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IMPROVING SMALL FARMER AGRICULTURE CREDIT  
PERFORMANCE - OPERATIONAL SUGGESTIONS  
AS PERCEIVED BY DONOR AGENCIES AND  
THEIR APPLICATION

A Project Report  
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by  
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c D. D. Bathrick, 1979

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## ABSTRACT

Much attention has recently been directed by donor assistance agencies to improve the performance of small farmer credit institutions. Most of their recommendations have applied to the role of credit and fiscal policy concerns. Little attention and few recommendations have been directed to operational considerations and the innovative new systems required to improve institutional performance and small farmer productivity. The purposes of this research are to (1) document what donor agencies have recommended, (2) demonstrate that additional research related to operational issues is required in order to more positively assist development institutions, and (3) examine the innovative operational features employed in one project as an effort to improve the scanty knowledge base related to credit institution operations and delivery systems.

The research is divided into three major sections. After a background statement related to the broad activities of donors and the expanded role of agricultural credit, a more detailed description of the experiences and recommendations provided by the Agency for International Development, World Bank, Food and Agricultural Organization, Inter-American Development Bank and the Rockefeller Foundation are presented. A comprehensive analysis of the many operational problems related to managing institutionalized small farmer credit programs is then provided. In

order to perceive the magnitude of operational considerations required if productive changes are to be observed by a significant number of small farmers, the application of some donor-suggested administrative and management considerations are examined within the context of an operational review of the "INVIERNO" Program in Nicaragua.

The research recommends that additional case studies be conducted from which a wider range of appropriate knowledge on innovative systems and models can be amassed. Such an activity will provide ideas to better assist the immense challenge confronting development professionals assigned to design and implement the innovative models required to foster increased agricultural productivity and rural development.

## BIOGRAPHICAL SKETCH

David Delos Bathrick was born in Seattle, Washington, on May 10, 1941. In 1964 he received his BA at Washington State University, and in 1970 his MA from Arizona State University. From 1965 to 1967 he was employed with the Department of Defense and served in the US Army. In 1967 he joined the Agency for International Development (AID) where he has since been employed. During the last ten year period he has been overseas working with government officials in Viet Nam, Peru, Bolivia, and Nicaragua in the design and implementation of rural development projects. AID sponsored his training at Cornell University where since September, 1978, he has been studying for an MPS in International Agriculture and Rural Development.

He is married to the former Elena Beingolea Barboza and they are parents of two sons.

Dedicated

To E.B.B. & D.D.B. & R.D.B.

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I.B.C.

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## CHAPTER I

### INTRODUCTION

Donor agencies have recently directed their attentions to improving the effectiveness of small farmer agricultural credit while at the same time providing greater financial resources to this activity. Accordingly, increased pressures have been placed on development institutions in lesser income countries to develop more appropriate management systems and acquire the trained personnel necessary to assure that a larger number of small farmers are effectively benefiting from this and related agricultural development services; i.e., extension, input supply, marketing, etc. As a result of donor reviews of their experiences, the traditional institutional models and concepts related to small farmer credit programs have been for the most part discarded. At the same time, few suggestions have been offered to replace the traditional approaches in order to positively assist credit institutions in the design, organization, administration, coordination, implementation and evaluation of the "new" operations systems required. Regrettably, there is little understanding of the innovative management and operational delivery systems required to deal with the complex number of constraints to development. The provision of these systems is one of the strongest management challenges facing development professionals.

Considering this deficiency, the broad purpose of this research is to provide development professionals and donor representatives with a primer on the operation of small farm credit programs. More specifically, I propose to: (1) present an overview of the current thinking concerning agricultural credit and development, (2) describe donor credit activities and their suggestions to improve operational performance, (3) illustrate the limited appreciation for and knowledge of operational considerations, and (4) develop an operations case study from which specific lessons may be learned. Given the limited research directed to the management and operation of agricultural development services, and the new priority directed to the often-times ignored small farmer sector, program directors and managers are in most instances setting out on a voyage with neither navigation equipment or map. Additional research such as this is required to assist them in expediting their voyage.

Since so little research (apart from what the donors have done) has been directed to the management of agricultural credit, to the maximum degree I have depended upon documents from the World Bank, Food and Agricultural Organization, Agency for International Development, Inter-American Development Bank, and Rockefeller Foundation. A detailed review of the 20 volume series from AID's "Spring Review on Small Farmer Credit" was made. The information generated for the case project from Nicaragua depended largely on project documentation which I have

translated, and my personal association with the project over a two year period.

The research first examines the increasingly complex role assigned to agricultural credit when provided to the small farmer and includes a justification for concentrating development resources on the small farm sector. The subsequent two chapters discuss the credit experience and operational suggestions of the donor agencies. Chapter V documents the many complexities peculiar to operating credit institutions for the small farm sector and the limited research directed to improve operations. And lastly, a case study description of all major operational aspects of an innovative integrated rural development program are studied.

It should not be inferred that "INVIERNO," the Nicaraguan project chosen for study, be held as a model of how integrated agricultural development should be conducted. Though indeed there are some lessons to be learned, the project was chosen for the innovative operational and management systems developed, high level of professionalism among its personnel and the good rural poor target focus as identified by outside evaluators. Ideally it is one project which could be compared with others, however since no detailed operational reviews of this type have been yet located, for the moment it must stand alone.

Also as I concentrate mainly on the operational systems developed during the first two years of project operation, for purposes of this research, no discussion is required concerning

the political and economic crisis presently confronting the country.

## CHAPTER II

### AGRICULTURAL CREDIT AND SMALL FARMER DEVELOPMENT

Whether viewed in the context of prevailing food grain shortages, or of the concern for the small farmer and the reduction of poverty among the rural poor, or of the new initiatives aimed at increasing the flow of investment for agricultural production in the developing countries--agricultural credit might be considered not just timely but of urgent concern.

William C. Baum  
World Bank

As will be observed, the total amounts of agricultural credit provided by donor agencies when compared with the amounts made available from national resources is relatively minor. However, since the donor agencies can provide data from "their" projects from which a great variety of experiences can be generated and compared, attention is directed to an overview of the donor activities. Their recent experiences and evaluations have resulted in considerable rethinking about the role of credit and how programs can be improved.

#### Overview of Donor Agency Agricultural Credit Lending and Evaluation Activities

Beginning in the 1950s, lesser-income countries and donor lending agencies such as the World Bank, the Inter-American Development Bank (IDB), and the Agency for International Development (AID) have, in varying degrees, directed their resources to the development and improvement of agricultural

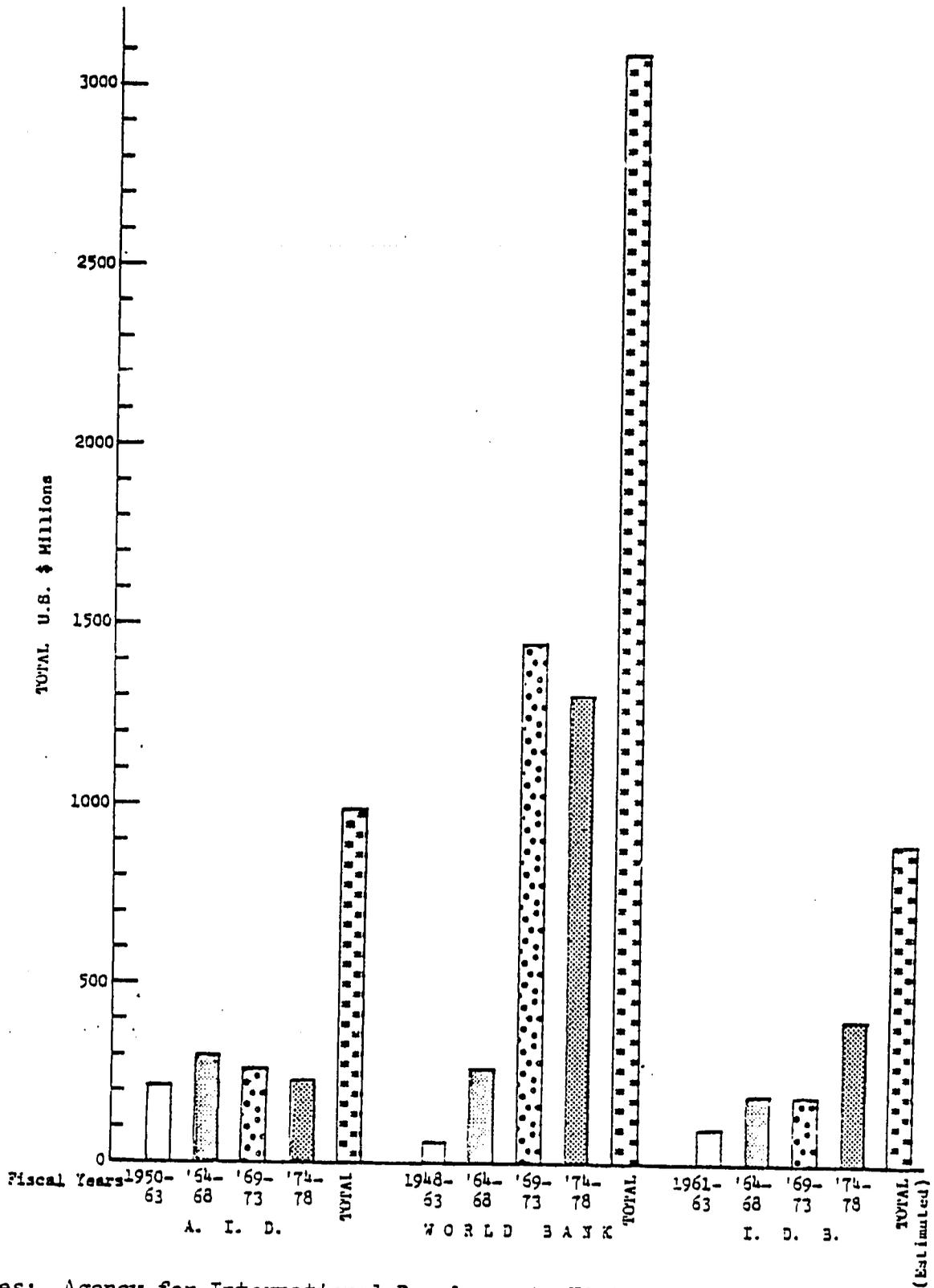
credit institutions as a means to improve the conditions of the traditional subsistence farmer. In addition, complementary resources have been provided by the United Nations Food and Agricultural Organization (FAO) and private foundations.

The World Bank has estimated the total outstanding amount for institutional agricultural credit lending for chartered banks and cooperative organizations (as opposed to informal non-institutional sources) in the developing world at approximately \$15,000 million (1, p. 5). Included within this amount is the estimated \$5,000 million that has been provided by the World Bank, IDB and AID, the principle agricultural credit lending agencies. Chart 1 illustrates the financial assistance provided during the last 30 year period by these three donors. The remaining \$10,000 million for credit has been supplied from national resources. In addition to the capital loaned from formal institutional sources, local informal lending by family, neighbors, and lenders accounts for five times the institutional lending, or approximately \$75,000 million (2, p. 2). Therefore of the total estimated \$90,000 million for agricultural credit, the donor contribution is relatively small, only about 5 percent of the total. However, this figure is significant because of its resource focus directed to the needs of the more marginal producers.\* As later, more detailed statements of donor agricultural credit activities will be provided, only brief comment is now made concerning recent evaluations and studies

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\*In this regard, as will later be observed, some donors have made a greater priority of this than others.

CHART 1. TOTAL AGRICULTURAL CREDIT CONTRIBUTIONS FROM PRINCIPLE DONORS\*



\*Sources: Agency for International Development, History of AID Program in Agricultural Credit (Volume XVIII, June 1975), p. 3; A.I.D., Agricultural Development Policy Paper (June 1978), p. 25; World Bank, Agricultural Credit Sector Policy Paper, May 1975, pp. 72 and 18; and InterAmerican Development Bank, Participation of the Bank in the Development of Agriculture in Latin America, 1977, pp. 25-26.

made by donor agencies to improve performance for the small farm sector.

In the late 1960s, it gradually became apparent that only in a few instances were large numbers of small farm subsistence producers participating in institutionalized credit systems. Increasingly, common characteristics such as the credit institution's inability to cover operating costs thus requiring subsidized support, and to recuperate large amounts of outstanding loans were reported (3). Resulting from the growing frequency of these problems and the increasing amounts of capital investments being programmed, donor institutions began to critically reflect on their experiences in order to determine the possible reasons for such spotty performance.

Beginning in 1973, AID initiated the most comprehensive evaluative review of agricultural credit yet undertaken by any institution. Sixty-three evaluations and studies were conducted of AID and non-AID funded agricultural credit programs in 36 countries\* which comprises the "largest collection of field studies ever assembled . . ." (4, p. 35) (referred to later as the "Spring Review"). Subsequently, between 1974-75, similar less-exhaustive reviews of the subject were undertaken by the World Bank (1), the FAO (6), and the Rockefeller Foundation (7). All reviews identified certain "policy issues" which national credit institutions and donors should consider in order to improve small farmer credit programs.

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\*The results of these evaluations and workshop sessions led to policy issue statements all of which were compiled in a 20 volume series (5).

Changing Perceptions Concerning  
Institutional Credit

Though in the 1950s limited amounts of agricultural credit began to be provided by donors to national institutions, small farmer development as a governmental priority was usually low. The prevailing growth-oriented development strategy programmed resources for major capital investments usually in urban areas or else to support the larger commercial export crop producers capable of generating hard currency for import commodity purchase.\* Except in the case of the Republic of China, and to a lesser degree South Korea, large numbers of small farmers were for the most part excluded from institutional credit programs (refer to table 1).

During the same period, economic planners tended to simplify the complexities of the developmental process by concentrating on credit as the limiting factor (8, p. 3). Traditionally, small farm credit programs had been justified in order to counteract the "usury" rates charged by the informal lenders. This practice was felt to be a principal constraint inhibiting development within the small farm sector. Accordingly, if only low interest credit could be provided through "competing" credit institutions, farmers would immediately adopt commercial production practices. Sizeable production increases would result in increased farm family income.

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\*A similar strategy was employed in the Nicaraguan case study.

TABLE 1.

FARMERS RECEIVING CREDIT FROM INSTITUTIONAL  
SOURCES, IN SELECTED COUNTRIES  
(Percentage of all farm families)

Country	Percentage
<b>Africa</b>	
Ethiopia	1
Ghana	1
Kenya	12
Morocco	10
Nigeria (Western)	1
Sudan	1
Tunisia	5
Uganda	3
<b>Asia</b>	
Bangladesh	15
China, Republic of (Taiwan)	95
India	20
Jordan	8
Korea, Republic of	40
Malaysia	2
Pakistan	5
Philippines	28
Sri Lanka	14
Thailand	7
Turkey	23
Viet-Nam, Republic of	21
<b>Latin America</b>	
Bolivia	5
Brazil	15
Chile	15
Colombia	30
Ecuador	18
Guatemala	2
Honduras	10
Mexico	15
Nicaragua	20
Panama	4
Paraguay	6
Peru	17

SOURCE: World Bank, Agricultural Credit Sector Policy Paper, May 1975, p. 71.

L. J. Walinsky summarizes this prevailing view (2, p. 145):

Farmers in the developing countries are generally hampered by high interest costs for short-term crop loans, usually from small-scale private money lenders, and by the almost complete lack of sources from which they can borrow the longer term loans they would need to purchase draft animals and equipment, upgrade their stock, reclaim acreage, execute soil conservation measures, build barns, and financing similar capital needs. High cost loans constitute a major charge against their current income from money lenders and depresses their living standard. The unavailability of longer-term credit prevents them from improving and expanding their output. Both limitations can be overcome by a well-designed agricultural credit program, at the core of which would be an agricultural bank.

