long Term Credit :	0-	1-	1-2-	1-2-3-	1-2-3-4	1-2-3-4-	2-3-4-	3-4-	4	
(20% per year repayment from each year's loans)						5-	5-6-	5-6-7-	5-6-7-8-	5-6-7-8- 5-
Medium Term Credit :	0-	1-	1-2-	1-2-3-	2-3-4-	3-4-5-	4-5-6-	5-6-7-	6-7-8-	7-8-9-
(33.33% per year repayment from each year's loans)										
Short Term (Production) Credit:	0	1	2	3	4	5	6	7	8	9
(100% per year repayment from each year's loans)										

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Table 4.

THEORETICAL TOTAL REPAYMENTS OF PRINCIPAL PER YEAR
(\$b. 1,000's)

I T E M	Y E A R										TOTAL
	1	2	3	4	5	6	7	8	9	10	
<u>THEORETICAL REFLOWS :</u>											
Long Term Credit :	0	2,015	4,541	7,874	11,383	14,158	16,355	17,456	17,674	15,674	107,330
(20% per year repayment from each's year's loans)											
Medium Term Credit :	0	143	366	653	1,018	1,228	1,372	934	574	214	6,502
(33.33% per year repayment from each year's loans)											
Short Term (Production) Credit:	0.	2,380	5,085	9,931	14,905	18,732	22,113	23,233	25,454	27,396	149,229
(100% per year repayment from each's year's loans)											
THEORETICAL TOTAL	-	,538	9,992	18,458	27,376	34,118	39,840	41,823	43,702	43,284	263,061

Table 4

Table 5

PROBABLE OUTSTANDING PORTFOLIO BALANCE, REPAYMENT, CASH FLOW OF THE PRINCIPAL
NET CASH FLOW OF DISBURSEMENT AND REPAYMENTS BY YEAR FOR TEN YEARS
(\$b. 1,000's)

	Y E A R									
	1	2	3	4	5	6	7	8	9	10
A. Total Disbursements	12,887	18,385	27,460	33,979	33,903	44,471	45,593	42,424	35,020	35,568
B. Theoretical Repayments	0	4,538	9,992	18,458	27,306	34,118	39,840	41,823	43,702	43,284
C. Theoretical Outstanding Portfolio Balance (Cx = C(x-1)+A-B)	12,887	26,734	44,202	59,723	66,320	76,673	82,426	83,027	74,345	66,729
D. Probable Overdue Balance: 15% of theoretical balance The First Three Years - and 10% the rest of the period	-	1,933	4,010	6,630	5,972	6,632	7,667	8,242	8,302	7,134
E. Probable Outstanding Portfolio Balance E = C-D	12,887	28,667	48,212	66,353	72,292	83,309	90,093	91,269	82,647	74,163
F. Repayments Cash Flow B - (D ₂ - D ₁)	0	2,605	7,915	15,838	27,954	33,458	38,805	41,248	43,642	44,152
G. Net Cash Flow (F - A)	(12,887)	(15,780)	(19,545)	(18,141)	(5,949)	(11,013)	(6,788)	(1,176)	(8,622)	(8,484)

Table 6

INTEREST INCOME CASH FLOW

(\$b. 1,000's)

SOURCE	YEAR									
	1	2	3	4	5	6	7	8	9	10
Long and Medium Term: (15% Interest)										
Current Portfolio :	10,745	22,158	35,264	46,309	49,461	55,772	61,336	60,117	49,689	41,287
Interest Income :	1,611	3,323	5,289	6,946	7,419	8,515	9,200	9,017	7,453	6,193
Short Term : (19% Interest)										
Current Portfolio :	12,142	4,576	8,938	13,414	16,859	19,901	20,910	22,910	24,656	25,442
Interest Income :	406	869	1,698	2,548	3,203	3,781	3,973	4,353	4,684	4,834
TOTAL INCOME FROM INTEREST	2,017	4,192	6,987	9,494	10,622	12,296	13,173	13,370	12,137	11,027

Note 1.- Assumption: Interest income will be generated only by the current outstanding balance (See Table 5 Line E)

