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FACTORS LIMITING CREDIT SYSTEM SUCCESS AND  
AFFECTING DELINQUENCY IN PERU

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## FOREWORD

The Agricultural Finance Center of The Ohio State University, through a contract with The United States Agency for International Development, is conducting a world-wide research project on "An Analysis of Programs for the Development and Improvement of Agricultural Credit Institutions and Services." This project is designed to develop principles and guidelines useful to AID and developing countries in the establishment and operation of permanent and effective institutions and systems for providing agricultural credit in developing countries.

Delinquency and defaults of agricultural loans have plagued many of the agricultural credit institutions in developing countries. This problem not only causes loan fund shrinkage, but may also deplete the funds of other development programs. Delinquency and defaults of loans are problems within themselves, but are also manifestations of problems within the total credit system. This report, therefore, is concerned with the problem of delinquency and defaults, and the causes of delinquency.

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The authors are members of the Agricultural Finance Center staff of the Ohio State University, Department of Agricultural Economics and Rural Sociology. Mr. Stansbury and Mr. Carter served as the field research team in Peru and conducted the analysis reported herein. Mr. Bailey is responsible for direction of the overall project.

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## FACTORS LIMITING CREDIT SYSTEM SUCCESS AND AFFECTING DELINQUENCY IN PERU

### Introduction

Efforts to achieve agricultural development in Latin America and the emerging nations of Africa and Asia have been dampened by several problems. These include lack of basic knowledge about the countries' environments, resources and peoples; inadequate or incompatible social, political or economic structures and the lack of trained personnel for the implementation of development programs. However, these basic problems are often obscured by their more evident effect, economic underdevelopment, resulting in attention being focused upon the effects of underdevelopment rather than the underlying causes.

The most complicating factor is not the presence of these problems but rather the pressures for immediate action programs which afford no time for objective analysis of the unique situations and underlying problems involved. When action programs are initiated without first solving the underlying problems, or at least considering them, these programs often fall victim to the same problems which have caused the economic disparity.

Agricultural credit, as a part of the larger agricultural development program, has been plagued by many of the above mentioned problems. Agricultural credit would seem to be a useful tool to assist in the achievement of agricultural transformation, capital procurement, and technique transformation. However, the success of agricultural credit is dependent upon the structure of the credit system and the compatibility of that structure with the environment in which it must operate.

In their attempts to implement agricultural credit programs, faced with the pressures of time, developers have looked to existing and successful programs such as the Farmers Home Administration for models. The problem is that many of the infrastructural factors which enabled FHA to be successful in the United States are non-existent in developing countries. The use of such unadapted models for credit programs in developing countries has resulted in several problems for agricultural credit and agricultural development. The foremost of these problems is the failure to achieve the desired degree of success. This is frequently reflected by high levels of delinquency and defaults with shrinkage of revolving loan funds and drainage of resources from other development projects.

This study focuses upon the problem of loan delinquency and uses delinquency as an index of credit system success. When a loan becomes delinquent some part of the credit system has broken down. By looking at the problem of delinquency and the factors associated with delinquency, insight into the operations of a credit system can be attained.

### The Problem

The problem can be generally stated as the failure of development programs to achieve the desired levels of economic progress and growth. Component problems include the failure of agricultural credit programs to achieve the desired goals of the program planners, and the associated problem of delinquency of agricultural credit which impedes the performance of the credit program.

The problem of delinquency is primarily an effect rather than a cause of development failure. That is, delinquency of agricultural credit is a product of many of the same negative factors which limit the total development programs. However, delinquency creates additional problems and compounds development failure through resource drainage from other development programs by decreasing the opportunity to create capital, and through propagation of adverse psychological attitudes toward credit and development.

A few examples of the delinquency levels found in developing countries will demonstrate the magnitude of the delinquency problem. Peru presently has between 15 and 30 percent delinquency; Nigeria has upward of 90 percent delinquency in some areas, and Ecuador has had between 30 and 40 percent delinquency.<sup>1/</sup> While these levels are not universal to all less developed countries, they are not, by any means, unique to the countries cited.

In brief, delinquency can be viewed as a problem which limits the effectiveness of credit usage in the achievement of economic development. To achieve full benefit from credit, delinquency must be minimized. However, very little attention has as yet been given to identification of the underlying reasons or factors which cause delinquency.

### The Objectives

While the focal point of this study is delinquency of agricultural credit, the objectives go beyond delinquency. The objectives are:

1. To identify the causal factors of agricultural credit delinquency,
2. To make recommendations which will reduce the level of delinquency through the elimination of causal factors of delinquency, and
3. To suggest guidelines for credit institutional development.

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<sup>1/</sup> These levels were established by Ohio State University Agricultural Finance Center teams working in the respective countries.

### The General Hypotheses

This analysis uses two general operational hypotheses and three sub-hypotheses in the pursuit of the above objectives. The first general hypothesis is: Delinquency of agricultural credit can be used as an index of the successful operation of the credit system. The second is: By interviewing a sample of delinquent and non-delinquent credit users of the Banco de Fomento Agropecuario del Peru and by comparing differences in economic, geophysical, and cultural variables associated with the two groups (delinquent and non-delinquent credit users), causal factors associated with credit delinquency in Peru can be identified.

Sub-Hypothesis A.--Further, variables associated with the borrower and relating to his individual situation, such as resources, production techniques and personal attitudes affect the delinquency levels of agricultural credit.

Sub-Hypothesis B.--Further, variables associated with the lending institution, such as institutional objectives, operational procedures, and institutional resources affect the delinquency levels of agricultural credit.

Sub-Hypothesis C.--Further, variables associated with the general environment within which the borrower and lender operate, such as climate, infrastructure and social attitudes affect the delinquency levels of agricultural credit.

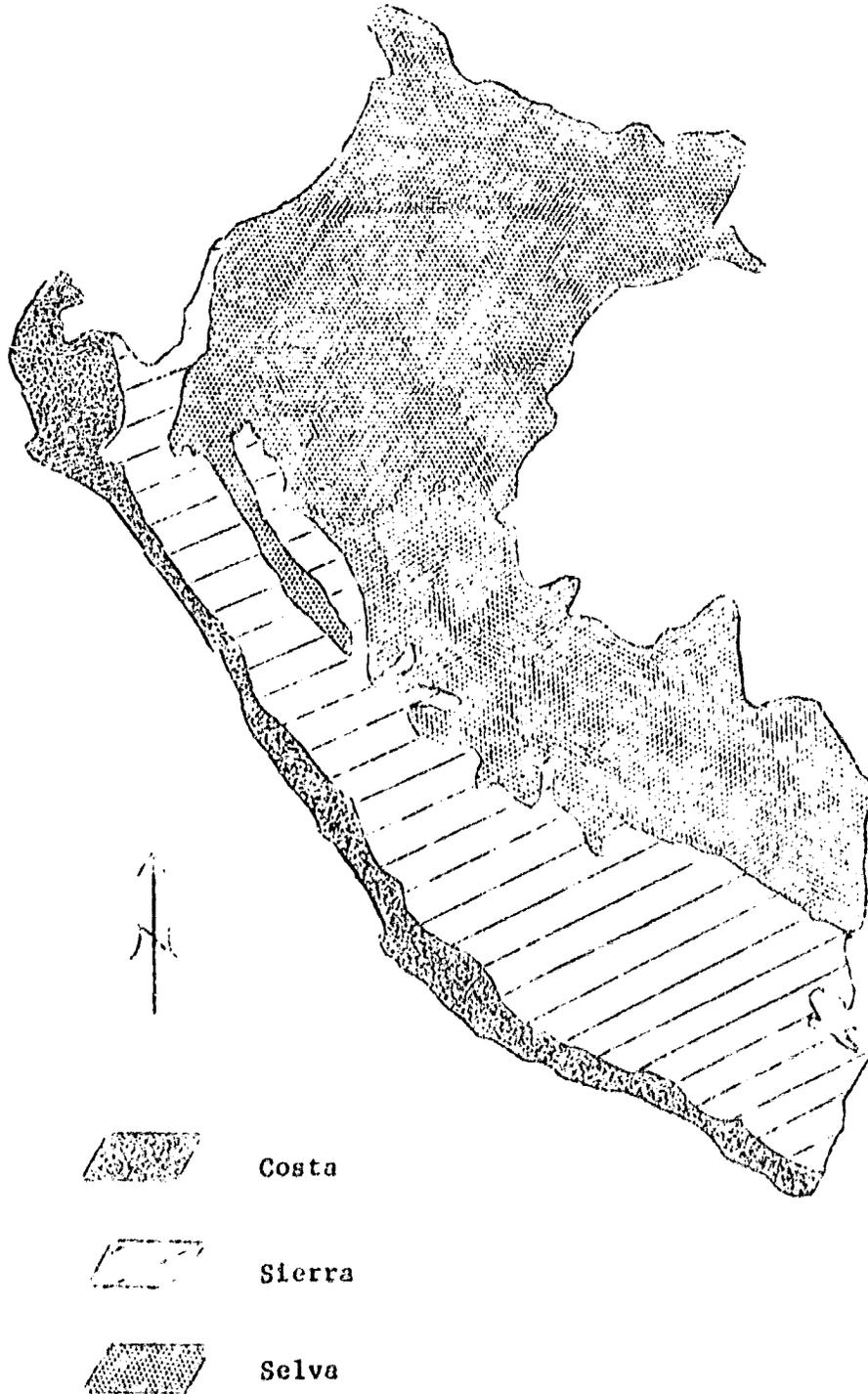
### The Setting

The field work upon which this study is based was conducted in Peru between April and September of 1966. The Peruvian economic situation is typical in many ways of most of the developing nations. The economic base, particularly international trade, rests upon agriculture or primary products. However, this picture is changing fairly rapidly in regard to contribution to GNP, though not in employment by sector.