The traditional "agricultural bank" model for dispersing credit to farmers has been relatively simple. Funding, provided by the government or an external agency to cover estimated productive-related investment activities for agricultural inputs, i.e., seed, fertilizer, pesticide, etc., and other production expenses is provided through the government's central bank for them to reloan to other commercial banks. More often, in the case of the small farmer, these funds are channeled through the country's agricultural development bank, a specially-created rural development agency or a cooperative. The institution(s) provides loans to producers for the purchase of usually short-term production inputs and/or medium or long-term farm investments from livestock purchases to equipment needs. These purchases, combined with the family labor and perhaps contracted labor needs, hopefully result in an increased output compared with traditional technologies. Marketed output should provide a sufficient amount to cover loan payments plus interest

charged, and provide sufficient incentive for the producer to repeat the operation. The interest charged by the bank should cover loan administration and supervision costs, inflation, loan defaults and the amount needed to repay the central bank, and thus perpetuate the fund.

Resulting from the above-mentioned donor-sponsored evaluations, two important mutually-related observations are made which have altered the "role" of credit and the "model" to administer credit for the small farmer: (1) Though credit (depending on the situation) can be of great importance, it is but one of many important development services that must be considered; and (2) The low interest rate structure for small farm lending, high administrative cost structure associated with supervision of small loans in remote areas, and cumbersome banking practices inappropriate to the particular needs of small farmers resulted in too few viable institutions serving large numbers of small producers.\* The role of credit had previously

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\*In order to perceive the formidable obstacles and impediments beyond those of the credit institutions operational control, in extending services, a comment from L. F. Miller is provided (7, p. 73):

"While it is true that some of their problems arise from the basic policies, organization and operation of the institutions themselves, other impediments are inherent in the economic and social conditions within which they must operate.

In the case of small farmer-borrowers especially, their resource base is severely limited, generally they have had meager, if any formal education, and they possess little understanding of the wise use of credit. The roads and transport facilities required for bringing in necessary supplies and services and to take produce to market often range from mediocre to non-existent. Weather, price and biological risks are high, and government policies may provide little income incentive. If the credit institution attempts to reach a significant number of farmers it finds

been over-simplified and the traditional "model" inappropriate for addressing the needs of large numbers of small producers. Favorable results, however, are possible according to the donor evaluations dependent upon (1) an available improved technology beyond the traditional technology levels which the small farmer will readily utilize; (2) the presence of feeder, farm-to-market road systems; (3) the availability of quality modern agricultural inputs when needed; (4) out-reach extension services qualified to assist these farmers; and (5) favorable marketing and storage services and facilities to respond to the increased production. When combined within a comprehensive program, agricultural credit for the small farmer can be an important accelerator element (5, vol. XX, pp. 16-21; 1, pp. 31-35).

#### Small Farmer Emphasis -- Why?

The dramatically increased interest by lesser-income countries and donor agencies in rural development during the past ten to 15 years evolves in part from recent rethinking regarding development strategies, combined with the growing concern for increased food production.

Firstly, the anticipated "trickles" that were to be distributed to the lower economic groupings of these countries

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itself dealing with a very large number of individuals scattered over a wide geographic area, which hampers communication, inhibits timely action and limits the amount of effective supervision that can be provided. In short, most, if not all the economic, social, and political difficulties that have retarded agricultural development also hinder private or government credit institutions attempting to serve small farmers.

that pursued massive capital investment "economic growth" development strategies undertaken in the 1950s and 1960s were, in most examples, too insignificant to measure. This was particularly so in the rural sector where usually only a small number of export-commodity producers received financial assistance from credit institutions. The practice tended to perpetuate a "dualistic" agricultural sector composed of a small number of prospering "modern" commercial producers while the much larger "traditional" subsistence farmer received little benefit.\* The prevailing development strategy helped to spark a large migration to urban areas (where gainful employment was seldom obtained), which required massive government "urbanization" infrastructure investments.

Many viewed with optimism the introduction of the "green revolution" technologies as this would provide an "unparalleled opportunity to break the chains of rural poverty" (10, p. 264). It was thought that the introduction of these new technologies for use by the small producer might serve as the catalytic element to stimulate a dramatically improved rural and national economy. Resulting from the studies of agricultural development originally documented in Japan and the Republic of China, and later in most other countries, it became generally accepted that the small producer obtained more productive yields per hectare planted than those of the larger. Therefore, if the small holder could increase his productive capacity through the

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\*Similar to what will be observed in the Nicaraguan case study.

introduction of new technologies, this increased yield could hopefully be transferred into increased income, thus providing him with a greater purchasing power. An increased effective demand by a large number of small farmers would generate the need for increased goods and services at the village, particularly at the market-town level. Increased employment opportunities for all, including the non-farm rural-poor sector would be created, thus providing a more enduring basis for national development (11, pp. 10-14).

A growing concern for increased equity and employment generation through agricultural development received more attention than before. Resulting from the world fear of possible severe food shortages, many experts felt that given the greater productivity of the small farmer, he offered the best hope to (1) produce the basic food needs required by the lesser income countries and at the same time, (2) bring about increased national development (12, p. 37; 13, p. 143; 14; 15, p. 9).

S. Wortman provides a good summary of this view (16, pp. 35-36):

All of this [new technology] is aimed at generating the main ingredient for rural development: increased income for large numbers of farm families. Until their purchasing power is increased through on-farm or off-farm employment there can be no solution to the world food problem. Extending science-based, market oriented production systems to the rural masses can enable the developing countries to substantially expand their domestic markets for urban industry. As farm families attain larger disposable incomes through increased agricultural profits they can become buyers of goods and services, providing more jobs and higher incomes not only on farms but also in rural trading centers and in the cities. What I am suggesting, in other words, is that the improvement of agricultural productivity as the best route to economic advancement for the agrarian developing countries.

Donor agencies, particularly the World Bank, IDB and AID have committed their resources to the improvement of social and economic conditions of the world's small farmer. Within their lending portfolios, particular emphasis has been directed to credit as the instrument to facilitate this change. During the much acclaimed speech by Robert McNamara to the Board of Governors of the World Bank in 1973, he mentioned the role of agricultural credit as one important factor to facilitate small farmer participation in the use of the new high-yielding variety technologies. To quote McNamara (17):

The miracle of the Green Revolution may have arrived, but for the most part, the poor farmer has not been able to participate in it. He simply cannot afford to pay for the irrigation, the pesticide, the fertilizer. . . . For the small holder operating with virtually no capital, access to credit is crucial. No matter how knowledgeable or well motivated he may be without such credit he cannot buy improved seed, apply the necessary fertilizer and pesticide, rent equipment or develop his water resources. Small farmers generally spend less than 20% of what is required on such inputs because they simply do not have the resources.

In response to the development of new technologies, greater possibilities have been identified for agricultural credit. At the same time, donor agencies have identified a more complex role for agricultural credit including the provision of other comprehensive support services which must be considered if an improved economic and social condition within the rural sector can be observed (3 and 4). The traditional simplistic view that merely the provision of low-interest credit was the key to small farmer economic development had been rebuked. Consequently, the design and implementation of institutional credit programs has been made an exceedingly more complex

developmental undertaking requiring considerable emphasis in developing the special systems respectful of the limited human technical and managerial resources.

## CHAPTER III

### AGRICULTURAL CREDIT ACTIVITIES OF THE AGENCY FOR INTERNATIONAL DEVELOPMENT

As observed in chart 1, when compared with the World Bank and IDB, AID's total financial contributions are of lesser importance. However, because of AID's (1) much longer association with agricultural credit, (2) special attention to the small farmer which is "unique" among other donors (18, p. 50), and (3) extensive evaluative review of agricultural activities which served as a forerunner for other donor-conducted reviews, it is the first of the donor agencies to be studied.

#### Survey of Agricultural Credit Experiences

AID and its predecessor agencies have provided more than \$700 million to fund a variety of agricultural credit activities. Of this total, the actual U.S. dollar amount loaned was \$270 million. The remaining balance being either from U.S. dollar grants, or local currencies generated from commodity import programs. Since 1973, an additional \$275 million has been provided, making a total of around \$975 million extended as capital assistance for agricultural credit development. In addition, between 1950 and 1972 an estimated 900 person years of technical assistance was provided.

During the initial period of the 1950s, most countries had no institutions working with the small holder. Searching for appropriate institutional "models," there was great interest by both the developing countries and AID in introducing the supervised credit system developed by the United States Department of Agriculture's Farm Security Administration (FSA).<sup>\*</sup> Most of the early credit advisors sent overseas were from the FSA or its successor, the Farmers Home Administration (FmHA). This model was specifically promoted in Latin America, and to a lesser degree, to all other regions.<sup>\*\*</sup>

As designed in the U.S., the system provided eligible farmers with basic credit needs and necessary individualized supervision through the local county supervisor, usually a college graduate knowledgeable in agriculture. The farmer with supervisor assistance, was required to first prepare a detailed "farm and home plan." The security of the loan rested mainly on the prospects of a successful execution of this plan. The borrower was required to keep accurate business records and to cooperate with the supervisor in farm and home planning. An important element for a successful lending program depended on well-qualified, sufficiently-motivated supervisors.

Resulting from the preparatory technical assistance institutional development activities undertaken in the 1950s, an organizational structure was established from which larger

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<sup>\*</sup>For background information on this early institution building activity, refer to (126, p. 11-14).

<sup>\*\*</sup>As will be later discussed, this model was incorporated within the National Bank of Nicaragua system.

amounts of capital could be administered. During the 1950s, the capital assistance provided to agricultural credit averaged less than \$15 million per year whereas during the 1960 period, the average amount provided was above \$40 million. In the early 1970s to the present, figures have varied between \$30 and \$70 million averaging above \$40 million per year.

To better understand the impact of these expenditures and to identify possible problems, in 1964 AID awarded a contract to Ohio State University to evaluate their credit projects. From the 1968 report findings, it was clear that U.S. agricultural credit models could not be replicated and that credit to small producers was far more complicated than had originally been thought.

The report concluded that "institutional agricultural credit programs have not been notably successful, either in accomplishing developmental objectives or in meeting the minimum criteria of institutional viability" (3, p. 4).

Spring Review and Identification of Suggestions  
to Improve Operational Performance

Resulting from this report and subsequent analysis, AID determined in 1972 that a comprehensive "Spring Review" of their small farmer credit programs would be appropriate. To manage the numerous and diverse credit activities undertaken over a 25 year period, a preliminary evaluation based on a review of past activities was first initiated. Forty-two "Country Summary Reports" were completed describing the various activities undertaken in countries where agricultural credit

projects had been conducted. This general overview served as the basic reference from which the more intensive Spring Review was launched.\*

Briefly summarized, the overview showed that credit programs' performance to the small farmers was mixed, and where he had been well served, only a small number of producers were able to participate. The mere establishment of a credit institution or cooperative to provide credit was insufficient. Apart from the credit institution, there were numerous complex operational, economical, social, technical and political factors that had often times been glossed over in the design and implementation of these projects. The broader perspectives required to make more effective those programs was in most cases lacking and common traditional myths on structure and procedure prevailed (19, pp. 15-21).

Selected field staff, national agriculture credit officials, and contracted consultant experts, mainly from U.S. universities, were then employed to conduct a series of studies of specific AID and non-AID supported agricultural credit activities in selected countries. Beginning in March 1972, over 60 separate project evaluation reports from 37 countries, were developed. From these reports twenty-one "Analytical Papers" on specific themes were developed.

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\*This review also served to document that AID assisted in initiating small farmer credit programs in many countries where heretofore no institution was available, most of these programs had a small farm bias, and that other donors usually supported the AID-assisted agencies once well-established (126).

Though no one paper dealt exclusively with operational considerations, some authors touched briefly on institutional and operational topics listed below. In reviewing these papers, I have chosen to concentrate only on the generalized suggestions offered either to facilitate operational improvements or to assist in a better understanding of the problems associated with credit management.

### Institutional Forms

The conclusions by J. R. Brake (20) and M. P. Miracle (21) of the various types of institutional forms of credit institutions studied (from private rural banks and cooperatives, to national supervised credit agency and agrarian reform agencies) were that no one institutional system is the preferred model for extending credit (20, p. 3). However, in order to reduce the high costs associated with the administration and extension service costs of small farm credit, all of these forms could employ a group credit scheme (21, p. 1-3). Also, instead of providing agricultural extension on a traditional one-to-one basis, the credit group could receive extension services en-masse (20, p. 9).

Before the appropriate institutional model is designed, the particular needs, values, experiences, and leadership of both the credit institution(s) and small producers should be studied. Experiments could then be made testing the merits of each (21, p. 4).

This point is summarized by J. Brake (20, p. 13):

. . . a successful credit institution for delivery of small farmer credit in developing countries cannot be specified in advance. The country situation, its culture, the nature of society and existing institutions in the country all affect the receptivity and eventual success of a small farmer credit institution. Several institutional forms might be successful in any given country if they are well designed given the country's situation and the principles discussed.

Both papers were concerned with the many decision-making levels within the credit institutions which led to excess paper work, and worse, the untimely loan approvals and release of funds. The problem of untimely release of loan funds can best be addressed through decentralized decision-making or else by local suppliers providing credit in kind. Decentralization of loan decision-making should be extended to the lowest of operational levels. In addition, the typical "top-down" implementation of projects almost universally excluded clientele leadership participation in the national and regional directorship of credit institutions. Few organizations had good records of any attempt at client participation in policy-related matters (20, pp. 7-9).

### Personnel

Brake was also concerned about the quality of personnel working in the rural areas and their limited ability to relate with small farmer participants. An almost universal problem noted was the insufficient number of trained professionals, and to a lesser degree, the tendency to hire urban-based technicians lacking experience or empathy with the rural poor. The most

commonly suggested remedy was the use of rural-based project-trained "para-professionals" from the areas where the projects are working (20, p. 7).

#### Organizational Aspects

J. French's study is based on an analysis of the organizational aspects of credit programs. He concludes that considerable improvement could be made in the administration of credit if; (1) loan procedures could be simplified, (2) communication and coordination were improved within the organization, (3) better linkages were established between the various agencies such as extension, input supplier, and between the credit institution and its clients, and (4) by making organizational and program goals and action strategies more coherent. He suggests:

- In those programs where the farmers participate with the credit institution in the preparation of the farm plan, there tends to be a closer follow-up supervision and compliance with the original purchase.

- Those programs with credit as one function of an integrated agricultural development program operated by a specially-created organization, usually are the "most successful of programs" (22, pp. 1-3).

R. Eckhaus is concerned about increased decentralization of operations, the simplification of operational procedures, and the development of evaluation and information systems which provide continued data collection, analysis and feedback on project progress. His views on loan operational procedures are

summarized:

1. Default and delinquency rates should be recorded to permit the borrower to distinguish those who are unable to pay from those unwilling to repay.

2. There is no valid justification to require land ownership as a condition for receiving loans, and this requirement should be eliminated. Collateral in the form of crop liens should be the accepted form. Also the membership of local loan-approval committees should be structured to exclude the larger farmer (23, p. 21).