Note 2.- Assumption: The current outstanding portfolio of short term loans at the end of each year will be equal to 90% of the short term credit (1 year repayment period) disbursed the previous year. The current outstanding portfolio of medium and long term credit was estimated by subtracting the short term portfolio from the total current outstanding portfolio (See Table 5 , Line E)

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Table 9

ESTIMATED CASH LIQUIDITY OF FARMERS AND THEIR EXPENDITURES WITH LOCAL SMALL BUSINESS

(\$b. 1,000's)

I T E M	Y E A R									
	1	2	3	4	5	6	7	8	9	10
A. Disbursements of Agricultural Credit Prog.: (Table 1)	12,886	18,385	27,460	33,979	33,903	44,471	45,593	42,424	35,020	35,668
B. Production Costs and Investments: (From Economic Analysis)	45,860	60,040	77,720	96,220	104,240	126,040	134,860	144,040	142,380	150,260
C. Value of Production: (From Economic Analysis)	45,100	61,460	87,060	110,760	134,780	159,540	179,720	200,800	214,210	417,800
D. Repayments (Table 5)	-	2,605	7,915	15,838	27,954	33,458	38,805	41,248	43,642	44,152
E. Cash Liquidity (A-B+C-D)	12,126	17,200	28,885	32,681	36,489	44,513	51,648	57,936	63,118	
F. Percent of Cash Liquidity used in Local Purchase of Goods and Services	25	25	30	35						
G. Cash Liquidity used in Local Purchase of Goods and Services	3,031	4,300	8,665	11,438						
H. Purchase made in Local Commerce, 60%	1,818	2,580	5,199	6,863						
I. Purchase made from Local Industry 15%	456	645	1,300	1,716						
J. Purchases of Services, 25% (does not include the hire of threshing services because it was included in Ag. Credit)	757	1,075	2,166	2,859						

Note: Cash Liquidity in the hands of Farmers = Disbursements (-) Production Costs and Investments (+) Value of Production (-) Repayments

Table 9

Table 10

ESTIMATED PROFITS, INVESTMENTS AND CREDIT REQUIREMENTS OF LOCAL SMALL BUSINESS

(\$b. 1,000's)

SUBSECTOR	Y E A R				AVERAGE REPAYMENT PERIOD YEARS	TOTAL PER SECTOR	PERCENT OF TOTAL DISBURSEMENTS	AVERAGE PER CLIENT
	1	2	3	4				
1. COMMERCE					3			
- Average Sales per Unit per year \$b. 1,000's	40	42	45	52	-	-	-	-
- Total Number of Clients:	45	61	115	131	-	-	-	-
- New Clients :	45	16	54	16	-	-	-	-
- Sales of New Clients:\$b. 1,000	1,818	672	2,430	832	-	-	-	-
- Profits of New Clients: 15% over sales \$b. 1,000	270	100	364	124	-	858	-	-
- Total Investment - \$b. 1,000								
Fixed Assets - 10% of Sales	180	67	243	83	-	-	-	-
Working Capital: 10% of Sales	180	67	243	83	-	-	-	-
S U M	360	134	486	166	-	1,146	-	-
- Credit Requirement 50% of Sum - \$b, 1,000	180	67	243	83	-	573	1.1	4.4
2. INDUSTRY								
- Average Sales per Unit per Year - \$b. 1,000	100	110	140	150	6	-	-	-
- Total Number of Clients:	4	5	9	11	-	-	-	-
- New Clients :	4	1	4	2	-	-	-	-
- Sales of New Clients-\$b. 1,000	456	110	460	300	-	-	-	-
- Profits of New Clients 15% over sales - \$b. 1,000	68	16	69	45	-	198	-	-
- Total Investment - \$b. 1,000								
Fixed Assets: 2 Times the Profits	136	32	138	90	-	-	-	-
Working Capital: 10% Over Sales	45	11	46	30	-	-	-	-
S U M	181	43	184	120	-	528	-	-