The economic, social, political, and educational situations of Peru are all bi-modal. There are strong but small elite groups in each of these areas which are progressive and active segments, but beyond these small segments the masses of the people are inactive, apathetic or deprived of such opportunities as do exist.

There are also notable deficiencies in many of the infrastructural prerequisites for development such as transportation, marketing, electricity, sewage, water and education. Many of these shortcomings are direct results of geophysical problems. Peru runs north and south in the southern tropic zone. The country is divided into three parts which run parallel and lengthwise to Peru in general: the narrow coastal plain which is extremely dry; the central mountains which are also relatively dry and which effect a nearly absolute division of Peru, and the central Amazonic jungle which makes up the largest physical area of Peru.

Figure 1: Physical Map of the Three Regions of Peru



Source: Cole, J. P., Latin America: An Economic and Social Geography, Butterworths, Washington, 1965, page 290.

For much of Peru's history the political climate has been less than conducive to economic or social development. The present government is committed to and the political climate is favorable to economic and social development, but in light of limited resources, certain decisions as to priorities are necessary. Because of this, the present rate of progress is less than many desire, but the efforts are genuine.

### Methodology and Procedure

The field work was done in Peru by an Ohio State University Agricultural Finance Center team which worked with the U.S. AID Mission to Peru, the Banco de Fomento Agropecuario del Peru, and the Servicio de Investigacion y Promocion Agraria. The Ohio State University team also collaborated with the respective USAID contract teams from the University of North Carolina, the Universities of Iowa, and the University of Michigan who were all working on agricultural problems in Peru. All of these agencies or institutions provided helpful direction and assistance, as well as serving as sources of basic information and data.

Beyond these agencies and institutions, three additional sources of information and data have been used.

1. Secondary materials of related problems and fields for background and apriori direction.
2. Empirical studies to acquire primary data about agricultural credit in Peru.
3. Informal observations by the researchers which afford additional insight into the problems in Peru.

Borrowers of the Banco de Fomento Agropecuario del Peru were surveyed to acquire primary data on all types of borrowers from all parts of Peru.<sup>2/</sup> Of special interest was the acquisition of samples of delinquent and non-delinquent borrowers. Each of the fieldmen of the BFAP was asked to administer ten schedules in his respective area. Five of these schedules were administered to the first five non-delinquent borrowers which he encountered in his normal work, and five schedules to the first five delinquent borrowers encountered in his normal work.

The sampling technique assured comprehensive geographic coverage of Peru, provided substantial samples of both delinquent and non-delinquent borrowers, and hopefully minimized sample bias. The timing of the study cut across both the harvest and marketing periods of most of the major crop enterprises so serious enterprise bias is not a problem.

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<sup>2/</sup> In all subsequent discussions the Banco de Fomento Agropecuario del Peru will be referred to as "BFAP."

The Chi-square test was used to test the study sample against the total farm population for farm size and geographic region. No significant difference is noted between the total farm population data available and the BFAP sample for these two points. The sample seems to be a valid reflection of the population as to farm size and region for two reasons. The BFAP is charged with servicing the small and medium farmers and not just the large commercial farmers. As a result the BFAP has achieved a clientel which is nearly a proportional reflection of the farm population in regard to farm size. Second, the BFAP fieldmen are assigned to the various regions of Peru in about the same proportions as the farmers are divided among the regions.

The sub-samples of delinquent and non-delinquent borrowers show slight variations from the population in regard to farm size but neither shows a significant difference. This can be attributed to the high degree of overlap between the two sub-samples in regard to the variable of farm size. However, when the question of enterprise is considered, the delinquent sub-sample shows significant variation from the population and from the non-delinquent sub-sample.

The distribution of the schedules to the field personnel was preceded by letters of introduction and statement of purposes of the study from the Planning Office of the BFAP. In June of 1966, the schedules were taken to the various branches and the purpose and the procedure were explained to the branch managers. The managers then handled the distribution and operation in their respective branches.

In total, 1100 schedules were distributed, of which approximately 800 were completed and returned by August 21, 1966. Of the 800 returned, 735 were deemed usable: 401 schedules of non-delinquent borrowers and 334 schedules of delinquent borrowers.

### Causal Factor Analysis

To test the general hypotheses, forty-eight variables have been selected from the field survey and treated as specific hypotheses. Each of these variables has been tested for association with or contribution to delinquency of agricultural credit, and those which are significantly associated with delinquency have been assigned to one of the three general sources or origins which are represented by the three sub-hypotheses above. These variables are quite divergent in type and equally divergent in effect. They are all variables which can be found and studied at the micro or borrower level and, while some may not be causal factors of delinquency in themselves, many serve as indicators of other delinquency causal factors.<sup>3/</sup>

Chi-square tests between the distributions for delinquent and non-delinquent borrowers and among sub-groups of delinquent borrowers were used to establish which variables show significant differences among the groups and which, as a result, appear to be associated with delinquency.

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<sup>3/</sup> The full list of the 48 variables is presented as Appendix A with their respective Chi-square values.

The Chi-square test is the primary device employed to identify significant factors associated with delinquency. However, the authors also considered the actual distributions for the various groups for each factor, along with external factors of which the authors were aware, but which the test could not take into account.

#### IDENTIFYING FACTORS WHICH CAUSE LOAN DELINQUENCY AND CREDIT FAILURE AND THEIR SOURCES OF ORIGIN

Within this section, causal factors of delinquency will be identified through the comparison of the delinquent and non-delinquent borrower groups and of the delinquent subset groups. Upon establishment of the factors, each will then be assigned to one of the three major source areas.

##### Comparison of the Delinquent and Non-Delinquent Groups for Causal Factors

The first step in the identification of causal factors is a comparison and contrast of the delinquent borrowers with the non-delinquent borrowers. Chi-square tests of significance have been run on all of the listed variables. Based on these tests, twenty-six of the forty-eight variables were found to be significant at the twenty percent level. These variables are assigned to three groups. Group one includes those factors found to be significant at the five percent level; group two, between five and ten percent; group three, between ten and twenty percent. These groupings are presented in Table 1.

The listing of variables in Table 1 is for identification of possible causal factors of delinquency. While the variables are listed in general groupings based upon the Chi-square level of significance, this does not mean that all variables in each group are of equal significance, nor is there any ordinal ranking within the groups. The reason for avoiding any specific attempt to achieve an ordinal ranking of significance is that many of these variables are affected by external factors which may have biased the Chi-square test results. Therefore, this list and the groupings are only indicators for further analysis in this report. And the levels of significance must be viewed as general at best.

##### Comparison of the Delinquent Subsets for Causal Factors

The same technique of analysis which has been used to compare and contrast the two groups, delinquent and non-delinquent borrowers, has also been used to compare and contrast subsets of delinquent borrowers. Three subsets, based upon the period of time for which loans had been delinquent were established. The first subset (one day to three months) constitutes short-term delinquency; the second subset (three months to one year) constitutes medium-term delinquency; and the third subset (more than one year) constitutes long-term delinquency.

TABLE 1

Variables Identified as Significant Through Chi-Square Tests  
Delinquent and Non-Delinquent Borrower Groups

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Variables \*

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At Five Percent

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The year loan was granted  
Age of the borrower  
Number of BFAP loans in past three years  
Total income  
Savings account  
Climatic problems  
Adequacy of water  
Farm appraisal by fieldman  
Interest rate of the loan  
Borrower's place of residency  
Unexpected expenses during 1965-1966  
Off-farm employment  
Estimated potential of unused land  
Other loans besides BFAP loan  
Use of veterinary products  
Use of supplemental feeds  
Part of income goes to family  
Administer farm directly

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Between Five and Ten Percent

---

Distance to major road (kilometers)  
Primary source of information  
Type of tenancy  
Use of fertilizer and type  
Adequacy of rainfall

---

Between Ten and Twenty Percent

---

Amounts of other debts  
Distance from BFAP (hours)  
Objective of the loan

---

\* The variables in this table are not in any ordinal ranking, but rather as groups in which each variable was found to be significant at the level specified with the Chi-square test.