Upon the completion of these papers and the other analytical papers prepared, some of the authors and AID/Washington staffers traveled to conduct ten regional and country-level workshops to review their findings with AID field and national-level credit officials. Upon the group's return to Washington they then developed a series of "policy and institutional issues" intended to improve small farm credit performance. These policy "issues" refer to the raising of loan interest rate levels charged in order to help defray high operational costs, governmental subsidies, target group focus, technical supervision during the introduction of new technology, importance of rural savings generation, and the "graduation" of clients from the more subsidized to the traditional commercial credit institutions. Background discussion of this "new doctrine," has been included in annex 1.

In addition the review identified a series of "institutional issues, i.e., suggestions related to operational

considerations, some of which incorporate the above opinions, which are summarized.

1. The institutional form of the credit organization, i.e. commercial or agricultural bank, cooperative, et al. seems not to matter as much as the (a) economic opportunities associated with the use of credit, or (b) policy issues mentioned above which confront all institutions.

2. One notable characteristic observed in those countries where a large portion of the potential clients have been reached, is the institutions' capacity to handle with minimum cost relatively large number of clients. More efficiency is obtained through; (a) a decentralized operation, (b) grouping farmers whenever possible for credit-related transactions and technical training, (c) using those institutions already possessing an outreach system to the rural areas, (d) obtaining access to private institutional money markets and developing attractive terms to these marketeers, and (e) providing for the capturing of local savings.

3. Private cooperatives can provide outstanding features such as local participation, group sanctions against delinquency, and multiplication of scarce technical training and would appear to have an important role in any credit program for small farmers except for two important problems--the shortage of local management and the fear of certain governments in local organization.

4. The evidence suggests that group activities characterized by some measures of compulsory participation have a greater degree of success.

5. One proposal mentioned, which has more relevance in Asia, for reaching large numbers of small farmers is to involve the local "money lender" from private financial sector in the process as a means to reduce administrative costs.

6. A greater awareness needs to be made of the various institutions providing credit to understand their particular attributes and where possible, combine them in a mutually-reinforcing system rather than treat each as an isolated alternative.

7. Credit institutions which work within an integrated program with extension and marketing institutions have better overall success.

8. Credit institutions take some time to develop and mature. During the first 10 to 20 years, financial weaknesses and program short falls were common even in those institutions which eventually reached a position of respectability.

9. Newly-created credit programs are often handicapped by being burdened with partially incompatible program goals, with no established priorities.

10. All small farmer credit programs need to create a self-evaluation mechanism to measure progress and impact toward the achievement of multiple goals.

11. Notwithstanding the argument for demanding that institutions continue emphasizing equity considerations, it is

essential that they remain viable and survive as a financial intermediary. The institutions often-criticized concern for debt repayment is legitimate (24, pp. 23-28).

All the Spring Review "issues" were later reviewed by AID, and in May, 1974, a revised information instruction was released to all field missions which incorporated most of the Spring Review conclusions and issues (25) (refer to annex 2 for a survey of this instruction).

Because of the limited research directed to the subject of credit institution operation, far less attention was received\* than the newly-defined role of credit subject discussed in chapter 2 and important financial aspects of credit programs such as interest rate structure, rural savings generation, government subsidy, etc. discussed in annex 1. Little of concrete utility could be provided other than the general comments discussed. As will be demonstrated in chapter 5, the field of institutional operations is an area that has not been studied sufficiently by the donors nor by academia.

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\*As J. French concluded in his study of organizational matters, much more needs to be learned about the administrative development of credit organizations (22, p. 3).

## CHAPTER IV

### REVIEW OF AGRICULTURAL CREDIT ACTIVITIES OF OTHER DONORS AND THEIR SUGGESTIONS TO IMPROVE OPERATIONAL PERFORMANCE

Soon after the completion of AID's massive review, the World Bank, FAO and Rockefeller Foundation initiated subsequent studies of credit. The findings of these organizations in varying degrees complemented the policy recommendations identified by AID. The various credit activities of these agencies and the Inter-American Development Bank will now be reviewed and appropriate observations concerning the operational aspects of credit institutions provided.

#### World Bank

The World Bank is now the largest contributor for agricultural credit having provided a total of over \$3 billion. However, it was not until the period 1964-68 that expenditures began to increase, averaging about \$25 million per year. During the period 1968-73, \$350 million per year was made for agricultural credit, and in 1972, the Bank surpassed AID as the donor providing most credit (18, p. 5). In 1973, agricultural credit exceeded the total value of any other agricultural project component and has since maintained that position within the Bank's portfolio (26, p. 282).

The larger producer, especially the producer of over 100 hectares, has been the traditional participant in the World Bank agricultural credit program. Lending for large scale livestock operations has been the most important of credit activities, constituting one-third of the Bank's credit portfolio (1, p. 25).

The first "small-farmer" loan of the Bank was made in 1971 (18, p. 6). Since then, increasing attention has been noted. This exclusion of small producers from the World Bank's activities was because they felt that the limited technological improvements available at the small farmer level did not permit sound investments to be made.

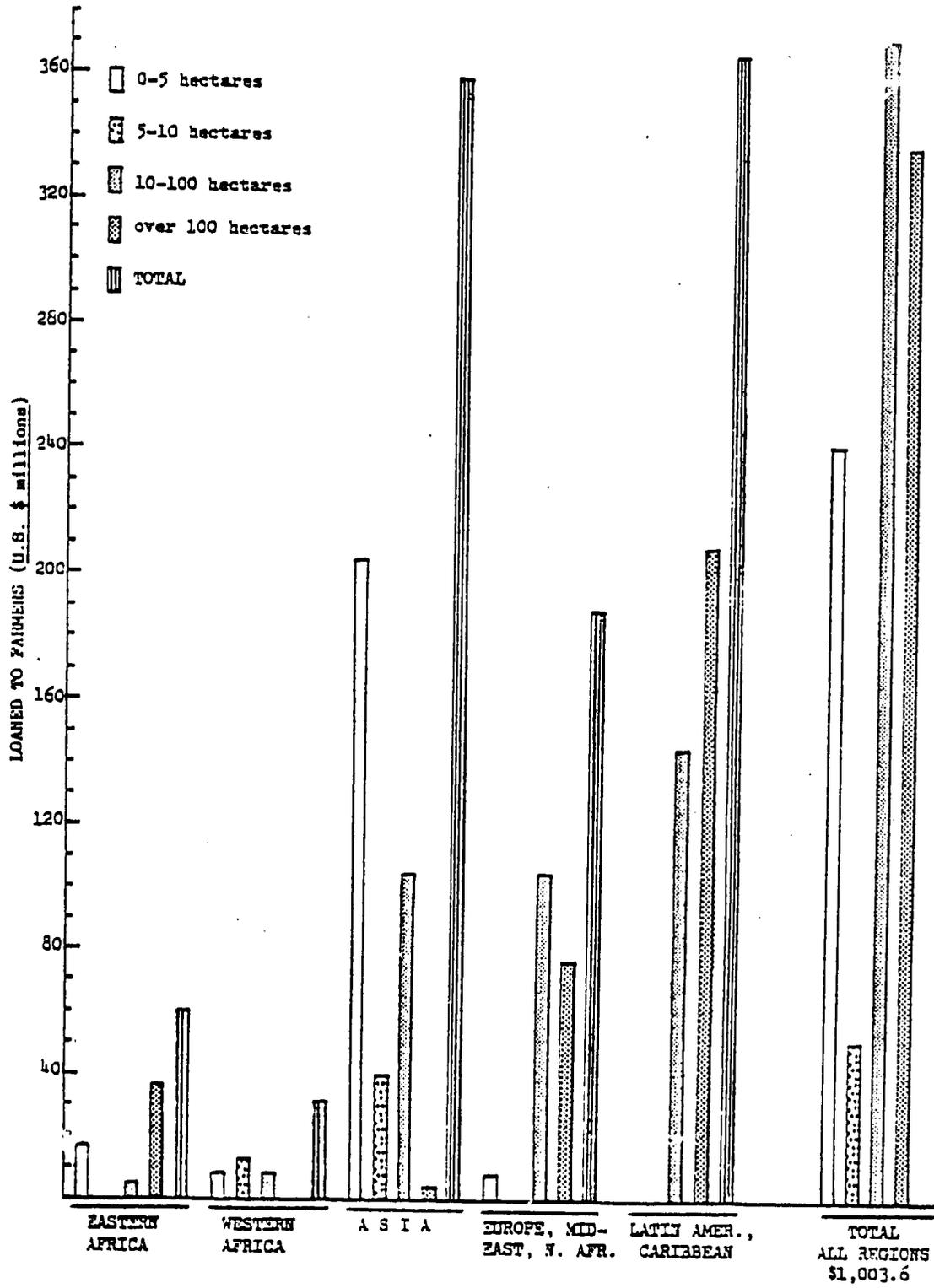
Quoting the Bank (1, p. 25):

Credit was not regarded as a practical means for dealing with the problems of subsistence farmers and agricultural laborers. However, the technological improvements of recent years have changed the economies of small-scale farming, making it possible for once marginal farms to become viable and credit worth enterprises.

From 1971 to 1973, \$241 million were loaned to small farmers producing on 5 hectares or less. Chart 2 provides the most recent distribution available of World Bank lending by size of farm unit. According to this display, the initial small farm activity for the Bank represents 24 percent of the Bank's agricultural credit activity loaned during the period 1969-1973. India received 77 percent of the total \$242 million for small farmer lending during this start-up phase (1, p. 74).

The recent emphasis by the World Bank on improving the productive capacity of the small farmer was dramatically

CHART 2. WORLD BANK FARM LENDING OPERATIONS BY SIZE OF FARM UNIT, FY 1969-73\*



\*Source: World Bank, Agricultural Credit Sector Policy Paper, May 1975, p. 74.

emphasized in 1973 at the Nairobi Conference of the Board of Governors of the World Bank and International Monetary Fund. Quoting from the Bank's President, Robert McNamara, speech at the conference (17):

The development programs I have discussed . . . can all be initiated quickly by governments and will make a major contribution to the goal of a 5 percent growth rate in the output of small-scale agriculture by 1985.

. . . without rapid progress in small-holder agriculture throughout the developing world, there is little hope either of achieving long-term stable economic growth or of significantly reducing the levels of absolute poverty.

Agricultural credit was to play an important role in accomplishing these production objectives. As stated in the Bank's Policy paper on agricultural credit published soon after the speech, \$1,300 million for agricultural credit over the five year period 1974-78, "almost half of the total or around \$650 million allocated for small farmers" was pledged (1, p. 18). Though an impressive total is committed, when compared with the Bank's 1972-74 lending levels for small farmer credit, almost the same annual levels over a five year period are maintained.

As discussed, the World Bank participated in the discussions of the Spring Review, particularly in the concluding sessions on credit policy issues and related matters. In 1974, the Bank began to conduct its own assessment of past credit activities. In conducting this review, Millard Long, one of the consultants contracted for the Spring Review was contracted to compile the data generated from the Spring Review with that of the Bank's in order to produce what Donald termed, "the most

comprehensive assembly of statistical data that has been published to date" (18, p. xi). Some of this data and other reports were incorporated into the Bank's above-mentioned policy paper. This document briefly describes the World Bank's past activities and succinctly outlines the various policy issues concerning the Bank. No independent evaluations were published, nor was any background information provided on how their policy issues were developed. The Bank identified four credit policy issues relating to (1) eligibility criteria and security requirements, (2) the level of interest rates and the merits of interest subsidies, (3) repayment performance, and (4) credit channels. A summary of these issues is provided in annex 3. Though only a few suggestions are offered concerning small farmer client loan approval and repayment, in a later section, the Bank provides a brief series of "guidelines" which institutions should consider in their operations.

1. Accessibility--Even decentralized branch offices tend to be distant for small farmers with limited transportation. Consequently, the institution needs to go to the village or even individual farm level to make necessary contacts.

2. Packaging--Credit must be coupled with new technology and the timely supply of inputs.

3. Distribution in Kind--Though apparently paternalistic, as the farmer is not used to having a cash surplus or purchasing inputs, in kind distribution has proven to be the most effective means of delivering credit for small farmers.

4. Timing--Given limited on-farm storage facilities, when credit is provided in kind, it is vital that timely distributions be provided.

5. Flexibility--In times of crop failure or individual situation, it is necessary to permit re-scheduling or adjustment on loan repayment.

6. Continuity--For programs to have a positive impact and to encourage repayment discipline, continuity of services is essential.

7. An open-ended approach--No fixed technology system can be established, but rather a variety of "prescriptions" must be developed. A process of trial and error is necessary beginning with a simple technology and providing more complicated technology as appropriate (1, pp. 62-63).

#### Food and Agricultural Organization

The FAO was organized in 1945 with a basic objective of "encouraging greater production and better distribution of food and to improve nutritional standards, especially in the less developed regions" (27, p. v). The FAO has no lending capital. However, as it has been active in providing substantial amounts of technical assistance and training to agricultural credit institutions, cooperative development agencies, and related agricultural development activities, and provides assistance to the World Bank, its position is very important in relating to countries requesting assistance and implementing projects. As information is not available on these institution-building activities, emphasis is directed to FAO publications concerning

credit. Like AID, they have placed particular emphasis on the supervised credit model.

The first FAO document on agricultural credit, the Manual of Supervised Agricultural Credit in Latin America was published in 1955. The manual was the result of the "First International Panel on Experts on Supervised Agricultural Credit" held December 1953, in Asuncion, Paraguay. It was wishfully thought that through the introduction of the supervised credit system, "the ignorance and backwardness of rural communities will be reduced more and more and the goals set namely: greater farm production and higher living standards for the farm family approached" (28, p. 47).

During this period the FAO also prepared the only donor produced (I saw no others) text-like reference guide for agricultural credit officials at all levels. The economics associated with credit, characteristics of the rural communities, project promotion, costs of credit, loan security, various credit organizations, i.e. commercial banks, money lenders, etc., and the various details associated with cooperative credit, supervised credit, and traditional bank credit were all presented in detailed form (24).

FAO representative participated in the regional workshops held during the Spring Review and in the final sessions held in Washington. Their participation in the Spring Review appears to have been more than any of the other donor institutions.

Beginning in January 1973, the FAO held a series of regional seminars in various parts of the world on small farmer

credit systems and in 1975, contracted for the preparation of a study "Agricultural Credit for Development" which was completed by the Cassa di Risparmio delle Provina Lombarde (CARIPL0).

This study concluded (41, p. 239):

. . . credit institutions have failed to make their full impact on food production in LDCs because agricultural credit had often been given in isolation from other support services and is frequently limited to non-food export crops. In addition, a shortage of trained personnel and qualified management or inadequate services together with the vulnerability of credit institutions to political interference, also limit their effectiveness.

Pursuant to these reviews, the FAO organized the "World Conference on Credit - for Farmers in Developing Countries" held October 1975, in Rome. This conference was attended by over 400 representatives of ministries concerned with agricultural credit, agricultural banks, cooperative banks, central banks, and commercial savings banks, from 104 countries and was the largest conference yet held concerning agricultural credit.

Using the CARIPL0 report and the reports from the regional conferences, a series of themes were studied by various working groups from which position papers were presented. From these papers, a lengthy series of concluding recommendations were approved. The various subjects from which specific issues evolved include: (1) integration of credit operations with related development services, (2) directing assistance to small farmer sector, (3) FAO monitoring the development of adequate credit arrangements to serve the small farmer of the developing countries, (4) interest rates subsidies and inflation, (5) mobilization of domestic savings for agricultural development, (6) the role of central banks, (7) maintenance of operational

efficiency, (8) expanding the flow of funds through national credit institutions, (9) training, (10) farmer participation and representation, (11) regional (i.e., Latin America, Asia, etc.) approaches in agricultural credit, (12) regional agricultural associations, (13) international agricultural credit bulletins and bibliography, (14) international credit advisory assistance, and (15) organization of a "Scheme for Agricultural Credit Development" (SACRED) to provide a coordinated follow-up assistance to the various recommendations from the conference (31).