Table 10

RESEARCH PROJECTS, INVESTMENTS AND CREDIT REQUIREMENTS OF LOCAL SMALL BUSINESS

- Credit Requirement	120		28	122	30		350		0.7	31.8
- 2/3 of Sum - \$b. 1,000										

3. SERVICE

- Average Sales per Unit per Year - \$b. 1,000	60		80	140	160					
- Total Number of Clients	12		13	15	18					
- New Clients	12		1	2	3					
- Sales of New Clients: \$b. 1,000	757		80	280	480					
- Profits of New Clients										
- 20% Over Sales - \$b. 1,000	151		16	56	96		4	319		
- Total Investment - \$b. 1,000										
- Fixed Assets : 1.5 Times the Profits:	226		24	84	144					
Working Capital: 7% Over Sales	52		6	20	34					
S U M	278		30	104	178			590		
- Credit Requirement	185		20	69	118			392	0.7	21.7
- 2/3 of Sum - \$b. 1,000										

4. EQUIPMENT FOR AGR. SERVICES:

4.1. Tractors with Tools - 10 Units of 30 to 50 HP at \$b. 400,000 per Unit:			400	1,600	2,000					4,000	7.6
4.2. Threshing Machines at \$b. 160,000 per Unit (From Economic Development Plan)	3,200		3,840	6,720	6,400		4	20,160	38.2		

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//3. ESTIMATED PROFITS, INVESTMENTS AND CREDIT REQUIREMENTS OF LOCAL SMALL BUSINESS

4.3. Trucks - 4 Units at \$b. 800,000 per Unit	-	-	1,600	1,600	4	3,200	6.1	-
5. OTHER FOR MEDIUM Size Industry: Saw Mills - 2 Units Production Value of each unit between \$b. 10,000,000 and 16,000,000.-								
TOTAL CREDIT	-	<u>12,000</u>	-	<u>12,000</u>	6	<u>24,000</u>	45.6	-
TOTAL CREDIT REQUIREMENTS:	3,685	16,355	10,354	22,281	-	52,675	100.0	-
TOTAL CREDIT REQUIREMENT FOR THE PERIOD: \$b. 52,675,000 or US\$ 2,633,750								

Note: By new business it is also meant established businesses which receive loans.

Table 7 NET CASH FLOW FROM INTEREST RECEIVED,
MINUS TOTAL INCREMENTAL COST DURING THE FIRST FOUR YEARS
(\$b. 1,000's)

	Y E A R			
	1	2	3	4
Total Income from Interest Received (From Table)	2,017	4,192	6,987	9,494
Total Incremental Operating Cost (5-4-2 above, data expressed in \$bs.)	504	606	1,220	1,362
Net Cash Flow from Interest Received Minus Incremental Cost	1,513	3,586	5,767	8,132

Note: The total out of pocket cost of the credit programs, including small business, was charged to the agricultural credit program for simplicity taking into consideration that the Agricultural Program would be major activity of the lender in the project from the point of view of number of beneficiaries.

Table 8

APPROXIMATE CONTRIBUTION TO FIXED COST

during the first four years

(\$b. 1,000's)

	Y E A R			
	1	2	3	4
Net Cash Flow from (Table):	<u>1,513</u>	<u>3,586</u>	<u>5,767</u>	<u>8,132</u>
MINUS :				
Provision for bad debts: 3% of disbursements :	386	551	823	1,019
Financial Cost 4%:	515	1,146	1,928	2,654
Contribution to Fixed Cost	612	1,889	3,016	4,459
Percent of contribution over current outstanding portafolio at the end of the year:	4.7	7.0	6.8	7.4

Note: Neither the commission of one percent on disbursement or possible interest income from excess liquidity was included.

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//3. ESTIMATED PROFITS, INVESTMENTS AND CREDIT REQUIREMENTS OF LOCAL SMALL BUSINESS

4.3. Trucks - 4 Units at \$b. 800,000 per Unit	-	-	1,600	1,600	4	3,200	6.1
5. OTHER FOR MEDIUM Size Industry: Saw Mills - 2 Units Production Value of each unit between \$b. 10,000,000 and 16,000,000.-							
TOTAL CREDIT	-	<u>12,000</u>	-	<u>12,000</u>	6	<u>24,300</u>	45.6
TOTAL CREDIT REQUIREMENTS	3,685	16,355	10,354	22,281	-	52,675	100.0

TOTAL CREDIT REQUIREMENT FOR THE PERIOD: \$b. 52,675,000 or US\$ 2,633,750

Note: By new business it is also meant established businesses which receive loans.