Many of the variables which were found to be significant in the comparison of the delinquent and non-delinquent groups are also noted in the comparison of the delinquent subsets. The relationship between short-term delinquents and long-term delinquents is the same in every case as the relationship between non-delinquent borrowers and delinquent borrowers; the only difference is in degree. The variables which were found to show a significant difference among subsets of delinquent borrowers are presented in Table 2.

Two additional points were noted in the subset analysis which have not been previously mentioned since they apply only to delinquent borrowers. The first is the geographic area of the borrower.

TABLE 2

Variables Identified as Significant Through Chi-Square Tests of Delinquent Subset Groups

Variables *
At Five Percent Level
Total income
Climatic problems
Adequacy of water
Off-farm employment
First source of agricultural information
Use and type of fertilizer used
Rainfall
Objective of loan
Between Five and Ten Percent
Other credit
How title acquired
Years working on farm
Between Ten and Twenty Percent
Other debts

\* The variables in this table are not in any ordinal ranking, but rather as groups in which each variable was found to be significant at the level specified with the Chi-square test.

Twenty-two percent of the short term delinquents are found in the Sierra while fifty-two percent of the long-term delinquents are found in the Sierra. This indicates that delinquency in this region is more likely to become long-term and chronic than in the other geographic areas due to the unique situation of the Sierra.

The second additional point is the BFAP fieldmen's opinions of the most important single reason for delinquency. A summary of their stated opinions is shown in Table 5. Upon review of these responses, it becomes evident that several of the reasons stated are closely related and might be grouped into three major categories: production problems, management problems, and general external problems.

#### A. Production Problems

1. poor crop
2. lack of water
3. climatic problems
4. diseases
5. lack of labor
6. poor land

A production problem was reported as the most important reason for delinquency by 60 percent of the total delinquent group; 51 percent of the short-term and 71 percent of the long-term groups.

#### B. Management Problems

1. poor management
2. other debts

A management problem was reported as the most important reason for delinquency by 15 percent of the total delinquent group; only 5 percent of the short-term, but 21 percent of the long-term groups.

#### C. General External Problems

1. crop not sold
2. sickness in the family
3. low prices
4. death of the borrower

An external problem was reported as the most important reason for delinquency by 21 percent of the total delinquent group; 44 percent of the short-term and 8 percent of the long-term groups.

Any attempt to assign the above noted reasons for delinquency to classes is quite subjective. An example is the assignment of climatic problems and disease problems to the class, production problems. These could very well be management problems, that is, failure to apply pesticides or use of other techniques which are in the realm of management. Even so, the groupings can assist in pointing out the more relevant factors of delinquency when considered with the other findings.

TABLE 3

BFAP Fieldmen's Opinions as to Most Important Single Reason  
Why Borrowers Did Not Repay Loans,  
by Term of Delinquency

Opinion	Number of Borrowers By Groups Per Major Reason			Percentage of Groups Per Major Reason		
	Total Group	Short Term Group	Long Term Group	Total De- linquent	Short Term Group	Long Term Group
Poor crop	61	19	22	18.3	23	16
Poor management	50	3	29	15.0	3.5	21
Lack of water	46	10	17	13.8	13	13
Crop not sold	38	30	0	11.4	36.6	0
Climatic problems (drought, frost, wind, and hail)	55	6	38	16.5	7.3	22.8
Diseases	30	3	15	9.0	3.7	11
a) crop	(21)	(2)	(12)	(6.3)	(2.4)	(8.9)
b) animal	(9)	(1)	(3)	(2.8)	(1.2)	(2.2)
Sickness in the family	17	2	8	5.1	2.4	6
Low prices	14	4	3	4.2	4.9	2.2
Lack of labor	6	3	2	1.8	3.7	1.5
Other debts	4	1	0	1.2	1.2	0
Death of borrower	4	1	1	1.2	1.2	.7
Poor land	3	0	2	.9	0	1.5
No response	8	0	0	2.4	0	0

Selected results of the two analyses (delinquent--non-delinquent and delinquent subset) are presented in Table 4. Percentage distributions of fourteen selected variables are shown for the non-delinquent borrowers, the total delinquent group, and two of the subsets of delinquent borrowers: long-term delinquents and short-term delinquents.

TABLE 4

Percentage Distributions of Selected Factor Responses for  
Non-Delinquent, Delinquent, Short-Term Delinquent and  
Long-Term Delinquent Borrower Groups

(1.) <u>Variable</u> and  (a.) <u>Response</u>	Percentage of Various Groups Per Response			
	Non-De linquent	De- linquent	Short Term De- linquency	Long Term De- linquency
1. Borrower's tenancy				
a. own	66	63	67	54
b. rent	28	31	23	26
2. Does the borrower live on his own farm?				
a. yes	72	60	66	56
3. Does the borrower administer his farm directly?				
a. yes	95	92	97	90
4. How did the borrower acquire title to his farm?				
a. purchased	57	52	50	23
b. rented	20	23	23	26
c. inherited	15	24	22	33
5. Adequacy of water				
a. sufficient	54	37	65	38
6. Does borrower use fertilizer and type?				
a. yes	72	67	70	55
b. chemical fertilizer	58	48	55	40
7. Primary source of agricultural information				
a. BFAP and/or SIPA	44	37	50	39
8. Did borrower have unexpected expenses in 1965-66 production period?				
a. yes	40	52	48	51
9. Capital assets				
a. have a tractor	20	13	17	8
b. have a truck	12	7	10	6
10. Borrower's total income for 1965-66 production period				
a. over S./ 25,000	82	76	74	59
11. Does the borrower have a savings account?				
a. yes	29	12	13	11
12. Does borrower have other debts and level?				
a. yes	20	29	17	25
b. over S./ 25,000	8	9	0	10
13. Is there adequate rainfall in the borrower's area for production?				
a. yes	39	31	50	32
14. Does borrower have climatic problems?				
a. yes	63	74	71	78

## SOURCES OF THE FACTORS OF DELINQUENCY

The factors which have been identified in the preceding section as being associated with delinquency can be further analyzed by separating them into groups as to the factors' source or origin. These groupings consist of those factors originating with the borrower, with the lending institution, and with the general environment.

### Source One: The Borrower

The borrower is the pivotal point for the success or failure of most agricultural loans. While the borrower may be limited by many external conditions, his method of operation in light of the conditions will dictate the degree of credit success. Since the "man" factor is a major determinant of credit success, it follows that it is also a major determinant of credit delinquency.

The previous section identified many factors associated with delinquency which are directly related to the borrower. These factors indicate three general problem areas: the borrower's resource package, the borrower's managerial ability, and the borrower's attitudes. There are several factors which can be identified with more than one of the general problem areas, and the general areas overlap somewhat, but these three are sufficiently unique to warrant separate consideration.

#### The Borrower's Resource Package:

The factors related to the borrower's resource package which were found to be associated with delinquency are:

1. farm value (considering both the farm appraisal by the borrower and by the BFAP fieldman),
2. total income for the 1964-1965 production period,
3. type of tenancy, and
4. location of farm in the three geographic areas of Peru.

Two other factors which were not found to be significant with the tests used but which do show some difference between delinquent and non-delinquent borrowers are:

1. level of capital assets and power source, and
2. ownership of a truck.

The value of the average delinquent borrower's farm tends to be slightly less than does the farm of the non-delinquent borrower. This difference is very slight when the borrower appraisals are considered. However, assuming that the BFAP fieldmen made somewhat more objective appraisals, this difference becomes more significant. The non-delinquent borrowers tend to have a higher capital asset level and proportionately more own trucks than do delinquent borrowers.

More non-delinquent borrowers own their farms while more delinquent borrowers are renters. The additional commitment of rent payments in cash or kind often lessens the borrower's ability to service his loans in Peru because a majority of borrowers have an extremely narrow margin of returns above subsistence needs. It is also noted that more delinquent borrowers are found in the Sierra where productivity is lower than in the Costa and where fewer enterprise alternatives are available to farmers, especially for cash type enterprises.

This lower farm value, cash expense for rent, lower level of capital assets, and lower productivity are all reflected in the borrower's income level which in general is lower for the delinquent borrowers. Since the difference in income is found to be much more significant than is the difference in loan amounts for the two groups, income seems to be an important factor of delinquency. Income has been found to be a function of the resource package components, so the resource package is also a factor of credit success or delinquency.

This conclusion must be qualified because the overlap of the delinquent and non-delinquent groups for each of the above factors is substantial. Although a good resource package will afford a better chance of success and lessen the likelihood of delinquency in the use of credit, it is only the base upon which the borrower's operation is built.

#### The Borrower's Managerial Ability:

The borrower's managerial ability dictates to a high degree what a given borrower will be able to accomplish with a given resource package. There are several factors which were found to be significantly different between delinquent and non-delinquent borrowers and which seem to be indicators of managerial ability. They are:

1. number of BFAP loans in the past three years,
2. savings accounts,
3. value of the farm (comparing appraisals of fieldmen with borrowers),
4. borrower's place of residency,
5. unexpected expenses in the 1965-1966 production period,
6. off-farm employment,
7. other credit and the amount of other debts,
8. use of veterinary products and of supplemental feeds,
9. administer farm directly,
10. primary source of agricultural information,
11. type of tenancy and title acquisition,
12. use of fertilizer and type used,
13. objective of the loan,
14. irrigation, and
15. the borrower's educational level.