Comparing these policy guidelines with the credit policy issues prepared by AID and the World Bank, except for the loan default problems raised by both the World Bank and AID, and the "graduation" issue presented by AID, the conference endorsed all other points (126). Minimal attention was directed at this conference to actual operational problems encountered by credit institutions.

Though the FAO has assisted credit activities through its technical assistance, training, publication, and the focus provided credit at the Rome conference, one important new "clearing house" institution for agricultural credit appears to offer particular promise. In order to provide an institutional base from which follow-up activities related to the various recommendations generated during the Conference could be done, the delegates recommended the creation of a Scheme for Agricultural Credit Development (SACRED).

In 1976 SACRED was officialized by the FAO Council. To provide SACRED with a world-wide out-reach system, four Regional Agricultural Credit Associations for Asia, Africa, Near East - North Africa and Latin America were created and yearly meetings have since been held. At the inauguration of the first meeting of the Asia Association, the FAO Director General remarked (32, p. 5):

To accelerate the flow of international assistance to the agricultural credit sector, FAO has embarked on the "Scheme for Agricultural Credit Development" (called SACRED). In the context of FAO's overall agricultural credit programme, the Regional Agricultural Credit Associations and SACRED are two basic and mutually supporting elements. SACRED is designed to secure a greater involvement of aid agencies and banks of the developed countries in building up the agricultural credit institutions of the developing countries. The Regional Associations are seen as a self-supporting mechanism to be managed by the financial institutions of the developing countries themselves for their mutual support and strengthening.

As of March 1976, 60 financial institutions, government aid agencies and private foundations have received correspondence affiliation (33, p. 12). Periodic regional conferences attended by national credit officials and also an Agricultural Credit News Letter is published which provides general information. Of particular interest is the project proposals generated by SACRED for training and technical assistance support. For example, as of July 1977, 114 project proposals totaling over \$13 million were reported by SACRED for these services (34).

#### Inter-American Development Bank

The IDB was the first formed of three other regional development banks. Though the African Development Bank and the

Asian Development Bank have made investments in agriculture, since only the IDB has made a major contribution in the area of agricultural credit--especially towards the small farmer--no mention is made of the other institutions (18, p. 5).

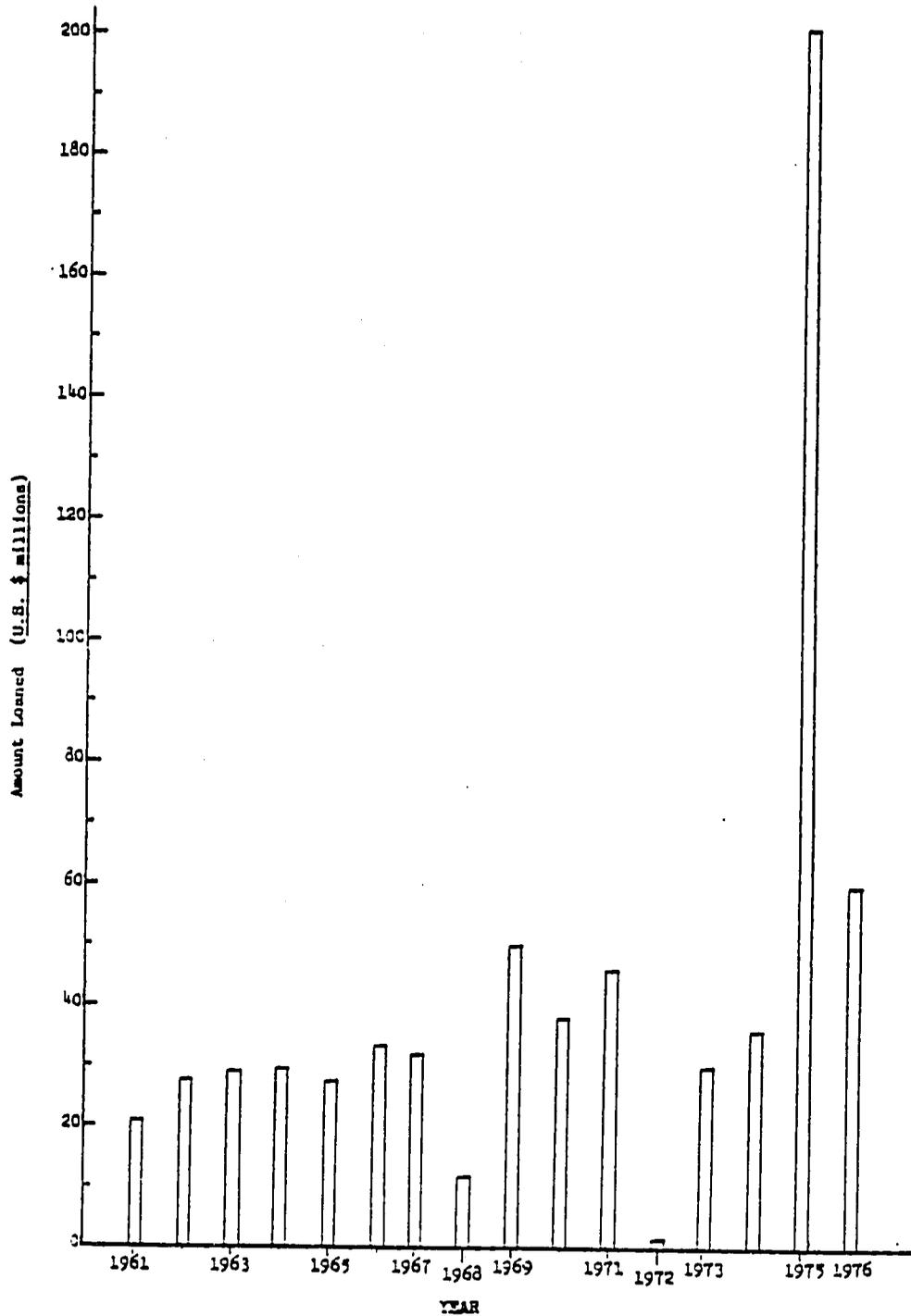
Unlike the World Bank, the IDB began early in providing capital assistance in agricultural credit. As noted in chart 3 except for the noticeable unexplainable differences in 1972 and 1975, lending for agricultural credit has ranged from \$12 to \$60 million, averaging about \$36 million over the eighteen year period. From 1961-78, an estimated total of \$880 million has been allocated for agricultural credit. Credit and irrigation are the leading lending categories, each having received almost 30 percent of the capital fund (35, p. 2) designated for agricultural development.

The orientation of the credit program has been directed to try to correct domestic food supply deficiencies which in the past have been observed (36, p. 13). The principal countries receiving credit were Argentina, Mexico and Brazil, all receiving fifty-five percent of the total. Though the credit recipients have not been focused, the IDB has "given considerable emphasis to smaller farmers in the credit programs it supports (18, p. 5).

As stated by the IDB (37, p. 14-15):

The diversity of requirements is illustrated by the broad spectrum of farm projects which the IDB has supported to foster greater production, productivity and employment and a more equitable distribution of income in the rural areas of Latin America. The Bank's agricultural lending ranges from large-scale mechanization programs in Argentina to construction of thousands of small irrigation

CHART 3. AGRICULTURAL CREDIT LENDING AUTHORIZATION LEVELS,  
INTER-AMERICAN DEVELOPMENT BANK, 1961-76\*



Source: Inter-American Development Bank, Participation of the Bank in the Development of Agriculture in Latin America, April 1967, pp. 25-26.

facilities in Mexico, to land settlement and agrarian reform projects in a number of countries to agricultural credit programs for low-income farmers in all of the countries of the region.

The IDB has informed me that no policy statements or directives to assist national credit institutions and Bank staff in the design and implementation of projects have been prepared.

#### Rockefeller Foundation

Resulting from a review of the various foundation literature, the Rockefeller Foundation has had more experience than the others. Research on their "Puebla" project in Mexico has been conducted by C. Streeter (38). Of greater interest is the study Agricultural Credit and Finance in Africa by Leonard F. Miller. This study extracts much of the themes and issues developed during the Spring Review and FAO credit reviews, and provides a general discussion as to application based on credit experiences in Africa. The major issues earlier defined in the Spring Review related to loan defaults, administrative costs, technical supervision, integration of support services, group lending, rural saving promotions, etc. are discussed within the African context. This is the first research observed which tries to apply the "new doctrine" as expressed by the donors within an area setting. Of particular interest is the brief description of such operational-related problems regarding lending procedures, high administrative costs and default rates, complicated administrative procedures, personnel problems, and difficulties of service coordination (7, pp. 72-83).

## CHAPTER V

### OPERATIONAL RESEARCH

The above documents the special priority donor agencies recently have directed to improving the performance of small farmer agricultural credit programs. Except for the IDB, all agencies have evaluated their prior experiences as a basis from which more appropriate policy issues and suggestions related to institutional management and operations have developed. The role, financial considerations, and process of providing credit and supporting services has become more complex than previously viewed. Given the rather spotty performance associated with the traditional commercial banking system and the supervised credit model, the donors suggest that more imaginative delivery systems appropriate to the needs of the small farmer which incorporate credit, extension, input supply, and market support systems be developed. On the other hand, resulting from the limited number of generalized donor-prepared suggestions and recommendations related to program operation and management, it is observed that: (1) there is little appreciation of the difficult task of efficiently providing these services (particularly as part of an integrated service); (2) there is only limited concrete advice provided to assist donor and credit institution project managers in how the few

suggestions offered are to be implemented and (3) there appears to be a need to study in greater detail program operations as a basis for developing new management systems to help facilitate integrated service delivery.

What follows is an illustration of the range of operational problems confronting development agencies and views concerning research needs.

#### Identification of Operational Problems

As indicated earlier, the comprehensive nature of the Spring Review offers a data base from which any matter related to small farmer credit may be extracted. In keeping with the operational and institutional management orientation of this research, I reviewed 24 project evaluations, most of which followed a standard evaluation outline.\* Within the recommendations and issues section of each of the evaluations, operational-related matters were the most commonly cited problems. To perceive the magnitude of operations-related problems reported, I extracted those specific points which were not (1) too broad in scope to be irrelevant, (2) extraneous to the area of agricultural credit, and (3) applicable only to the peculiarities of one project. These operational problems (identified in citations 39-62) are grouped in the categories listed below (many of which are very much interrelated). A brief concluding summary statement which encompasses all the various evaluation comments identified (refer to annex 4 for a listing of all

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\*Most of the evaluations were conducted by contract consultants, the majority of whom were agricultural economists.

problems identified per category) is included. Regretfully these problems were most often only briefly stated with little quantitative or qualitative support data for comparative purposes.

Management Information Systems. An appropriate data collection, record and report system routinely generating accurate information to assess and evaluate project activities should be established.

Project Evaluation Systems. Appropriate evaluation procedures need to be developed to determine project usefulness and impact as a basis for making adjustments.

Quality of Supporting Services. Services related to developing appropriate improved technologies, providing trained extension and modern marketing all need to be improved.

Coordination of Supporting Services. There is generally poor coordination of services with the credit institutions, particularly as related to extension services.

Loan Approval Considerations. Too rigid loan approval criteria and too much delay in loan approval.

Loan Repayment Considerations. Special efforts need to be directed to the development of appropriate loan recuperation systems.

Centralized Organization. To improve program effectiveness a decentralized system is recommended.

Personnel Matters. According to J. French, the most universal observation made throughout the Spring Review was probably the lack of trained personnel (22, p. 6).

Management/Supervision. Appropriate management and personnel administration systems need to be developed.

TABLE 2.  
SPRING REVIEW, IDENTIFICATION OF  
OPERATIONAL PROBLEMS

Category	Frequency Reported
Management Information Systems	6
Project Evaluation Systems	6
Quality of Supporting Services	9
Coordination of Supporting Services	13
Loan Approval Considerations	10
Loan Repayment Considerations	8
Centralized Organization	2
Personnel Matters	6
Management and Supervision	4

Table 2 reflects the frequency with which these specific operational related problems noted in annex 4 were observed. Given the frequency reported, it is apparent that operational problems are a major contributing factor in explaining the mixed performance of institutional credit earlier reported.

This review supports well E. Kulp's conclusions that agricultural credit "is the most difficult of all services to provide to farmers" (63, p. 67).

At the same time, however, when these nine categories are compared with the AID and World Bank developed suggestions, except for the loan approval and particularly loan repayment categories, little of operational utility has been suggested to assist local institutions in addressing the many other problems observed.

#### Research Needs

Given the magnitude of the problem related to improved management practices, operational systems, and staff development required to improve program management, both AID and the World Bank concur that more attention should be directed to obtaining more knowledge on management operations and organizational development (25, p. 38 and 1, p. 17).

Given the unlikelihood that traditional banking institutions are capable of servicing the rural poor, according to the Bank, new operational systems need to be developed (1, p. 17):

There is a need to learn much more about the most appropriate channels for providing credit at low cost to enable large numbers of small farmers to become more productive. It is clear that any system intended to reach large numbers of low-income producers will have to be based on principles different from those designed to reach a relatively few large producers. . . . Small farmers require much more services including closer supervision, than the more commercialized large farmers, and more flexible policies related to credit collateral, downpayment and repayment schedules.

Cognizant of this deficiency, however, the ideas, recommendations, and systems to meet the new challenges is a topical area seldom studied by donors and academia.\*

For example, neither the FAO nor the AID sponsored bibliographies covering all literature related to agricultural credit provide listings related to credit operations (65 and 66). Economists have studied most about credit and as observed earlier are often called upon to conduct project evaluations. Much of their professional interests have been concentrated on interest rate structure, credit availability, price policy matters, et al., with limited attention directed to project operation.\*\* When asked to study management concerns, economists often times employ quantifiable input-output factors. Such an approach usually results in inflated projects targets so as to justify project benefit/cost ratios.

Uma Lele comments (68, p. 129):

Because there are no easy objective criteria by which to judge such accomplishments as the training of manpower or the development of administrative abilities, investment in these integrated programs tends to be judged primarily by the criterion of an acceptable rate of return, calculated on the basis of quantifiable production targets. These targets are derived from standard input-output coefficients for physical inputs, such as fertilizer and seed, and do not explicitly take into account some of the crucial

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\*G. Donald's excellent review of the Spring Review literature, particularly Chapter 10 which discusses application forms, loan approval procedures, personnel policies, village agents, and mobile branches (18, pp. 118-135) and D. Goodman's study on organizational structure and administrative procedures case study (64) are the only published sources I uncovered.

\*\*Some economists have commented that these financial issues are more important than management and training considerations for these latter problems tend to "largely disappear as financial markets develop" (67, p. 6).

complementarities in realizing production objective--namely the supply of trained manpower to administer an input delivery system, the effectiveness of administrative procedures, or the existence of other physical infrastructure such as roads. . . . Thus, the larger the proportion of expenditure in a given project on these latter types of components, the greater appears to be the need for ambitious production targets to carry the burden of these indirectly productive activities, so that the project can be acceptable in terms of internal rate of return.

In the broader area of the administration of agricultural development, only in the late 1960s did public administrators begin research on a case study basis of agricultural administration. The only public administrations study of credit administration was by D. Goodman (64).