Proportionately more non-delinquent borrowers use fertilizer and more use chemical or commercial fertilizers than do delinquent borrowers. More non-delinquents use veterinary products and supplemental feeds in

livestock operations than do delinquent borrowers. The one indicator which seems to be alien to the general trend is the use of pesticides. Proportionately more delinquent borrowers use pesticides than do the non-delinquent borrowers. The reason for this is not clear from the survey since pesticide types, use, and amounts were not noted, nor is it clear what need of pesticides there is in the different areas of Peru. At this point, the question of pesticides can only be noted but interpretation must await further study.

A higher percentage of non-delinquent borrowers have tractors and own trucks than do delinquent borrowers. In regard to irrigation, proportionately more delinquent borrowers have some access to an irrigation system, but in spite of this, proportionately more delinquent borrowers lack adequate water regardless of the irrigation. This indicates that the systems are marginal or not properly used to derive the benefits of irrigation.

Relatively more non-delinquents are living on their farms than are delinquent borrowers. While both groups are about equal proportionately as to the question of direct administration, it points out that those farmers who live on the farm administer their farms more effectively than those who do not live on their farms.

The question of off-farm employment is closely associated with on-farm living and direct administration. The analysis shows that a higher percentage of delinquent farmers have off-farm employment. This can lead to several interpretations. It might indicate that the farm is not sufficiently productive to support the borrower and his family, which parallels the resource package analysis. It could also indicate that the borrower is preoccupied with an off-farm job and thus gives only secondary attention to the farm. This closely follows the common belief that absentee ownership arrangements in Latin America are unproductive.

The educational level of the delinquent borrowers is, on the average, higher than that of the non-delinquent borrowers. This is the reverse of the authors' expectations since education is an indicator of managerial ability. However, when the off-farm employed group was removed from the delinquent borrower sample, the remaining delinquent borrowers were found to have a slightly lower educational level than the non-delinquent group. This fortifies the belief that the off-farm employed group gives only secondary attention to their farms.

The delinquent borrowers seem to have less awareness of their farms and farm potentials. Not only do fewer delinquent borrowers live on their farms and relatively more have off-farm interests, but in comparing the delinquent borrowers' farm appraisals with the BFAP fieldmen's appraisals, the delinquent borrowers tend to overestimate their farms' value more often and to a larger degree than do non-delinquent borrowers. They also feel their farms have a greater unused potential. This is a possibility, but knowledge of their overestimation of farm value would indicate a high likelihood of overestimation of unused potential as well.

With respect to the method of acquisition of the farm, proportionately more delinquent borrowers inherited or rented their farms while more non-delinquent borrowers purchased their farms. The inheritance method of acquisition coupled with off-farm employment and seemingly lower awareness of farm value indicates, again, less interest and less agricultural orientation of delinquent borrowers.

The number of loans the borrower has had in the past three years would seem to be an indicator of the borrower's credit knowledge and experience. While delinquent borrowers have had significantly fewer loans, on the average, this consideration is biased by the fact that the BFAP does not, as a rule, give new loans to delinquent borrowers. Regardless of this, when the objectives of delinquent loans are considered, credit experience and agricultural experience seem to be lower for delinquent borrowers. An Agency for International Development assistant pointed out that many of the Sierra farmers continue to try various crop enterprises with only a one in four or five chance of success. This problem can only be partially laid at the feet of the borrowers since the BFAP should not grant loans for enterprises which cannot be expected to be successful. It does add further credence to the belief that the delinquent borrowers have less realized managerial and technical ability.

There are two prime sources of agricultural information in Peru: the extension service (SIPA) and the BFAP. The survey shows that relatively more non-delinquent than delinquent borrowers use these two sources. This indicates either a lack of interest on the part of delinquent borrowers for better information, or less awareness of the value of this information. Either way the delinquent borrowers again appear to have less managerial ability in regard to agriculture and the use of agricultural credit. The question of unexpected expenses need not be a managerial problem unless the expense was the result of a management mistake or oversight, such as forgetting to irrigate or to apply fertilizer. However, the study shows that significantly more delinquent borrowers had unexpected expenses and it seems likely that some of these are the result of management shortcomings.

The study also shows a higher percentage of the non-delinquent than delinquent borrowers have savings accounts. A savings account or some cash reserve is a method of guarding against unexpected expenses. The fact that relatively fewer delinquent borrowers have savings accounts demonstrates that the delinquent borrowers have shown less foresight in guarding against unexpected expenses; hence, less managerial ability. It could also be a reflection of the lower income level of delinquent borrowers.

Relatively more delinquent borrowers have used other sources of credit and have larger external debts. These debts place additional demands upon the farmers' revenues and in some cases indicate over-extension of their resources through the assumption of the external debts.

As with the resource package interpretation, the managerial ability factor distributions for the delinquent and non-delinquent borrower groups show considerable overlap. Each of these factors can be used as indicators, but still no clear cut definition between delinquent and non-delinquent borrowers can be shown.

### The Borrower's Attitudes

In analyzing the data for delinquent borrowers it was noted that in some cases the borrower did not repay his loan even though he had sufficient income to meet the obligation. In several of these cases much of the income came from off-farm sources. This may indicate that these borrowers felt no responsibility to use alternative sources of income to repay loans which were not self liquidating.

Almost all of this group of borrowers live off the farm, have off-farm employment and to a large degree inherited the farm. These points coupled with their failure to meet their credit obligation may indicate that they have a negative attitude. Simmons has noted such an attitude in the mestizo culture of Peru which he calls comechado.<sup>4/</sup>

The concept of comechado which Simmons describes can be literally translated as "eating lying down." That is, a comechado is someone who is parasitic or extractive and enjoys the benefits of something such as a farm but prefers not to be involved with the work or responsibilities of it. The group that Simmons describes as comechados seem very similar to the group of chronic delinquents who have not repaid their loans even though they had the ability to repay.

While this is a very subjective and delicate subject, it could be a problem affecting agricultural credit. It also might become a very serious problem for the BFAP if borrowers, in general, started to view the government sponsored BFAP as a giver of gifts rather than as an extender of credit.

Factors which arise at the borrower level and over which the borrower has no control have not been considered but include such factors as the death of the borrower or a family member, sickness of the borrower or within the family, and unexpected expenses which the borrower cannot guard against. These factors cannot be foreseen or avoided, cannot be eliminated as causes of delinquency and, therefore, will not be pursued further.

Delinquent borrowers as a group have smaller, less valuable, and less productive resource packages. Delinquent borrowers as a group also seem to be less adept at managing their resources and in using agricultural credit. In addition, at least a part of the delinquent borrowers have attitudes which are alien to credit usage. However, there is a considerable amount of overlap between delinquent and

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<sup>4/</sup> Simmons, O. G., "The Criollo Outlook in the Mestizo Culture of Coastal Peru," Contemporary Cultures and Societies of Latin America, ed. by D. B. Heath and R. N. Adams, New York, Random House, 1965.

non-delinquent borrowers with respect to the factors. Therefore, other factors originating with the lending institution or with the general environment contribute, individually or through interaction with factors at the borrowers' level, to delinquency and credit failure.

Source Two: The Lending Institution

Credit institutions are initiated for various reasons. Some of the more prevalent are profit, economic development and social development. While any combination of the objectives is feasible within a single credit institution, the resource needs--financial, physical, and personnel--and the operational procedures are dependent upon the institution's objectives. Likewise, the types of borrowers serviced by a credit institution will also depend upon the objectives of the institution.

A credit institution whose only motive is profit would be expected to lend only to proven borrowers or to low-risk borrowers who can furnish sufficient collateral to cover both the principle and the interest of their loans. In these cases very little loan supervision is necessary, so the costs of loan servicing are low and physical facilities and personnel needs of such institutions are lower.

When economic development is the objective, the borrowers are often of a higher risk category, as are the enterprises to be financed. This demands more supervision to assure success and future repayment, which in turn demands more resources of all types. When social development is added to economic development, as is the case for credit institutions in most developing countries, the borrowers and enterprises are usually even more marginal, economically. This increases the resource needs and brings about costs which are not only economic costs, but also include social costs.

The development of a credit institution as to resource needs, staffing, and operational procedures must consider the objectives of the institution in light of the environmental situation in which it must operate. Any evaluation of such an institution must also be made in the same light.

Factors Arising from the BFAP Affecting Delinquency of Agricultural Credit

The factors which were found to be associated with the problem of delinquency and which originate with or are aggravated by the lending institution are:

1. year the loan was granted,
2. objective of the loan,
3. farm appraisal,
4. duration of loan, and
5. mismanagement of the loan by the borrower.

These five factors indicate two general areas of weakness in the BFAP's operation. The first weakness seems to be a lack of sufficiently trained field personnel. The factors of loan objective, duration of the loan, and mismanagement are aggravated by the lack of experienced and trained personnel. The granting of loans for enterprises which have a chronic delinquency record in certain geographic areas is not an advisable policy. Also loan maturity dates set prior to, or too soon after harvest create marketing problems which contribute to delinquency. These causes for delinquency can be blamed at least in part on the inexperience of BFAP fieldmen.

Responsibility for loan mismanagement by the borrower must be laid at the feet of the borrower. However, it is possible that if experienced BFAP fieldmen had more time to assist the borrower in the initial stages of each loan, many such mismanagement problems could be alleviated.

The BFAP's improved delinquency record and the fact that many of the delinquent loans are several years old show the BFAP is making progress. This can be partially attributed to improved operational procedures, but this too has political overtones in that grace periods are often granted to borrowers in many areas which have been declared disaster areas by the government. The political situation has also dictated that the BFAP demonstrates a lenient attitude toward delinquency. In over 75 percent of the cases of delinquency studied, the BFAP has merely extended the loan or added the condition "to pay when possible." In less than 10 percent of the cases has any intervention by the BFAP been noted, and the BFAP brought legal action in only 3 percent of the delinquency cases. This attitude cannot be expected to promote prompt repayment. The issue is again clouded with political and social overtones, but such an attitude could have serious repercussions for the BFAP in the future.

In some cases loans exceeding the repayment capacity of the farm have been extended. These loans may be the result of insufficient trained field personnel in the BFAP. Situations such as this are especially prevalent in the Plan Costa credit program. While such loans have little chance of success there is the possibility that they have been extended under political and social rather than economic considerations.

The major problems of the BFAP seem to be a lack of trained field personnel and a conflict of interests between economic and social objectives brought on by the BFAP's political position. The officials of the BFAP are aware of these problems and have made attempts to remedy them. The attempts are on the whole directed at the first problem, the lack of field personnel, with the hope that additional field personnel could minimize the problems which arise due to the conflict of social and economic objectives. Two programs have been initiated; the first of these is called Ban-Sip and the second is the Supervised Credit Program of Plan Costa.

Ban-Sip was developed by the BFAP to provide additional technical and supervisory help for marginal borrowers. The plan is the result of an arrangement between the BFAP and the extension service of Peru

(SIPA) where the BFAP handles all credit services while SIPA provides the borrower with additional help beyond what the BFAP can afford him. The plan holds some promise for complementing the field personnel of the BFAP, as well as assisting the marginal borrower.

The extension service development plan, which includes a supervised credit program as a part of Plan Costa, has a somewhat similar structure to Ban-Sip in that it is an agreement between the BFAP and SIPA. However, this program divides the loan servicing responsibility between the BFAP and SIPA. SIPA grants the loan and provides the technical and supervisory assistance while the BFAP disburses and collects the loan. The division of the loan responsibility has proven to be a factor of delinquency. While the BFAP does sit on a board which reviews all loans to be granted, the political and social factors usually dictate acceptance of all loans presented. The money involved is a special fund previously noted as Fondo de Fideicomiso for which the BFAP feels no direct responsibility. As a result, the BFAP does not pursue collection of these loans and blames any delinquency upon SIPA, who, they say, granted bad loans. SIPA, in turn, says collection is not their responsibility. Hence, delinquency often occurs because neither institution takes direct responsibility for collection of the loans. The issues are neither as simple nor as clear as presented in this brief sketch, but the division of loan responsibility does seem to be a factor that can cause unnecessary delinquency.

### Source Three: The General Environment

Beyond the borrower and the lending institution there are many situations or factors which can cause credit system failure or credit delinquency. The area from which these situations and factors arise is herein designated as the general environment within which agricultural credit must operate. This general environment is further broken down into five component segments: the geophysical and climatic; the agricultural; the economic and infrastructural; the political and legal, and the social and cultural. While certain causal factors of delinquency associated with each of these component segments have been identified or indicated in the field survey, many of the observations and comments in this section are the result of information obtained through sources other than the field survey.

#### The Geophysical and Climatic Segment

The unique topography and climate of Peru place explicit limitations upon agriculture and the use of agricultural credit. One of the prime reasons for delinquency is crop failure due to climatic problems such as frost, drought, diseases, and flooding. These problems place limitations upon feasible types and yields of enterprises.

The topography of Peru is responsible for much of the climatic variation, but more serious is the effect of the topography on communications and transportation. The central mountain range isolates many farmers from money markets and separates the coastal region from the Selva region.

The climate dictates what enterprises are feasible and the topography dictates the areas of the country within which credit can be used effectively. Whenever these basic limitations are not adhered to, delinquency and credit failure is likely to result.

### The Agricultural Segment

Peru has a viable, commercial agricultural sector but the majority of the farmers are operating at or near subsistence levels. These subsistence farmers have little or no excess produce to market, use traditional techniques, are plagued with disease-ridden crops and livestock, and have limited land and capital bases for the economic use of credit.

The reluctance of the subsistence farmers to change from traditional techniques and crops is understandable in light of their precarious position where any failure could precipitate disaster. While the lack of sufficient land and capital limit the chances of producing a marketable excess, the lack of marketable excess precludes the use of credit.

Any increase of the arable land base in Peru is complicated by the high capital cost of bringing additional land into production. The inverse, or transfer of excess labor out of agriculture, is complicated by social implications and the lack of economic alternatives for such labor.

This situation greatly limits the number of potential agricultural credit users at this time, and any efforts to extend credit to these subsistence farmers without preliminary changes in their base of operations, techniques, and enterprises will result in credit failure and delinquency.

### The Economic and Infrastructural Segment

The economic segment includes all infrastructural and economic activities except agricultural production. Within this area the limitations of the infrastructure: transportation, communications, and marketing facilities, are the major sources of credit breakdown and delinquency. The lack of or limitations of transportation facilities isolate a large number of farmers from commercial markets. Even where transportation is available the costs are often prohibitive.

There is an almost complete lack of storage facilities for agricultural commodities and limited development of central markets. This results in seasonal gluts and extreme price fluctuations which in turn reduces the producer's income potential. The limitations of the marketing system are further complicated by poor market information and limited communication systems. This also limits the dissemination of technical information and slows technological change.

The economic sector is not producing necessary agricultural capital inputs at economically feasible prices at this time. The high cost of these inputs either completely negates their use or severely limits the number of farmers who can use them. Inputs, such as fertilizer, herbicides, pesticides and improved varieties could enhance production, income and the probability of enterprise success but the cost and, in some cases, the lack of availability has limited their use. Many of the loans to farmers purchasing such high cost inputs have failed or become delinquent.

The agricultural sector, particularly in its use of credit, is dependent upon the infrastructure and economy of the country. Any limitations within this broader structure also limit agricultural development and the use of agricultural credit.

### The Political and Legal Segment

The present Peruvian government is democratic and committed to total economic and social development. The constitution guarantees a free and competitive economy. However, priorities and political opinions seem to indicate a governmental bias toward the industrial sector of the economy. This governmental bias cannot be categorically denounced since it is the result of a genuine effort by the government to enhance development. However, there are resulting factors of legislation and other government policies and programs which negatively affect agriculture and agricultural credit.

The two basic interests of the Peruvian government, social and economic development, are reflected in many of the government sponsored programs and agencies. However, these two goals are not always perfect complements. Causal factors of delinquency in the use of agricultural credit may be in conflict with these goals. Such conflicts are found in the Banco de Fomento Agropecuario del Peru, in the extension services' Plan Costa, and in the agrarian reform program.

The BFAP is obligated to extend credit to small and medium sized farmers at lower interest rates than to large farmers. The problem is that many of the smaller farmers are not credit worthy, regardless of the interest rate that they pay, but social and political factors dictate such loans which often result in credit failure or delinquency. Another problem is that the larger farmers are being asked to subsidize a social arm of an economic institution through higher interest rates. This limits the capitalization and development potential of the larger farmers, as well as placing greater financial burdens upon these borrowers which in turn increases the risk of their becoming delinquent.

The extension service's Plan Costa is a regional economic and social development plan and is realizing a great deal of progress toward both of these goals. However, the overall plan includes a credit program which is referred to as a supervised credit program. This program has

been previously discussed in regard to its connections with the BFAP. Beyond the problem of division of responsibility outlined previously, it must also be noted that this program, in its attempt to give a capital base to Costa farmers, is extending loans whose repayment schedules are higher than the cash flow of the farms, due to either too short a loan or insufficient repayment capacity. In cases such as these, repayment is impossible and delinquency must result.

The agrarian reform program is achieving a great deal of success in transferring titles and improving tenancy situations, but due to problems such as lack of funds, lack of arable land and to population pressures, many of the new farms resulting from the program are small and often uneconomic units. As a result, attempts to extend credit to these new farms have in many cases failed.