More recently, social scientists and multi-disciplinary teams have been working in the actual design of management systems to facilitate small farm development.\* G. Hunter, one of the more prolific of the social scientists, has been critical of social anthropologists for not having conducted descriptive studies of various systems and how these systems are perceived at the local level. Such work would greatly assist economists and administrators in project design work.

G. Hunter comments on the problem (69, p. 53):

There are of course, plenty of reasons for this neglect. On the academic side, the apparent regions of mathematical analysis add the special claim of figures to supreme status, as facts made economics far more attractive than the untidy and uncertain study of public administration or cultural change. Even those who did profess public administration as a discipline have mainly been concerned with the morphology of institutions rather than their physiology, and with central government as large para-statal organizations rather than the multiple and confused goings on at the village level (where agriculture happens to take place).

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\*Robert Chambers, Christopher Trupman and D. G. Bedshaw have done work in East Africa.

Considering the high priority placed by donor agencies in improving credit performance and the experimental nature of the limited donor recommendations related to improving performance, there appears to be much opportunity for research in the un-studied area of rural development management. To better appreciate (1) the complexities of program operation, (2) develop newer ideas and suggestions and (3) test the appropriateness of the limited suggestions therefore proposed, detailed operational research of those small farmer directed projects containing a high degree of innovative "new-doctrine" thought in their design seems extremely useful. Though admittedly a complex subject which is difficult to observe and manipulate effectively, a comparison of descriptive case studies could well serve as an important follow-up activity to the donor's original initiative to assist both donors and national institutions in improving the possibilities of development positively effecting the welfare and aspirations of the world's rural poor. Such is the purpose of the following Nicaraguan case study.

## CHAPTER

### THE DESIGN AND MANAGEMENT OF INTEGRATED AGRICULTURAL DEVELOPMENT

#### A Nicaraguan Case Study

Nicaragua is not usually associated with the countries who have undertaken major social and economic reforms. However, in the 1970s, a major review of the agricultural sector was conducted which served as a basis from which glaring inequalities within the rural sector could be addressed. Evolving from this sectoral assessment was a major policy reorientation and institutional restructuring from which, in a relatively short period, a significant number of rural poor were participants and recipients of integrated social and economic development services.

This chapter addresses key aspects related to this significant metamorphosis from problem identification to farmer utilization of new development services. Firstly I briefly trace the evolutionary development of the growth-oriented policy and the significance of a government initiated sectoral assessment which served as the cornerstone for new policy development. This is done in order to comprehend the reasons for the government recommending and implementing a major policy shift in agricultural strategy.

Given this informational and policy framework, the chapter then describes various organizational factors and the complex series of central management, personnel and outreach delivery systems developed to attempt to assure attainment of original program objectives. Resulting from the political turmoil which has confronted Nicaragua over the last year, discussion is directed in most cases to the first two and one-half year period of program operation. This is also the period during which these operational systems were developed and tested.

Firstly, however, to provide an overview of certain key topics relevant to Nicaraguan agricultural development, a brief discussion of its size, topography and soils, climate, infrastructure, and population is presented.

#### Physical and Social Aspects Related to Nicaraguan Agriculture

Size. Nicaragua is the largest of the Central American republics, with a total land surface area of 137,000 square kilometers. This is comparable in size to England and Wales combined.

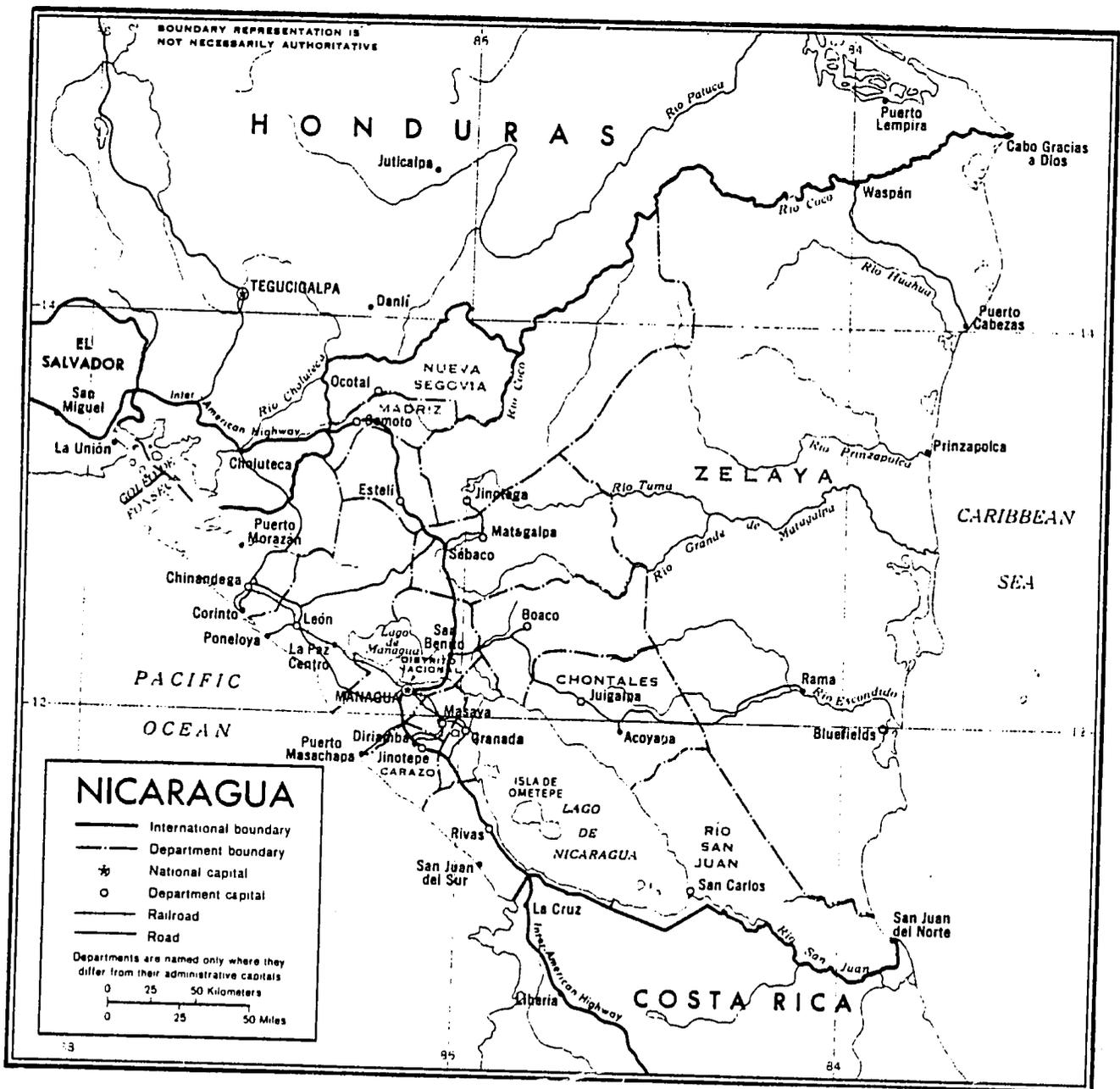
Topography/Soils. Nicaragua is characterized by its diverse topography and wide range of soil conditions.\* This diversity is due to the large number of irregularly-aged volcanic formations located along the Pacific, and the long mountain chain which "dissects" the country from the northwest to southeast. The Pacific coastal plains contain the most fertile

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\*Refer to map, figure 4.

FIGURE 4

MAP OF NICARAGUA



soil and is where most of the country's cotton, sugar cane and rice are produced. Going east to the upland and mountain area, less of the fertile volcanic ash is found and is the area for coffee, maize and bean production. The eastern plain, which occupies two-thirds of the total area is generally low in natural fertility.

Climate. Nicaragua's location-- $10^{\circ} 45'$  to  $15^{\circ} 10'$  north latitude--has a strong influence on its climate. However, the main cause for the noticeable variable dry to humid tropical conditions that prevail, is the varied topography which influences rainfall patterns, and to a lesser degree, temperature differences. Mean annual rainfall varies considerably within ranges, but averages are 1,140 cms of rainfall from the central mountain region to the western plains, to 6,350 cms east of this region to the Atlantic Coast. Drought in certain parts on the western area is common. The various crop growing seasons (in some areas there are three), are associated with changing rainfall patterns. The principal growing periods, however, are from May to July, and August to December.

Infrastructure. Nicaragua is well-served with an all-weather paved road system confined principally to the western plains and uplands, and to a lesser degree, the central mountain regions. The Pan-American highway which links Nicaragua with Costa Rica and Honduras, is in good to excellent condition and is the main via for Central American agricultural commodity exchange. In the central mountain area, where most of the

coffee and small producer agriculture is undertaken, the road conditions are generally fair to poor, particularly so in the rainy season.

Population. In 1975 the Nicaraguan population was 2.2 million, of which 50 percent were rural. Since 1950, when the rural population was 65 percent of the total, it has gradually declined, and in 1961 it was 59 percent of the total population. Of the total relatively homogeneous population, most reside in the highly populated area west of the central mountains with only 8 percent residing in the vast eastern plains region. During 1975, the population was growing at a rate of about 3.6 percent annually, down only slightly from the 3.7 to 3.8 percent growth rate observed in the late 1960s (70, pp. 2-4). The average size of rural family is 6.1 persons. Within the rural population, agriculture is the largest employer, most of whom are small farmers and farm laborers who reside in small communities.

#### Nicaraguan Agriculture Development 1935-1970

Though over the years its importance proportionately has gradually declined, agriculture has been the most important sector within the Nicaraguan economy.

#### Early "Agricultural First" Policy, 1935-1958

Since colonial days, the political history of the Central American republics, and particularly that of Nicaragua, has been one of turbulent political and social unrest. This long

tradition of perpetual turmoil was virtually eliminated during the presidency of the extremely controversial Anastasio Somoza Garcia. From 1936 to his assassination in 1956, even his critics remark that with the political stability he brought Nicaragua, considerable economic progress took place (71, pp. 258-259).

Prior to his presidency, Nicaragua had relied on a narrow base of export crops--coffee and bananas at a time when coffee yields had been declining noticeably (72, p. 42) and banana production suffered a noticeable decline resulting from Sigatoka. Somoza placed the priority for a rapid national development on the agricultural sector by emphasizing increased production areas and the rapid introduction of other crops suitable for export market. The most thorough study on this topic concludes that from 1936 to 1941, the Somoza government "placed an unparalleled emphasis upon agricultural development" to respond to the emergency financial situation confronting the country (73, p. 100). The first crops benefiting from this new campaign were cotton and sesame planted along the rich western plains area while coffee, corn and rice production also increased significantly (72, p. 159).

L. Laird summarizes some of the economic results of this strategy (73, p. 102):

By 1950 Nicaraguans were producing more agricultural goods than ever before. They were, on the whole, earning a greater share of the World's income than they ever had. Nicaragua's balance of payments became favorable from 1935 onward. The nation's international credit rating improved considerably as trade analysts praised Nicaragua's economic progress.

Agricultural Credit and the  
Public Agricultural Sector

According to a 1946 study of Nicaraguan agricultural credit institutions, prior to 1940, there was no coordinated agricultural credit system in Nicaragua (74, p. 3). In 1940, supportive of the new orientation directed to modernizing agriculture, the Nicaraguan Government invited a Chilean economist, Dr. Herman Max, to reorganize the government-owned National Bank of Nicaragua (BNN). Resulting from Max's recommendations, the national banking and credit system was to be tied to support agriculture (73, p. 101).

For the first time, large amounts of credit for agricultural, cattle, and poultry production was made available. From 1941 to 1944, the yearly amounts of money lent for agriculture jumped from \$1.6 million to \$3.6 million (74, p. 37).

Because of the (1) limited technical expertise available within the BNN, (2) absence of an extension service, and (3) rigid banking restrictions employed, the principal participants in the government's diversification programs were the large and middle-sized producers.

To quote Montealegre (74, p. 41):

Even if one were to grant that credit facilities have been adequate for large producers, particularly in areas where the National Bank has established branches, there has not been a sufficient democratization of credit facilities in the sense that the needs of small borrowers have not been appropriately met.

During this period, the motivating force behind agricultural development was the BNN. Expenditures for the public institutions supporting agriculture development received

limited attention. Between 1946 and 1948, only 1.5 percent of total government expenditures was devoted to the agriculture sector (72, p. 171), and this trend continued until early 1950 (75, pp. 332-334).

Perpetuation of Growth Emphasis  
Policy, 1956-1965

The assassination of President Somoza Garcia in 1956 had no effect in altering the national development strategy linked to agricultural modernization. Agricultural credit continued to be the main instrument of the public policy in promoting the growth and diversification of agricultural sector. The BNN and the Nicaraguan Development Institute (INFONAC), which was created in the early 1950s to help stimulate development through investment, received increased funding levels for capital and operational expenditures. For example, between 1962 and 1966, the IDB extended \$18.6 million to the BNN for agricultural and livestock development and \$2.3 million was loaned to INFONAC (76, p. 38).\*

At the same time, however, little attention was directed to the public agriculture sector institutions. Though beginning in 1950, the USDA had been providing agricultural research and educational training to an autonomous servicio unit, the agreement for this project was terminated in 1958. Resulting

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\*Illustrative of the agricultural emphasis of Nicaragua's development strategy, the total amount borrowed by Nicaragua from the IDB during the mid-1960s was at least twice the amount loaned to other Latin American countries with similar population levels and was exceeded by only five much larger countries; Mexico, Argentina, Brazil, Chile and Venezuela (76, p. 93).

from the departure of the USDA, a six year decline in the quality of education and research was noted as the Ministry's budget was not increased to compensate for the services provided by the USDA team (27).

Results of Growth Emphasis Strategy

The long-term government commitment to obtain national economic growth objectives through foreign exchange earnings generated from an expanded, more diverse agricultural export sector produced some remarkable achievements. Instead of the two-crop economy observed in 1935, as noted on table 3, between

TABLE 3  
VALUE OF AGRICULTURAL AND FORESTRY EXPORTS\*  
(dollars)

Crop	1939	1951
Sesame		2,479,498
Cotton	253,478	5,457,405
Rice		1,484,021
Coffee	2,639,951	18,449,845
Corn		1,049,845
Cattle	186,670	1,141,461
Timber	363,200	1,986,974
Sugar	83,600	1,411,360
Other	<u>834,000</u>	<u>2,015,273</u>
Totals	\$ 4,360,898	\$ 35,474,846

\*SOURCE: The Economic Development of Nicaragua (3, p. 294).

1939 and 1951, eight crops were generating over \$1 million in export earnings, and export earnings from agriculture increased over eight fold. During the period 1950 to 1964, Nicaragua observed an agricultural growth rate of 28 percent which was the highest recorded by any of the 19 Latin American countries for the same period (76, pp. 18-19). From 1939 to 1948, the volume of importations for labor-displacing farm equipment increased almost four fold (73, p. 198). By 1960, Nicaragua was the eleventh largest user of tractors in the western hemisphere. Similar figures could be reported for other implements and for the use of fertilizers and insecticides (73, p. 102).

Nicaragua was able to experience the most rapid economic growth rate of any Central American republic and by 1965, annual GNP was increasing at a rate of 9.7 percent (73, p. 102). However from the perspective of income distribution and employment generation, the benefits from these achievements were not notable.

Whereas the commercial export sub-sector continued to expand, the traditional small farm sub-sector was left unattended by any development service. The credit and other agricultural institutions structure tended to reinforce a dualistic agriculture sector (70, p. 16). Credit, technical, and marketing services were concentrated for the benefits of a relatively small, by comparison, group of middle and large size producers of cotton, sugar cane, cattle, tobacco, coffee, irrigated rice, sesame, etc.

An AID field team "evaluating" the Nicaraguan agricultural situation concluded (77, p. 4):

The remainder (small farm sub-sector) of the farm population contributes little to commercial agriculture, but it represents for Nicaragua a large reservoir of potential development and contribution to the national economy. This reservoir can only be tapped by an initial investment of government in technical services, provision of credit and the associated agrarian reform activities in the broad sense. In Nicaragua this group of rural people are largely untrained and devoid of production resources, but they exhibit an unusual attitude of willingness to work long and hard to fulfill their aspirations.

#### Agriculture Assessment and Policy Reorientation

After thirty years of an agricultural policy which neglected the broader concerns of the rural sector, a variety of production and economic problems began appearing. In response, the government mounted a massive investigative effort to determine their causes, and to develop an appropriate strategy. This section will examine the evaluation as the basic foundations from which a dramatic switch in government policy was based.

#### Problems Surfacing

During the period 1960-1964, the export sector continued to provide its contribution to the country's expanding gross domestic product. However, because of production decreases in cotton, and also declines in other products, the following five year period was noted overall as a period of economic recession. During the first five years of the decade, the annual growth rate of agricultural activity averaged 14 percent, but during the period of recession, the rate of growth was but 3 percent

(78, p. 1). Though crop production had expanded significantly due to increased planting area during the first five year period, from then on, a gradual decline was observed.\* In addition, a growing unemployment rate, particularly in rural areas was noted.

#### Rural Sector Assessment

Responding to this growing problem was the creation of the National Agriculture Committee (NAC) composed of the President of the Republic, President of the Central Bank, and the Minister of Finance, Economy and Agriculture. Formed in 1971, the NAC created an investigative task force, Sectoral Analysis Unit--"UNASEC." UNASEC was directed to conduct a detailed rural assessment of the economic and social conditions and problems of rural Nicaragua. The UNASEC team, whose activities were coordinated by the Vice-Minister of Agriculture,

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\*According to one analysis conducted by the University of Missouri, this abrupt stagnation "was brought about because the necessary adaptive research for both export and basic grain crops was not in place to take up the slack at the same time the most productive land had virtually all been exploited." To quote the basis for their conclusion (79, pp. 19-21):

"Since 1965, the crop sector has stagnated. From 1961 to 1965, the output of the crop sector expanded sharply because planted area increased rapidly. Yields, however, also increased at a rapid rate during this period except for sugar cane. After 1965, the rate of increase in both area and yield (again excepting sugar cane) declined. The net result was a stagnation of the output from the crop sector. Throughout the entire 1960 to 1971 period, however, the increase or decrease in total planted areas was the predominant influence on total crop production. In fact, approximately 85 percent of the total variance in crop output can be explained by changes in planted area alone. This directly implies that over the past twelve years, the change in planted area was the overwhelming factor explaining changes in total crop production.

was composed of twenty young professionals, most of whom had advanced degrees and possessed with a high degree of concern with improving rural welfare.

Beginning in October 1972, the UNASEC team, supported by a limited number of technical consultants from the Interamerican Institute of Agriculture Science (IICA), University of Missouri,\* USDA, and AID began their work by collecting and analyzing the large collection of studies previously undertaken but never before brought together for comprehensive analysis. Based on this material and a limited number of field surveys, major studies were completed on the macro-economic nature of the agricultural sector, farm management data, supply and demand of key agricultural commodities, the marketing of products and inputs, rural social and organizational problems, rural infrastructure, agriculture technology, natural resources, land tenure, agro-industry and governmental institutional analysis and finances. Though limited external technical expertise in specific areas was provided by representatives from the above-mentioned organizations, all major work was conducted by Nicaraguans. UNASEC served as a forum from which some of the best young professionals were able to comprehensively document problems of a national concern and at the same time develop the national concensus from which a concerted radically different government policy commitment to the rural poor was provided.

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\*In addition to their participation in the assessment, P. Warnken later published the Missouri findings (79).

After two years of study, in 1974, UNASEC presented a lengthy seven volume series covering detailed observations of the above-mentioned points. This assessment series served as the reference base from which significant institutional changes were to evolve.\* To address the many complex problems identified, not one governmental policy issue could be considered, but rather a vast number of interrelated factors had to be incorporated within a major program if substantive change was to occur.

UNASEC concluded that to respond to the growing need to (1) locate productive employment opportunities at a liveable wage, (2) provide the food needs for an expanding urban economic sector, (3) provide basic improved social services, (4) generate the tax base to support these services, and (5) provide the necessary foreign exchange base, a broader-based developmental strategy than the growth-orientation strategy earlier practiced would be required.\*\*

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\*A brief summary of the relevant issues concerned with rural employment, rural income distribution, land tenure, general level of living, agriculture development and supporting services, fiscal policy can be reviewed in annex 5.

\*\*As the UNASEC study concludes (28, p. 172-173):

"Agricultural services have been provided almost exclusively to a group of products and producers, contributing in this way to worsen the characteristics of income distribution in rural areas. The [commercial] sector could, in fact, with an adequate production policy, achieve substantial improvements and make a major contribution to the balance of payments in the medium run, but it would contribute little to solve the most pressing problems of agricultural development, and to lay the foundations for a self-propelled development of the sector.

In view of the situation, the National Agricultural Committee has explicitly stated that: (1) The objective of agricultural development is the improvement of living

Creation of Growth With Equity Strategy

Resulting from the National Agricultural Committee's endorsement of the UNASEC assessment, the difficult task of developing an operational plan addressing these conclusions was undertaken. In late 1974, the NAC released the UNASEC study "General Policy Strategy on Rural Development in Nicaragua." The document was the logical outgrowth of the lengthy assessment exercises and sets the stage for the new policy emphasis. To compensate for the previous neglects, the government's new policy priorities were to be directed to improve the conditions of the traditional small farmer agriculture sub-sector. Unlike the previous objectives, the objective of this strategy "is to bring about the improvement of the standard of living of the

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standards of the rural population. (2) In view of the above, it is necessary to achieve the following instrumental objectives, in the given order of priorities:

- Improvement of income distribution of high social sensitivity, as a tool to assure the rural mass an access to goods and services of the economic system.
- A widening of opportunities for productive employment, as a more dignified form by which man can contribute to raise his income and participate in the developmental processes.
- A strengthening of the growth of agricultural production as a way to assure availability of goods and services to the rural sector and a greater growth of the general economy.
- A higher contribution of the rural sector to the balance of payments to procure resources needed to support the general economic development of the country.
- An allowance of provisions for constant supplies of food and raw materials for domestic use, as a means to assure price stability and, the development of relations of the rural sector with other sectors of the economy, which in conjunction with foreign relations, allow for a self-sustained economic growth.
- Responsibility of the rural sector for the generation of financial resources that the public sector will need for the execution of the National Rural Development Plan.

rural population, meaning by this, a greater access of the rural population to the stream of goods and services, together with a greater individual participation in the decisions affecting the improvement of said population" (80, p. 1).

A key dimension to the new strategy was the expansion of the role of the small farm segment in the overall economy. Through the expansion of the productive capabilities of the large-small farmer sector, higher real incomes would be generated which in turn would provide the effective demand for basic goods and services produced by other rural dwellers. The assessment indicated that it was the expansion of the small farmer sector rather than medium and large farm sector which would increase the demand for labor since the latter were becoming increasingly mechanized. In short, by directly supporting the small farmer, a self-generating development process is accelerated in the rural areas. Also, the smaller, more labor and management intensive units of production were viewed as the most suitable to diversify the sector into non-traditional export crops and insure that domestic demands in agricultural commodities could be met with domestic production rather than imports. The same justification for a small farmer emphasis is not peculiar to Nicaragua, but has been endorsed by many other development experts (11, p. 37; 12, p. 143; 13, 14, p. 9; 15, pp. 10-14; and 16, pp. 35-36).

Restructuring the Public  
Agricultural Sector

The implementation of this dramatic change in policy would require an entirely different participatory governmental role and commitment from the passive role previously observed.

Quoting from the report (80, p. 4):

The role of the GON will be that of a "starting motor" correcting inefficiencies in order to initiate and accelerate the process of rural development, making use of the resources generated in the agricultural sector and channeling them to rural areas, through an integrated pool of services, thus obtaining a greater productivity of the sector, a greater income for small producers and an improved productive rural infrastructure and social services. The major portion of the initial effort will have to be financed with external funds, as the GON improves its capacity to obtain needed internal resources.

This "starting motor" responsibility required the government to provide basic agricultural research, extension, credit, input and marketing services not only to expand traditional domestically-consumed products but also other raw products for industrial use and export.\*

To create the organizational structure required to implement the new rural development initiative, the government determined that the public and autonomous agricultural sector programs must be mobilized under one sector control coordinating and planning unit, that a major reorganization would be required, and that special new implementing agencies must be created.

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\*To quote from the sector assessment: "It seems evident that small farmers that are able to combine crops for internal consumption with some export crops can obtain better income levels than others of equal size who are entirely devoted to growing crops for internal consumption (80, p. 115).

The Ministry of Agriculture was to be stripped of its many operational agencies and to be re-organized in order to provide only sectoral planning, budgeting, evaluation, training and regulating responsibilities. The Minister's position was significantly enhanced for now he was to be the "rector" of all governmental activities within the agricultural sector. He would be the principal coordinator for the many sectoral programs and be assisted by the planning, budgetary and evaluation units mentioned above. The extension, research, agricultural education, natural resource development, marketing, et al. activities would become separate autonomous agencies subject to policy direction and coordination provided by the Minister.

A principal support unit to the Minister in his new role was the newly-formed Department of Sectoral Planning (DIPSA) staffed by a young cadre of MS-trained professionals responsible for programming, budgeting and evaluating sectoral activities. Many of the UNASEC staff were incorporated within this unit thus "institutionalizing" their important earlier experiences. Other changes relate to training, regionalization and technology alterations and extension.\*

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\*A brief discussion of these important organizational changes is provided. Recognizing the limited operational and administrative capacity with the sector, a National Training Center (CENCA) was to be created to provide the sector's new autonomous agencies staff with the necessary operational skills required to execute programs to be more responsive to local needs, better supervise and coordinate operation, the Ministry was to restructure itself to permit regional operations. Also, the Nicaraguan Institute of Agricultural Technology (INTA) was created to integrate agricultural research, extension and training within one organization. All activities have been initiated and have received increased governmental assistance and from donor agencies such as AID and the IDB. Much has been

In addition to these important reorganizational activities, a "starting motor" implementing agency of the government's new strategy was created. In order to provide the comprehensive agricultural development services required to bring about the new policy objectives, a rural poor agency responsible for the specific basic agriculture services needs of this group and to coordinate, as required with other institutions, would be the most effective means to implement the new strategy.

As stated in the strategy paper (80, p. 55):

The Peasant Farmer's Development Institute--INVIERNO (Instituto de Bienestar Campesino)\*--will be in charge of promotional activities, organization, and training of small farmers and people in rural communities. The institute will also be in charge of information services, training, credit, marketing, acquisition of inputs, agricultural engineering for the benefit of small farmers and artesans, and, in general, of all the services required to improve the production, as well as the living conditions of rural inhabitants.

General Discussion of Leading Wedge Development  
Institution--INVIERNO

Creation of INVIERNO

No existing agricultural banking or government service office possessed the experience and confidence within the target population, nor the necessary capacity to launch the comprehensive development program envisioned. Instead of formulating

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done to strengthen the role of the Ministry and to assume compliance with the objectives of the UNASEC documents.

\*The correct Spanish acronym would be INBIERNO. However as the most important climatic events related to planting occurs in the invierno ("winter") rainy season, symbolic of the new program agricultural orientation the B was altered to V.

within the established structure the specialized organization and incorporating existing personnel, a new autonomous organization was instead created.\*

The May 1975 legislation which chartered the INVIERNO organization provided it with a broad mandate to extend developmental services over the long term (81, p. 26):

The basic purpose of the Institute, within the limits of the present law, will be to promote the socioeconomic progress of the rural sector in a way that will allow its population to attain a sustained, permanent, and integral improvement designed to achieve for such population a more effective participation in the economic, social, cultural, and political life of the nation.

Given the many limiting factors identified in the rural area, one factor could not be attacked in isolation, but rather all major factors are to be addressed within a comprehensive structure. The INVIERNO charter describes its many integrated banking and non-banking development services related to credit, technical assistance, input supply, marketing, infrastructure, etc.\*\*

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\*The World Bank contends that often times the special requirements for dealing effectively with large numbers of small farmers are not within the capability of the traditional commercial banking structure, agricultural banks and development banks. The system and procedures for reaching the large borrower clientele are not appropriate for the small borrower (1, p. 15).

\*\*Both the World Bank and AID concur on the advantages of credit delivery through one multi-purpose institution as a means to assure the provision of necessary services at smaller per farmer costs. Management problems, however, are increased (1, p. 15; 25, p. 41; and 24, p. 18). To quote AID's experience (24, p. 26): "Credit institutions working within an integrated program have better overall success. Where extension and marketing services don't exist, a new multi-purpose agency may be indicated.

To comprehend the management systems to be discussed, mention is first made of INVIERNO's outreach strategy, regional orientation, organizational structure, program financing, activities, and achievements.

### Outreach Focus

Among its many designations, INVIERNO would be responsible for the initial community promotion and "consciousness raising" experiences to prepare the community for their participation in the development process and also for the execution of specific agricultural and rural developmental services and for other services that are to be coordinated and implemented with the assistance of other governmental agencies. These services are to be introduced gradually based upon the social and economic conditions of the communities, and INVIERNO's and the other organization's institutional capacity to provide them.

During the first year of operation, particular attention was directed to perfecting the agricultural credit project for this was the most important activity perceived by the majority of rural residents. By succeeding well here, it was hoped that an image within the communities of their and INVIERNO's capacities would facilitate the community gradually attaining the long range self-sustaining development objectives anticipated.\*

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\*It is believed that the implementation of a new program be structured so that positive results are perceived by participants during its initial activities. This helps to establish a positive image and confidence which can create the necessary setting from which greater commitments and future risks by the project participants may evolve. As viewed by F. Frey:

The developmental administrators' most important job in the traditional village is to ensure that the villagers

As described by INVIERNO (82, p. 9):

The accomplishment of [the program's] objectives requires the uniting of all factors that directly or indirectly affect the developing of the campesino family. This implies that the Institute must provide to its beneficiaries an entirety of integrated services, whose effects will go gradually manifesting themselves overtime. Therefore the sustained growth of the rural population level of living only will be fully attained in the long run. Nevertheless, at short and medium term, they will be able to register significant progress in some factors--like the labor developed in the first years which in turn contributes to accelerating the final process.

In accomplishing these objectives, all mutually-supportive agricultural development services, including all credit activities would be administered via "mobile branches" at the community level, and in some cases, at the farmgate. Given the poor road conditions, limited transportation facilities of the rural poor, and the low level of agricultural technologies used, in order to reduce the producer risks, an outreach system directed to the community level would be mounted.\* Clearly the government working with participating communities was to have a more

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have a "successful learning experience with change. He must select specific developmental projects whose results will be highly visible to and highly valued by the villagers. At least at first it should be a project whose probability of success is very great and whose realization time is very short. The crux of the project is its impact upon the orientation of the peasantry, not its marginal contribution to gross national product."

(Frederick Frey, "Development Aspects of Administration," edited by Paul Leagens and Charles Loomis, Behavioral Changes in Agricultural Concepts and Strategies for Influencing Transitions. Cornell University Press, Ithaca, 1974).