The Constitution of Peru recognizes the development of free trade, commerce, and industry to be desirable. However, it provides for emergency situations in that laws and/or presidential decrees can limit and regulate such free commerce and enterprise. At present there are three areas in which laws or decrees affect agriculture: speculation, food prices, and use of land. The laws regulating speculation are the result of World War II legislation. Laws number 10906 and 10551, which along with constitutional provisions, prohibit unjustified stoppage of any products or services of primary necessity. The major problem with these laws is not the intent, but rather the effect which results from their hazy wording and unclear interpretation. Because of the lack of clarity in wording and enforcement there is an almost complete lack of commodity speculation, storage development and central market development. Each of these points is vital to the development of commodity markets to stabilize prices, to insure commodity movement, and to avoid market gluts and scarcities. However, under present laws, both speculation and storage can be interpreted as illegal and thus market development and operations are inhibited. This in turn limits the marketing latitude of farmers, depresses their revenues, and affects credit usage.

Food prices can be governed under constitutional provisions and a 1964 law which permits the president, by decree, to lower food prices for 180 days. The provision of low cost food for people is socially desirable but there is no provision for reimbursing farmers for the lower prices they are forced to take during such periods, nor are there any provisions for lowering prices of agricultural inputs. As a result, farmers have been legislated into an acute price squeeze.

The legislation governing land use is found in articles 5 and 6 of the Peruvian law numbered 10551 which dictates that a certain percentage of all cultivated land must be dedicated to the production of food crops specified by the Ministry of Agriculture. It is possible that it is not economically feasible to produce these specified crops in all areas. This means that some farmers are forced into enterprises where there is little likelihood of success and the

use of credit for the production of such crops will lead to delinquency. However, failure to comply with this law can result in fines, imprisonment or expropriation of the land and products involved.<sup>5</sup>

Many of the problems noted here are unexpected repercussions of well-intended policies or programs. Nevertheless, these problems adversely affect the use of agricultural credit and must be carefully considered if improvement of the credit system and lower delinquency levels are to be achieved.

### The Social and Cultural Segment

Consideration of the Peruvian society and culture, the last segment of the general environment, is the most subjective area of consideration in this study. This area warrants consideration for two reasons. First, there is little empirical evidence available regarding the exact degree of social and cultural involvement in the performance of any institution; however, it is accepted that there is involvement. Second, this involvement has often been blamed for the failure of development attempts through such unfortunate statements as, "Those people are immoral, lazy, or crooked."

In cases in which this latter situation is found to prevail, no long term success of any project or institution can be expected. There is also a gross lack of understanding on the part of the developers, which can be as fatal to an institution as any other factor noted in this study.

The Peruvian culture and society has a rich and proud heritage. It is the seat of the oldest university in the Americas and has a strong educational heritage. However, Peru has traditionally been a bi-modal society with a small upper class and a large lower class. The upper class has been, until recently, the only group with access to education, and the values of this class dictated a philosophic orientation to all educational pursuits.

The rise of an emerging middle class in the recent past has also ushered in a rise of technically oriented education. However, there is still a lack of technically trained people in Peru to handle the technological needs of the rapidly developing economy.

Attempts to provide general education to the masses of Peru are hindered by three factors: the lack of interest by many of the people in the lower class; the lack of facilities and teachers; and the lack of opportunities in Peru for these lower class people.

Attitudes such as are embodied in Simmon's concept of comechados are unfruitful but are the result of the instability of much of Peru's history. Such attitudes can be expected to change with the improvement of opportunities and stability which are being achieved in Peru.

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<sup>5/</sup> Much of this information has been taken from an article by Fred L. Mann and Raul Munoz Cabrera; Price Policies, published by the Iowa Universities Mission in Lima, Peru, July 1966.

Changes in social and cultural attitudes, values, and mores are achieved only slowly. Efforts should be made to improve the cultural and social environment to be more receptive to the forces of development, but the projects and institutions involved in this development process must be compatible with the social and cultural values at the time of implementation and flexible enough to change with changes in social values over time.

Many of the problems presented in this section are unchangeable, while others can be modified. In either case, they must be considered and either eliminated or avoided before any credit institution can be expected to approach its optimal level of operation.

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### Summary and Conclusions

The text of this study and the analyses which have led to this final form have taken their direction from the general hypotheses and sub-hypotheses presented in the introduction. These were broad operational hypotheses because the breadth of the delinquency problem demanded such an operational base. All of these hypotheses are acceptable in their general sense.

Beyond acceptance of the general hypotheses, forty-eight variables have been tested as specific hypotheses in relation to delinquency and twenty-six have been found to be significantly associated with delinquency of agricultural credit in Peru. Some of these twenty-six variables can be justly assigned to each of the sub-hypotheses and confirm the two general hypotheses. Beyond this verification, the twenty-six significant variables afford insight into delinquency and serve as indicators of more general factors.

All of the specific factors tested, regardless of level of significance, demonstrated a high degree of overlap between delinquent and non-delinquent borrowers. The comparison of long-term delinquents and non-delinquents shows greater disparity in many cases but substantial overlap remains even in this comparison. However, when the specific factors which are related are grouped into composite factors the total picture becomes more clear.

Three basic composite factors affecting delinquency have been advanced at the borrower level. They are: the borrower's managerial ability, the borrower's resource package, and the borrower's attitudes. The interaction of these three composite factors determines the success of credit at the borrower level. The strength of each of these composite factors is dependent upon the individual factors of delinquency making up each of the composite groups.

Three composite factors are also noted within the lending institution: the resources of the institution, the objectives of the institution, and the operating procedures and performance of the institution.

When the general environment is considered, a much wider spectrum of factors becomes possible. However, the major composite factors of the general environment seem to be the agricultural situation, the general economic situation and infrastructure, the political attitudes and legal structure, the general physical environment, and the social attitudes and cultural structure.

The success of credit and the level of delinquency are the result of interaction between and among all of these composite factors, as well as with many of the individual factors of delinquency. All sectors must have some necessary level of compatibility and competency before the system can be expected to operate. The degree of operational efficiency is determined by the actual level above or below the necessary conditions of each sector. One weak sector component could offset several strong components or even a basically strong system. Figure 2 is a graphic attempt to represent the interaction concept of the credit system with the larger social, economic, and geophysical structure.

Each of the eleven composite factors which form the base of credit success in Figure 2 has been presented, but many only indirectly through consideration of the individual factors of delinquency and often in widely separated areas of the study. In order to tie these parts together each of the composite factors will be reconsidered here.

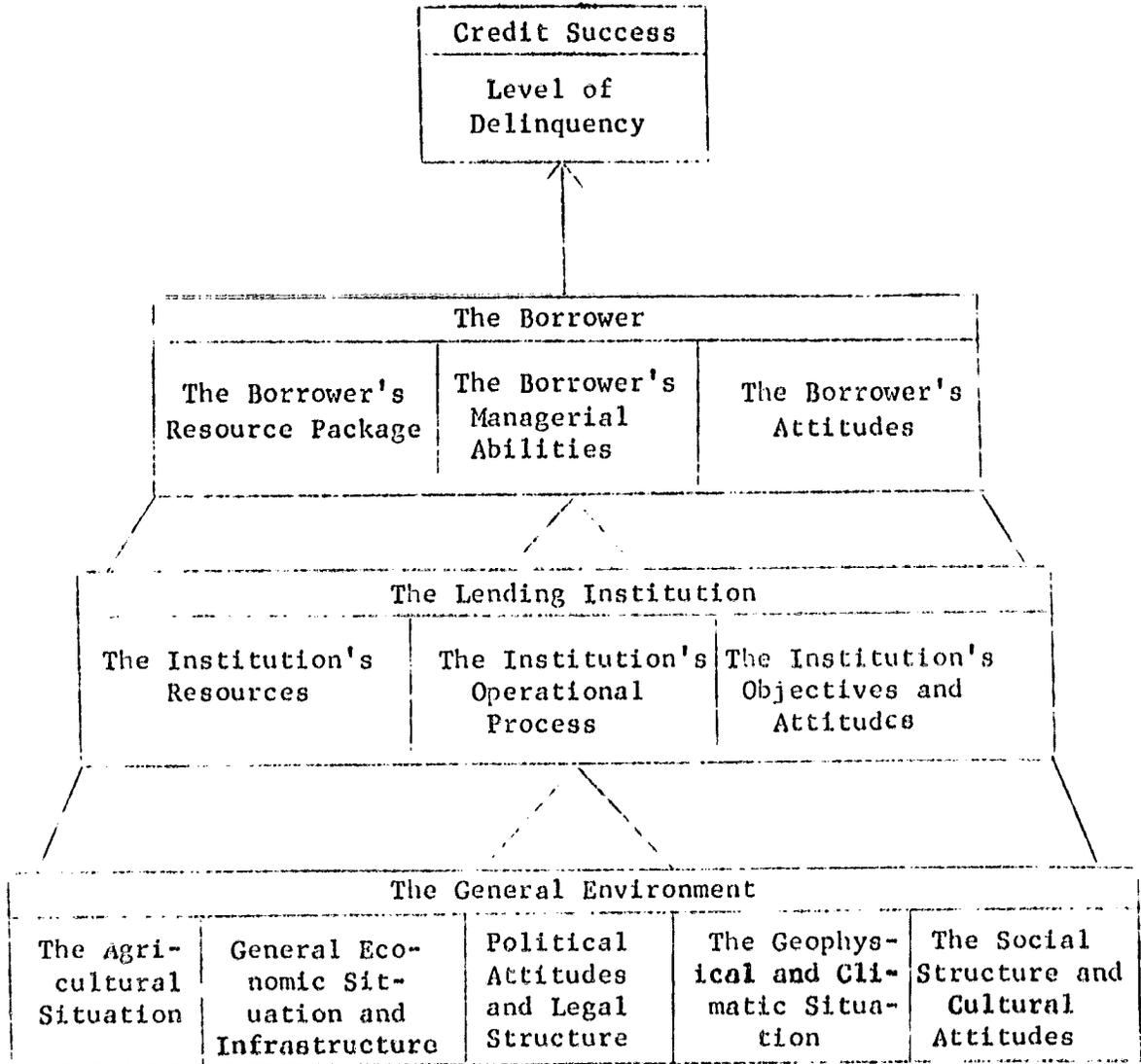
The average Peruvian farmer, and potential agricultural borrower, has a very limited resource package. The land-population pressures are becoming critical. Most of these farmers are operating at a near subsistence level and have very little chance of capitalization for improvement of the quality or quantity of their resource package. Because of the limitations of the resource package, most advanced techniques which require capital inputs are uneconomic at this time.