\*Because of poor transportation, small farmers usually have difficulties in reaching branch offices and usually several trips are required before credit decisions can be made. Consequently, according to the World Bank, "it is necessary for the institution to go to villages or even individual farmers to cooperative meetings or to small informal groups to make contracts" (1, p. 62).

active involvement in the rural development process than before.\*

It is INVIERNO's contention that (82, p. 8):

Opportunities must not only be provided, but the services should be delivered to the individual rural farmers and to the community in a comprehensive manner, so that these opportunities may be accepted and profited by the rural farmers, and that once they have been received, may be fully appreciated.

### Regionalization

During the UNASEC survey, eight agricultural regions were created based on common agronomic considerations. So that scarce developmental resources could be focused on the most pressing problems in the most needy areas, and to provide the degree of operational supervision required to permit the rapid and efficient development of the operational and management systems required for future expansion to other areas, the programs initial activities were concentrated initially in Regions V and II (refer to chart 5). Region V with 253,000 inhabitants has the largest rural population and the largest percentage of small producers. The average rural family income was lowest in Region V, with Region II being second lowest. The combined rural population in these two regions is about 40 percent of the total national rural poor population. Both

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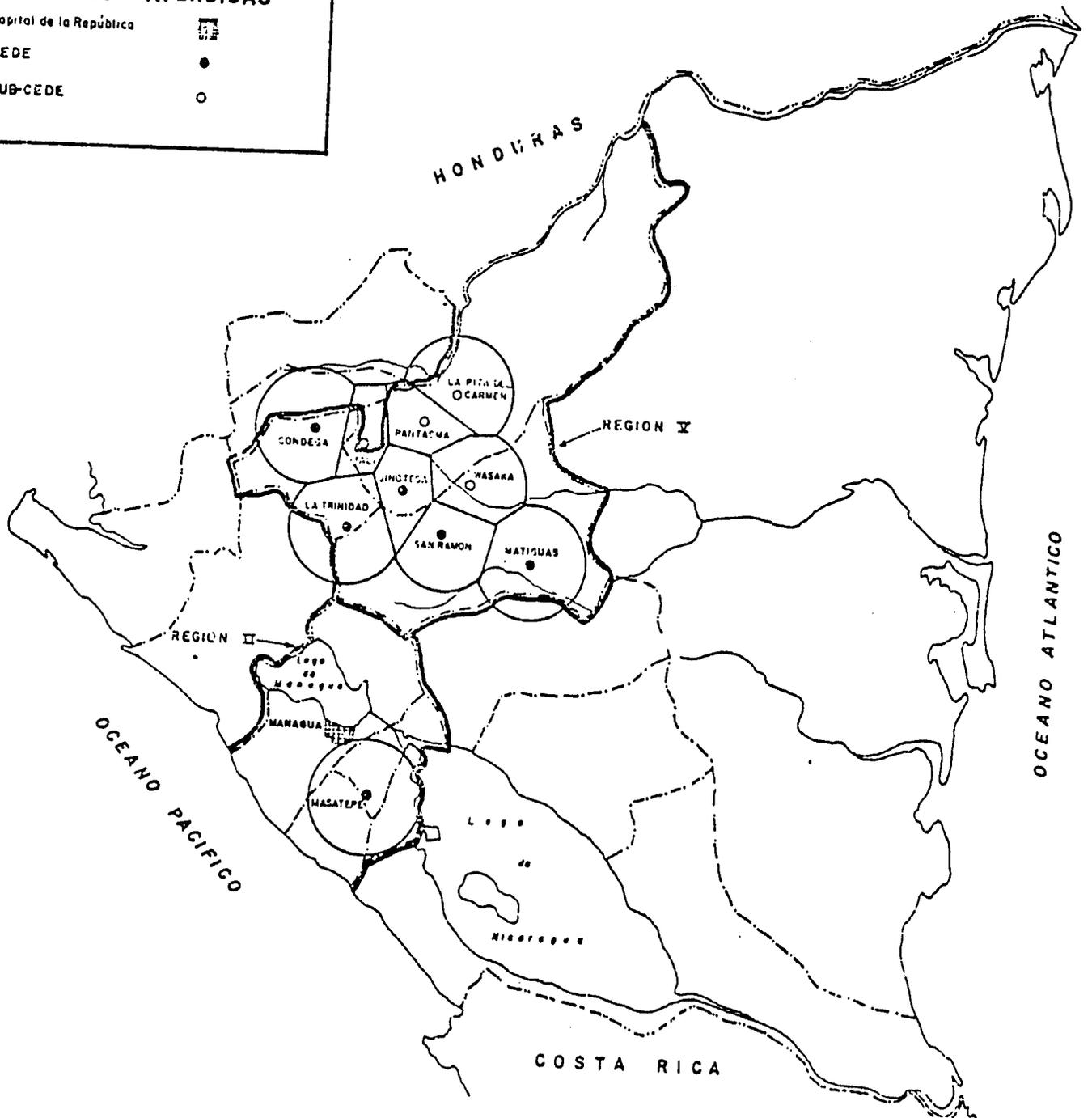
\*The Spring Review conclusion regarding government involvement is appropriate (24, p. 27). "The argument for government involvement . . . can be extended to all forms of small farmer credit programs. Since these programs by definition imply redistribution of economic and political opportunity, they cannot succeed with large numbers of small farmers without confronting existing rural power base."

CHART 5

INVIERNO OPERATIONS AREA

**INVIERNO  
ZONAS ATENDIDAS**

Capital de la República	☐
CEDE	●
SUB-CEDE	○



areas demonstrated promising agricultural development factors which could contribute in bringing about a more significant program impact (83, pp. 38-40).

#### Program's Organizational Structure

INVIERNO is an attempt to incorporate a delivery mechanism of diverse services with various entities to the rural poor all within one organizational structure.\* This requires a system to coordinate both externally with other agencies and within the Institute itself from the central to regional to zonal offices to the isolated community.

External coordination is institutionalized at the central office level through the INVIERNO Board of Directors. The Minister of Agriculture, as coordinator of the public agriculture sector, presides as INVIERNO's Board Chairman, with other Board members being the Minister of Education, President of the ~~Central Bank, President of the National Bank, President of the~~ Agrarian Institute, two representatives each from both the majority and minority political party, and one member representing campesino cooperatives and organizations. A General Manager, appointed by the President of the Republic is responsible to the Board of Directors and serves as the institution's chief executive responsible for implementing Board policy. The

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\*The Spring Review concluded that no one institutional form is the preferred since government policy, institutional powers, leadership, and cultural milieu are all variable peculiar from which no conclusive opinion could be made. A decentralized organizational structure, however, was the preferred (24, pp. 15-16).

Board's responsibilities relate to general policy formulation, annual budget approval, amendment of by-laws as required and other general overseeing responsibilities (81, pp. 38-39). The Board nominates an auditor to assist it and INVIERNO in continuous inspection activities.

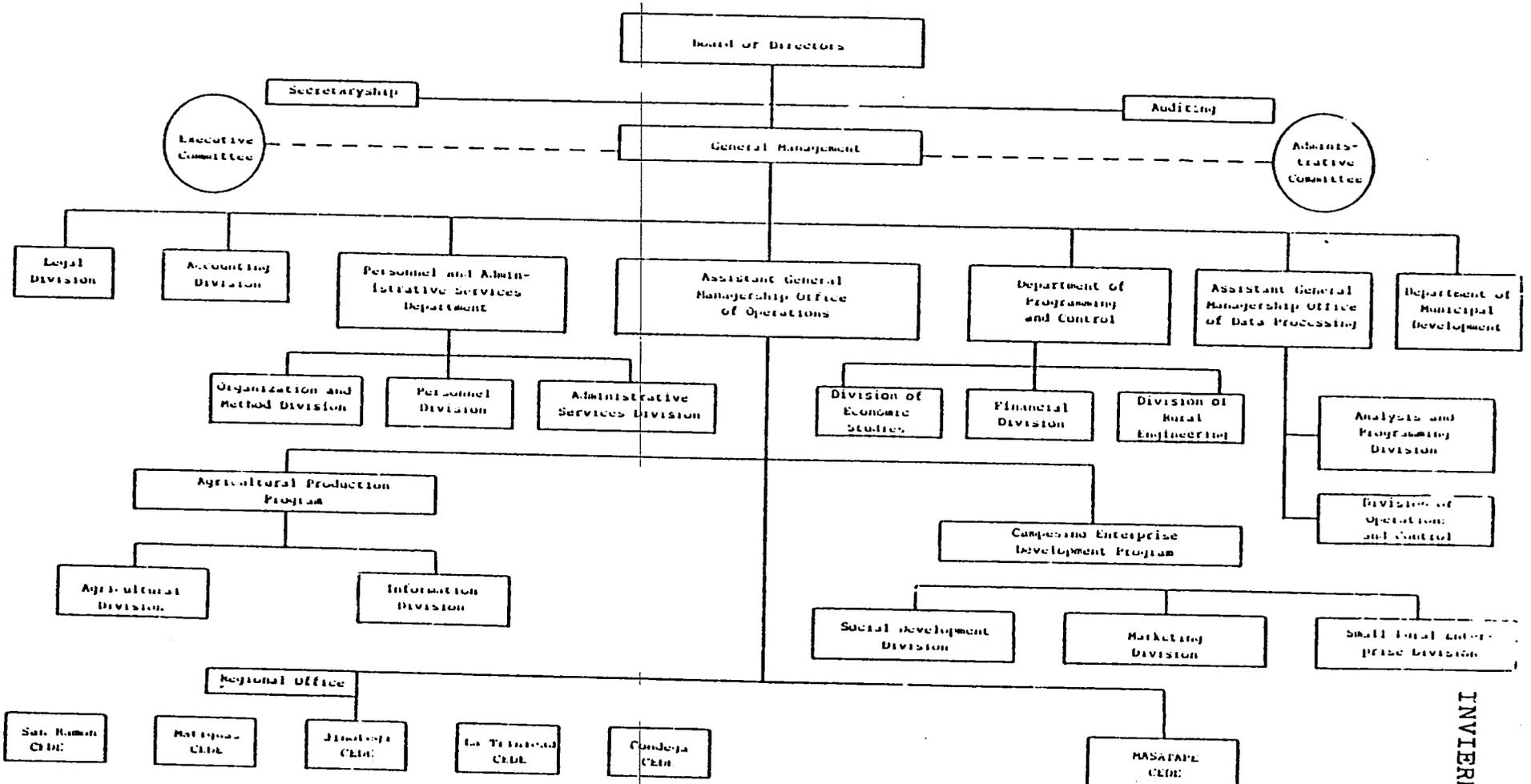
To help facilitate policy implementation by the General Manager, Gustavo Gomez-Casco,\* a three-tiered structure was created to provide necessary centralized supervision and follow-up action and crucial information feedback, especially during the initial two year period. This decentralized structure, composed of a central, regional and zonal offices, i.e., CEDEs (Centros de Desarrollo--Development Centers), provided the basis for a gradually-expanding outreach services. This structure and the central office organization are found on chart 6.

The Central Office, located in Managua, has the responsibility for interpreting the policies as presented by the Board, ~~developing program objectives and conducting evaluations, the~~ preparation of operational norms and practices, the design of management systems, providing logistical support and coordinating with the other government agencies within the public agricultural sector and other sectors. Two vice-Managers have been created, one for Operations and one for Data Processing. The Vice Manager for Operations provides the direct link to the

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\*The Manager is a graduate chemical engineer with considerable banking experience prior to being named. He had previously worked at INFONAC and prior to coming to INVIERNO was General Manager of the Banco Popular (a large urban-based banking operation). He was the principal architect of the management systems to be later discussed.

CHART I  
 INSTITUTO DE BIENESTAR CAMPESINO  
 (Institute of Rural Welfare)  
 Organizational Chart  
 1977



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Regional and CEDE Offices, and also for the supervision of the main supporting service units--(1) Agricultural Production Program, which includes an agricultural and an information dissemination division, and (2) the Campesino Enterprise Development Program, comprised of a social development, marketing and small rural enterprise division. The other vice-Manager is responsible for the administration and technical operation of the computerized management information and project support systems. The other offices include the legal counsel, accountant, personnel and administrative services, programming and control, municipal development and an independent audit unit.

The base level operational unit from which the variety of services offered by INVIERNO are provided is the CEDE. In late 1975, five CEDEs located in San Ramon, Jinotega, Condega, La Trinidad and Matiguas were chosen in Region V. These are market towns of around 10,000 people with such facilities as a bank, school, potable water, lights, and warehouse structure (82, p. 17) which facilitate basic operations and permit employee's families to reside in the same town. In addition, in order to reduce operational costs and still attend those areas that show promise (but don't have at least ten communities within a 25 kilometer radius), during 1977 sub-CEDEs were created in Pantasma, Yali, La Pita del Carmen and Wasaka.

Each CEDE is directed by a Manager, who among other activities, coordinates an outreach staff of technical supervisors

and support personnel. The technical supervisors are responsible for coordinating the agricultural extensionists,\* social promoters, input and marketing specialists, farm budget technicians and cashier personnel, all of whom are assigned to specific communities where most of their work is conducted. The CEDEs are presently extending their services to 283 communities each averaging around 80 families or around 500 per community. As noted on table 4, the range of communities served per CEDE is from 26 to 58, depending on population density and road conditions.

TABLE 4  
COMMUNITIES SERVED PER CEDE\*

CEDE	1976	1977
Region V	<u>178</u>	<u>225</u>
<u>San Ramon</u>	<u>28</u>	<u>43</u>
Matiguas	20	26
Jinotega	45	47
La Trinidad	46	51
Condega	39	58
Region II		
Masatepe		58
Total	178	283

\*SOURCE: INVIERNO Programacion y Control

\*Later, this element will be termed "Agromoc."

### Program Financing

Given the new governmental mandate significant financial resources were required to both the public agricultural sector and to INVIERNO. Considerable startup investment funding to provide for the increased levels of capital investment, building, equipment, and professional personnel and increased operational expenses was required.\* The total estimated operational budget for the agricultural sector was to increase from about \$16 million per year to over \$39 million during the years 1972-1977 (84, Annex VH, p. 4).

INVIERNO's initial financial requirements, some of which were incorporated in their original charter, are noteworthy. As stated, \$14.3 million was to be provided by the government in capital assistance, and in addition, "technical assistance" expenses related to social promotion, training, etc. would be reimbursed from the General Budget (81, pp. 12-14). For these ~~costs an estimated \$18.6 million was to be provided from treasury resources during the initial five year period~~ (84, pp. 114-115).

Additional support to this long term government commitment came from a \$12 million loan provided by AID in September

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\*G. Donald's review of the Spring Review documentation noted the increased costs associated with small farmer focused programs (18, p. 31):

"Credit programs are costly, and in a successful credit program the value of the benefits must exceed the costs. Among the costs are administrative operation, supervisory costs, alternative opportunity costs, default and other social costs."

1975. It will be recalled that AID had collaborated with the UNASEC survey in support of the government's new direction.\*

As reported in the most recent evaluation of the program, the Nicaraguan government has provided all capital assistance requirements to INVIERNO (the unspent portions being deposited in long term interest bearing accounts). Reimbursements for technical assistance expenditures, however, have lagged behind schedule (85, p. 12). This shortfall, which has not significantly affected the project operations (85, p. 145), was brought on by decreased coffee and cotton revenues, a major outbreak of coffee rust which required an estimated expenditure of \$14.3 million over a two year period to control (70, p. 5), an economic recession and the recent political unrest which has caused funds to be diverted from all budgets to Defense.