While this is the case for the average farmer in Peru, it has been noted in the study that delinquent agricultural borrowers have on the average smaller and/or poorer resource packages than do non-delinquent farmers. As the resource package is the borrower's base, the quality and quantity of the components which make up the resource package are definitely determinants of the borrower's ability to use agricultural credit successfully.

The borrower's potential managerial ability in Peru is subject to the availability of technology, of information, and of education. However, his realized managerial ability is dependent upon the use he makes of available technology in the operation of his resource unit. This realized managerial ability is the determinant of the degree of success or failure that the borrower will encounter in his operation and in his use of credit.

The modal level of education of agricultural borrowers in Peru is four years of elementary school. The quality of this education has been seriously questioned because of the lack of facilities and the lack of trained teachers. While many delinquent agricultural borrowers

Figure 2: The Interaction System for Credit



were found to be highly educated, the delinquency was not the result of the educational level. A definite correlation was found between education and income, and for the non-delinquents there is a positive correlation between education and technologies used.

Formal education is only one component which contributes to the borrower's managerial ability; practical experience and knowledge can be equally important. This seems particularly important in Peru and the analysis of the technologies used demonstrated a disparity between delinquent and non-delinquent borrowers in almost every case in regard to use of technology: that is, the non-delinquents use more and better technologies.

Consideration of the composite factor of the borrower's attitudes raises three major points. The marginal, subsistence farmer in Peru is understandably reluctant to change or try new techniques or varieties. His operation and his life are in precarious balance and as a result he exhibits great fear of the unknown. Such an attitude is understandable and no change can be expected until assurance can be given to the farmer that change will not precipitate disaster.

The second point deals with the philosophic orientation of many Peruvians which directs their interest away from agriculture or any other technical orientation. This is probably true for many of the better educated farmers who are delinquent even though their resource package, and potential managerial abilities are substantial.

The third point parallels what Simmons called comechado, the attitude of some Peruvians that anything from the government or a governmental agency is a gift and therefore they need not repay such grants or loans.

All of these attitudes demand modification or elimination before credit can be used in a normal sense of credit with any hope of success, and without delinquency.

In looking at the lending institution, it was determined that the BFAP has ample resources as to money capital or money capital access, sufficiently comprehensive coverage of the country in regard to offices and seemingly sufficient complementary facilities such as trucks and office equipment. However, the BFAP does have an acute shortage of trained personnel, especially at the field or loan supervisor and evaluation level. This shortage determines many of the operational procedures, but more importantly, it limits the time which a fieldman can devote to evaluating and servicing any loan. Thus, some unsound loans are made and other loans break down because of the inability of fieldmen to follow up the initial granting of the loan with the necessary supervision and servicing.

The Banco de Fomento Agropecuario del Peru's operational procedures reflect both the limits of trained personnel and the objectives of the BFAP. The lack of trained personnel can be partially blamed when the terms of a loan do not match the borrower's needs, whether in amount or time. This can be due to lack of time to properly evaluate the loan

application, or merely inexperience and lack of knowledge on the parts of both the fieldman and the loan applicant. Also the social objectives of the BFAP are such that some loans might be extended which are not economically sound. In the study of delinquent borrowers it was also noted that several loans received no servicing of any kind between the day they were granted and the day that they came due.

While these procedures, or the lack thereof, can be rationalized as being the result of a shortage of trained personnel and conflicts of objectives, the fact that they exist indicates that the BFAP is trying to do too much, too rapidly, and with too little. This returns the responsibility of at least some of the delinquent loans to the BFAP.

The question of how the objectives of the Banco de Fomento Agropecuario del Peru affect delinquency is not whether any of the BFAP's objectives are bad, but rather how they at times conflict and cause problems. The BFAP has two primary objectives: an economic objective of providing agricultural credit, and a social objective of assisting the development of small and medium sized farmers. The conflict arises here when loans are given to farmers who cannot economically qualify but receive the loan because of social reasons. This conflict is further complicated since these loans are extended under economic terms and conditions, even though the borrower cannot hope to comply with such terms.

The BFAP has been very lenient with delinquent borrowers and neither stigma nor concern over legal action are evident. This has resulted in borrowers being rather unconcerned about delinquency.

The general agricultural situation has been reflected in the consideration of the borrower's resource package and managerial ability. Beyond these reflections the land ownership and tenancy of land are problem areas in agriculture that affect credit. Absentee ownership of land has been noted as a factor contributing to delinquency. Because of absentee holdings, communal holdings, and the absolute scarcity of arable land in Peru, there is little opportunity for farmers to buy land or to increase their land holdings. Borrowers who buy their land are usually better credit risks for several reasons, the primary reason being that they receive the total return of the operation and usually demonstrate a greater interest in their farms.

Many of the present crop varieties and livestock breeds are low producing and very susceptible to diseases. This not only lowers the return per unit of production but also increases the risk of delinquency through enterprise failure.

The agricultural sector of Peru is bi-modal. There is a subsector involved in commercial and often export agriculture. This sector makes up only a small portion of the population involved in agriculture but the value of commercial agriculture is substantial, as is the influence of these commercial farmers in Peru. The other subsector makes up the majority of farmers in Peru, and is made up of subsistence or near subsistence farmers who have little voice

either at the market place or in the formation of national agricultural policies. This disparity creates a problem in itself since singular plans of action cannot be expected to serve the very different needs of the two groups.

The general economic situation and infrastructure affect agriculture both directly and indirectly. The basic infrastructural deficiencies such as transportation, marketing facilities, and basic communications affect agriculture directly and immediately. While the non-agricultural sector is expanding dynamically, it is not able to offer sufficient cash markets for many Peruvian agricultural products. An even greater consequence is that it does not offer sufficient alternative opportunities for the underemployed agricultural laborers of Peru.

The lack of transportation greatly limits the economic activity of Peruvian agriculture. Isolation keeps nearly 50 percent of the Peruvian farmers away from effective cash markets. Without cash markets, farmers cannot be viable users of credit. The lack of central markets, storage, and transportation all combine to further limit the revenue opportunities of the farmers. Lack of communications slows movement of products, as well as slowing the rate of technical change and economic progress.

The political attitudes of a country can be only subjective projections of observations and legislative clues. The result of such projections by the authors is that while the Peruvian government is sincerely committed to total economic and social development, at this time they are more interested with industrial development than with agricultural development. In some cases social development is being advanced without accompanying economic development and the result can only be failure in cases where desires and abilities are stimulated only to be destroyed by lack of opportunities.

Price ceilings on agricultural products without subsidies to cover the gap between product prices and input costs is an example of non-agricultural favoritism, whether implicitly or explicitly enacted for such an effect. The speculation laws, while well meant, are causing penalties upon both producers and consumers in Peru. Legislation controlling land use which require a set proportion of the land to be used for food crops, negates many economic as well as physical laws.

The geophysical and climatic situation puts fairly explicit parameters upon the enterprises which can economically be pursued in the various areas of Peru. Attempts to operate outside these parameters will result in sub-optimal levels of performance or in absolute failure. However, due to the present lack of transportation, of marketing facilities and of the opportunity to trade, many subsistence farmers are forced to do this very thing.

While blame for delinquency due to disregard of climatic conditions could be laid at the feet of either the borrower or the lender, part could be extended to the infrastructural system which has failed to give the borrower the opportunity to operate in any other manner.

The social structure and the cultural attitudes of Peru are reflected in the borrower and in the lending institution. Beyond this there are structural problems which are noted in the disparity of education, political power, and economic activity. These structural problems are the result of the historical evolution of the Peruvian social structure which has resulted in an apathy by the upper class for the lower classes. They have also kept many individuals of the lower classes from gaining the advantages of education and of political and economic awareness. This not only acts as a brake upon Peru's total development, but also affects the use of agricultural credit.

The present population pressures in certain areas of Peru which are affecting agriculture in these areas could be alleviated if the economy could offer economic alternatives and if the people involved would receive education and political and economic experience.

The basic conclusion of this analysis is that no institution nor any problem of an institution is ever completely isolated, nor a unique entity, rather it is a part of the total country, and a reflection of that country's problems. Any extreme weaknesses in the total structure are going to dampen the effect of an institution and accent its problems. Therefore, when a new institution is being planned, or an old one evaluated, or modified, due consideration must be given to the total interaction system in order to achieve the best possible results.

#### Recommendations

Many recommendations can be made which could be expected to reduce the delinquency level of agricultural credit in Peru if they could be carried out. The problem is to make realistic recommendations which are pertinent and feasible. The areas in which changes can be expected to make the greatest immediate effect are the lending institution and the legal structure. These two areas might be modified with a stroke of the pen.

The first group of recommendations is directed toward the BFAP.

1. They should modify certain operational procedures:
  - a. improve evaluation and feasibility considerations of loan applications,
  - b. improve and increase supervision of loans, and
  - c. take firm action in cases of chronic or unwarranted delinquency.
2. Avoid or modify any credit programs where the responsibility of granting and collecting loans is divided.
3. Increase the number of trained personnel at the field level.

4. Separate the social and economic objectives in the operation of the BFAP.
5. Social activities should not be subsidized by the economic activities of the BFAP.
6. Encourage the use of better varieties of crops and breeds of livestock by their borrowers.

The improvement of evaluation and feasibility considerations for loan applications prior to granting would minimize delinquency due to insufficient loan funds for the enterprise, over-extension of the borrower, too short a duration for completion of the loan purpose and unfeasible uses of loan funds due to limited resource package, climatic problems or other external factors.

The recommendation of increased supervision should not be thought of as initiating a so-called "supervised credit program" at least in the same light as such programs are often conceived in development plans. Many Peruvian farmers lack sufficient technical experience and awareness and need rather intensive assistance in their early attempts to use credit productively. All loans and borrowers need some degree of supervision but each loan and each borrower must be viewed as a unique case with unique supervisory needs. If the BFAP can view borrowers in this way and offer the supervision on an individual need basis, a built in flexibility will be achieved that can by natural processes move borrowers from high levels of supervision to lower levels.

Both of these recommendations demand more efficient use of field personnel and will probably demand additional trained field personnel. The use of plans such as the Ban-Sip program can complement the field personnel of the BFAP. However, the use of SIPA field personnel to assist with technical supervision should not eliminate an active role by the BFAP fieldmen in seeing that the loan terms are followed. The BFAP could start an intra-institutional training program independently or with the assistance of some external agency. Efforts should also be made to keep the fieldmen up-to-date with refresher short courses.

The recommendation to continue use of the Ban-Sip plan but to modify the Plan Costa credit program is because of the BFAP and extension service arrangements in each of these plans. The Ban-Sip plan does not divide the responsibility of loans but offers complementary supervisory and technical aid. The present Plan Costa program divides the loan responsibility. The division of responsibility greatly increases the likelihood of responsibility shifting in the case of delinquency. This same possibility exists for the Ban-Sip plan but in a lesser degree. It is for this reason that the BFAP fieldmen must maintain active loan servicing functions even when technical assistance is given by the extension service.

The separation of social and economic objectives should be achieved because of possible conflicts between the two types of activities. All credit should be extended upon sound economic principles. That is,

sufficient potential of economic credit usage must be a precondition to granting a loan. If the economic evaluation shows there is sufficient physical potential but an extreme lack of managerial ability, the high degree of supervision offered this borrower is a social input and it will achieve the social objective without negating economics in the process. However, this social input should be a social cost and not charged to an economic institution.

A reflection of this conflict between objectives is noted in the leniency of the BFAP with delinquent borrowers. The BFAP must take prompt and firm action in cases of chronic and unwarranted delinquency. This is necessary to maintain the image of the BFAP as an economic entity, and to improve borrowers' attitudes toward timely repayment.

The point of encouraging borrowers to use better varieties of crops and better suited breeds of livestock is being followed at this time. However, if the encouragement were given "teeth," such as a loan condition or loans in kind, this encouragement might have more effect. As with the supervision this point should be approached on an individual borrower basis and never as an absolute.

Beyond these recommendations for the BFAP, most of the recommendations are directed at the general environment. There are two groups of these general environmental recommendations; those which can be achieved easily and or directly without economic and social complications, and those which are general or have multiple complications. The first group includes:

1. modification and clarification of the laws which are presently inhibiting agriculture and are factors of delinquency,
  - a. speculation regulations,
  - b. food price regulations,
  - c. land use regulations,
2. development of more and better transportation facilities, and
3. development of better national communications for all types of information.

The clarification and modification of the laws which are presently inhibitors of agriculture activity should be the easiest to accomplish in an immediate sense. The effects of such action would come with subsequent development of storage facilities and with the reorientation of the farmers to their new situation.

The development of better transportation and communication is vital to Peru and to Peruvian agriculture. While such development is costly and time consuming, it can be achieved directly; that is, with the physical construction of such facilities. This development is a prerequisite for most of the other recommendations and should be given priority.

Beyond these areas, most of the recommendations are general. Although many are only indirectly related to agriculture and credit, the achievement of these points would improve the agricultural credit situation.

1. Efforts should be made to improve the quality and quantity of agricultural resources available to each agricultural worker:
  - a. encourage out-migration of under-employed agricultural workers,
  - b. open new lands to agriculture,
  - c. reclaim lands which have gone out of production,
  - d. improve and develop new irrigation systems, and
  - e. encourage farmer ownership of land and discourage unproductive absentee ownership of agricultural land.
2. Encourage the development of marketing facilities:
  - a. storage facilities,
  - b. processing facilities, and
  - c. central markets.
3. Encourage the development of industries which produce agricultural inputs, or provide import channels for such inputs.
4. Encourage the development of industries which use agricultural products or might employ excess agricultural labor.
5. Develop and encourage education in all areas of Peru and especially stress technical and agricultural schools.

The strengthening of the general environment, at which most of this latter discussion is pointed, will enable agricultural credit and agriculture in general to operate on a more secure base. Few recommendations can be given to borrowers directly. Those which are directed at changing the borrower or his position must be indirectly applied. This points out that a credit institution must be tailored to fit the borrower's needs at his present position but must be able to change as the borrower changes.

#### Limitations

There are several limitations which have resulted from inadequacies of data, study structure, and analytic limitations. However, the most serious limitation is lack of knowledge regarding the exact inter-

relationship between factors and the degree of interaction between the components of the total system.

At this point, many factors can be indicated as being pertinent in delinquency of agricultural credit but the optimum condition of each of these factors, and the optimum combination of these factors, cannot be ascertained. This knowledge would enable developers to place priorities on factor or component development and would enhance the efficiency of development significantly.

APPENDIX

Appendix: The Forty-Eight Variables from the BFAP Borrower Survey Tested for Significance in Association with Delinquency of Agricultural Credit and Chi-Square Values for the Twenty-Two Non-Significant Variables

- 1 Year the loan was granted
- 2 Age of the borrower
- 3 The number of BFAP loans in past three years
- 4 Total income for the 1964-1965 production period
- 5 Savings account
- 6 Climatic problems
- 7 Adequacy of water for production
- 8 Farm appraisal by the BFAP fieldman
- 9 Interest rate of the loan
- 10 Borrowers' place of residency
- 11 Unexpected expenses during the 1965-1966 production period
- 12 Off-farm employment
- 13 Estimated potential of unused land
- 14 Other loans besides BFAP loan
- 15 Use of veterinarian products or services
- 16 Use of supplement feeds
- 17 Part of income goes to the family
- 18 Administer farm directly
- 19 The distance from the farm to major roads in kilometers
- 20 Primary source of agricultural information
- 21 Type of tenancy

- 22 Use of fertilizer and type used
- 23 Adequacy of rainfall
- 24 Amounts of other debts
- 25 Distance to the BFAP office in hours
- 26 Objective of the loan
- 27 Distance to major markets in hours
- 28 Duration of the loan
- 29 Amount of the loan
- 30 Farm appraisal by the owner
- 31 The distance to major roads in hours
- 32 Animal assets
- 33 Acquisition of title
- 34 Size of the farm in hectares
- 35 Types of transportation used
- 36 The type of irrigation system as to ownership
- 37 Years working the farm
- 38 The number of separate plots over one kilometer apart
- 39 Secondary source of agricultural information
- 40 The borrower's level of education
- 41 Capital assets and power source
- 42 Race
- 43 Married
- 44 Use of pesticides
- 45 Member of some agricultural organization
- 46 Roads passable year around
- 47 Speak Spanish
- 48 Irrigation