#### Program Activities

Responsive to the issues and constraints identified in the Sector Assessment, a series of interrelated services and activities were initiated under the INVIERNO Program. The services provided by INVIERNO directly or by other agencies assisted by INVIERNO relate to community organizations and promotions, agricultural training, agricultural credit, agricultural input supply, crop marketing, adaptive research, family gardens,

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\*In addition to the loan which provided the INVIERNO program with a combined total budget of \$30.6 million to cover the initial phase of the program, an additional \$2 million from AID was designated to assist the Department of Sectorial Analysis, National Training Center and the regionalization plan of the Ministry of Agriculture.

small rural enterprises, rural access roads, municipal development, land sale guarantee, rural housing, public health, and rural education. A brief description of these mutually supportive activities is provided at annex 8.

Though certain responsibilities are undertaken by INVIERNO directly with the participating community, when other governmental entities are better equipped to address the particular request, they are either contacted or contracted directly by INVIERNO or by the community. The distribution of these different project responsibilities is reflected on table 5.

TABLE 5  
THE COORDINATION OF RURAL DEVELOPMENT SERVICES

Project Component	Responsible Agency	Supporting Agency
Community Organization/Promotion	INVIERNO	
Agricultural Training	INVIERNO	
Agricultural Credit	INVIERNO	
Agricultural Input Supply	INVIERNO	
Adoptive Research	INTA	INVIERNO
Land Sale Guarantee	Central Bank	INVIERNO
Family Garden	INVIERNO	
Small Business	INVIERNO	
Rural Access Roads	Ministry of Public Works	INVIERNO
Municipal Development	INVIERNO	Ministry of Gov't
Rural Housing	INVIERNO	
Public Health	Ministry of Health	INVIERNO
Rural Education	Ministry of Education	INVIERNO

### Early Achievements

During the six month period after its formal creation in May 1975, new offices were established, new people recruited, hired and trained, lengthy conditions precedent to the disbursement of the AID loan were completed, equipment and vehicles were purchased and the various management and operational systems developed. Community visits were made to promote the project and to determine interest in program participation for the first planting cycle in 1976. From the approval of the first agricultural loan in March 1976 up to the end of 1977, most of the above-mentioned projects and services were introduced in 283 communities in Regions V and II benefitting directly over 30 percent of the total rural population in the two regions (87, p. 9). In a short period, a series of services heretofore never provided were extended to a significantly large number of the rural population.

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Three years of field operation is too soon to measure the impact of the project on its users, and thus "success" cannot yet be acclaimed. However, many outsiders have examined the project and are enthusiastic about its record thus far. Much of this praise results from the innovative management systems developed to administer the wide range of program activities.

The American Technical Assistance Corporation's Dr. Albert Brown, coordinator of the first annual program evaluation concluded (88, p. 2):

The entire operational system from personnel recruitment, through training to execution is one of the most effective we have seen.\*

INCAE, the Harvard-created MBA school, conducted a study on the management of rural development which concluded (70, p. 31):

Among the principal strengths of INVIERNO are its innovative concepts (lines of credit to campesinos, integrated packages of services; variable repayment terms), its strong management team and the wealth of experience and expertise in computerized management systems.

Professors Claudio Gonzales Vega and Ronald Tinnermeir's study of the agricultural credit program in relation to Spring Review findings commented (83, p. 127):

There can be no doubt that INVIERNO is an extremely innovative effort to solve the problems of the Nicaraguan small farmer and that it has made extraordinary progress in outreach during its first two years of experience. This institution has adopted more concepts and procedures of the kind recommended during the AID Spring Review of Small Farmer Credit and in other pieces of the recent literature on the subject than any other credit agency in Latin America, while in certain cases it has even innovated beyond the Spring Review recommendations.

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And also, the second annual project evaluation coordinated by Dr. Henry Hopp of the Robert R. Nathan consulting group remarked (85, p. viii):

Thus at the end of the second year of operation, INVIERNO should be regarded as a pilot program which is well run and extremely interesting. It has a good target group focus. The multi-service approach that it embodies is sound, and it, along with its AID cooperator, has demonstrated the ability to operate such a complex program while maintaining the pragmatism and flexibility essential to benefit from experience.

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\*The corporation's consulting work is mainly confined to Latin America and Africa.

The Management of Integrated Agricultural  
Development

The provision of basic agriculture development services requires the presence of well-managed low-cost systems which assure the timely and efficient delivery of such basic services as local organization, technology, agriculture credit, and input/output commercialization.\* Optimum weather conditions are usually crucial for more productive yields. However, because of ever-changing and unpredictable patterns, minor delays or oversights in the provision of these services can have disastrous effects on production and can render development programs wholly abortive (89, p. 7). The provision of these services is further complicated since they must be provided to distant heterogeneous farm units employing traditional practices all with different input requirements.

What follows is an effort to illustrate (1) the many complex factors which were considered in providing basic integrated agricultural development services and the (2) innovative management personnel and operational systems developed by INVIERNO in response to implementing its broad mandate. The following themes related to central management systems, personnel administration, community participation, diffusion of modern technology, agriculture credit, commercialization of inputs and outputs, and program evaluation will be discussed.

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\*To narrow the focus of the INVIERNO Program's total needs approach to development, emphasis here is only on these core agricultural development services.

### Central Management Systems

The first program evaluation coordinated by Dr. Albert Brown concluded that INVIERNO is perhaps the most tautly organized and exquisitely controlled organization known to members of the evaluation team (88, p. 38).\* From a central management perspective some of the key features responsible for this conclusion would include the following themes: program planning, executive committee, operational manuals, follow-up supervision, auditing, accounting and automatic data processing systems.

Program Planning. INVIERNO has placed a high priority on systematically developing global program and annual project component planning as a basis from which management objectives and administrative requirements can be determined.\*\* Where possible, specific time-limited quantifiable "out-put" objectives are determined which serve as "bench marks" for periodic reviews by the executive committee, annual project and program evaluations, and for determining estimated resources to attain project out-puts.

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\*ATAC concentrates their consulting work mainly in Latin America and Africa.

\*\*According to the Spring Review, planning is often a deficiency of newly-created programs (24, p. 27). "Newly created small farmer credit programs are often handicapped by having been saddled with partially incompatible goals and no established priorities. The problem is inherent in small farmer programs, which mix efficiencies and equity objectives. To guard against this tendency, small farmer credit programs . . . need to give clear priority to the role of supporting the 'small farmer sector' and establish criteria to measure whether that ambitious role is being performed."

In order to establish uniform criteria throughout all areas of operation, during the first two years principal responsibility for the programming and planning was with the Program and Control Department which worked with appropriate central office personnel in developing program documents. They first produced the Preliminary Implementation Plan in October 1975, which provided a general description of each component, its estimated budgetary requirements and a general phasing of program activities over a five year period (90). Using this initial effort, a subsequent more detailed implementation program plan was developed in January 1976 which provided more exact input/output estimates and more detailed purpose statements for each program component (91). These two general documents served as the reference for the preparation of the first annual plan which included detailed quantifiable indicators related to all project resources requirements, the expected products from these resources and included a detailed PERT chart plotting principal project activities (92). Subsequent operational planning documents have been presented annually.

The input/output planning approach assists in (1) providing quantifiable objectives for easy reference by management and field, (2) periodic reviews and annual evaluations, (3) assuring that the necessary resource requirements to attain the projected level of activity can be made available, and (4) providing one common reference point from which the necessary operational manuals and training requirements can be prepared. As will be reviewed later, resulting from conclusions

of an extensive inhouse evaluation, it was determined that the program was sufficiently developed to permit that all annual planning activities be generated from the community level and coordinated at the CEDE. However beginning with the 1978 annual plan, preparation is now a "bottom up" methodology initiated at the community level which permits CEDE participation before being finalized at the national level. (This process will be discussed under Community Participation.) The finalization of the plan is coordinated with DIPSA, the Sectorial Planning Department, to assure concurrence within overall sector objectives.

Executive Committee. This committee, which is chaired by the INVIERNO General Manager, includes the two vice Managers, office directors from all other staff and line units, the Regional Manager, one CEDE Manager (rotations are made with each session) and representatives from DIPSA and AID. The ~~committee meets regularly in order to assure "the most effective~~ follow-up of program activities and to have a better coordination of the work developed by the different departments and programs (93, p. 74). Given the experimental and complex nature of the program, beginning soon after its creation, weekly\* day-long uninterrupted sessions (sandwiches are brought in) were held to discuss and review project activities, compare results, formulate plans, request operational policies, and request follow-up status reports on previously requested activities.

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\*During the third year of operation, bi-weekly sessions were introduced.

Given the complex areas that have to be considered before important decisions are made, this mechanism provides a participatory forum from which all issues are considered prior to decision issuance or policy formulation. Other beneficial by-products generating from these meetings include (1) the imparting of operational learning experiences for the younger office directors, (2) developing a strong feeling of program unity, and (3) assuring effective coordination of all program activities.

To assure follow-up actions and disseminations of matters discussed to all operational levels, minutes of the important decisions reached are prepared. Also a listing of those specific responsibilities commissioned during the meeting is made with the responsible official estimating when the assignment is to be completed. Since this listing is reviewed each meeting, group pressure usually assures compliance with his original "pledge."

As reported in a study on sectoral management in lesser income countries, for which INVIERNO was one of two development programs studied (94, p.21-22):

. . . The executive committee seems to have helped launch and keep together the many INVIERNO components. This committee allows for group decision making and feedback; the integration of program and administrative persons, the integration of Central Office and local office persons. . . .

Operational Systems Manuals. To assure that constant standards of quality services and an optimum level of efficiency are provided by the field cadre group of new personnel working

in distant areas, specific operations procedural manuals touching on all phases of program operation were prepared. By the end of 1977, over 130 manuals had been developed.

The manuals were designed to reflect three important operational considerations (81, p. 15):

- 1) Operational and general costs ought to be maintained at the lowest possible level through the design and implementation of systems and procedures that are efficient for the operational control and evaluation of each project;
- 2) All the systems and strategies must be designed under the supposition that these have to be adequate for the short and long term and at the rate at which the program extends itself;
- 3) The systems and procedures must be designed in such a form that results expected are relatively easy to administer and supervise by the CEDEs. This focus helps to diminish operational risks and costs and make simpler the training by CEDE managers.

The heavy reliance of detailed but clearly understood manuals assured, among other things, that distant field personnel have a standard reference manual and that they are employing themselves in what is intended to be an efficient manner. Consequently, supporting supervisory responsibilities are somewhat reduced for there is reasonable assurance that field cadre are undertaking the required operation. In addition, the manuals maximize the time of field technicians to be programmed for technical matters, rather than performing administrative functions.

Quoting from the INVIERNO 1977 annual report (95, p. 9):

The administration's policy has been focused towards the design of decentralized and flexible service delivery systems adapted to the physical and social characteristics of the rural area which permit the delivery of services in a massive form appropriate to Program needs, central control and monitoring--normally with the aid of a computer. In this way, CEDE personnel can dedicate almost all their

working hours to service coverage without significantly increasing central office costs.

Extensive training sessions were developed to assure the mastery of these manuals by appropriate personnel. During the training sessions, emphasis is placed on role-playing technique so that the field application of the manual is well understood. Periodic reviews are conducted of the more often used manuals to determine their appropriateness. As more experience in the program is gained and consequently a greater knowledge of staff capabilities, provisions have been made to permit greater flexibility in manual application and decision by exception by field cadre.

Operational Supervision. In addition to the executive committee structure, which among other services institutionalizes follow-up actions on previously made assignments, a series of centrally-monitored reporting, activities have been developed to facilitate prompt information flow to management and to assure that maximum time of field cadre is spent in a productive way with small farmers.\* The CEDE, regional, and staff level units are levied specific report requirements for review and analysis by the vice-Manager for Operations. The three basic report components are CEDE, financial and expense analysis,

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\*Both the World Bank and AID concur that technical supervision of new agricultural technology is one of the essential activities of a credit project (1, p. 40 and 24, p. 31). However, since it is an expensive activity, according to the World Bank, "it must be subjected to careful evaluation and planning in terms of number, purpose and scope of visits of the supervisory officers to assure that benefits justify costs" (1, p. 40).

and efficiency indicator reports. Also, more decentralized and informal procedures have been incorporated to assure timely completion of assignment.

Each day, CEDE Managers complete a report of daily operations which is a one page summary statement of all credit and commercialization activities undertaken, including the monthly accumulative total (96, p. 4). Monthly reports are prepared by all central office directors and CEDE Managers for review by the Vice-Manager of Operations and the Department of Programming and Control. The CEDE report reflects "accomplishments"\* in relationship to the previous monthly plan and includes the plan for the next month. This presentation permits a review to determine "operational" evaluations of all CEDE activities.

Resulting from the information generated and other supporting information obtained at the central office level, the vice-Manager will also prepare a comparative analysis of all CEDE credit activities and all operational costs related to personnel, vehicle maintenance, office repair, gas purchases, etc. to make periodic seasonal comparisons. An analytical system has been prepared which attempts to compare the management efficiency of each CEDE against certain criterion\*\* which attempt

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\*Each plan includes simple one sheet summaries related to financial activities, loan repayments, sales of inputs, product marketing extension activities, work with community boards, community development projects, and miscellaneous activities (96).

\*\*Ten indicators have been developed some of which measure costs per socio assisted, gas costs per vehicle, maintenance costs per vehicle, banking cost per 1,000 cordobas (seven Nicaraguan cordobas are the equivalent of one U.S. dollar) in account, banking cost for every 1,000 cordobas recuperated,

to compensate for CEDE differences as to community size, distance, personnel levels, etc. Based on the formula developed, the consolidation of the various criteria result in a ranking of CEDE "management efficiency." The results of this analysis and various conclusions are forwarded to the General Manager for his review and action.

Another important supervision technique is the use of regularly scheduled meetings at the CEDE level, for CEDE Manager and meetings for specific technical staff. All CEDE-level personnel meet every Saturday to review the progress made in relation to their monthly plan and to prepare their individual weekly work plans. All weekly plans are consolidated on a bulletin board thus permitting coordinated use of vehicles and better supervision. Twice monthly, all CEDE Managers meet with the Regional Manager and the vice-Manager of Operations to review status of all project activities and to discuss in detail the problems and issues confronting field operations. In addition, periodic technical-level meetings, particularly of the agricultural supervisory personnel, are held at which time new information is disseminated and technical support requirements are reviewed.

In addition, provision is made for informal information exchanges and supervision activities. Each CEDE office, the regional and central are all connected with shortwave transmitting receivers plus a minimum number of mobile units which

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total for collection, visits per Agromoc, meetings per Agromoc, groups per social worker and projects per social worker (96, pp. 8-101).

allows for instant communication between offices on administrative or technical matters. Also, periodic inspection visits to all levels of operation are made by all supervisory personnel.

Internal Auditing. Most governmental agencies employ auditors to either conduct menial tasks related to voucher review, property inventory, time and attendance checks, or to the opposite extreme, to perform distant "inspections" with only limited participation in the resolution of the various recommendations noted.

The INVIERNO audit unit performs a support role participating for example in the preparation of many of the operational manuals, especially those related with finance management in addition to specific internal audit responsibilities. Their collaborative operational methodology permits the resolving of problems as they develop.

As stated in their office manual (97, p. 4):

The traditional policy concept that would be attributed to internal auditing has been replaced by a new concept that tends toward the advising and technical assistance of personnel within the organization but without neglecting their primary responsibility of reviewing the operations and evaluating the internal controls function.

This unit is headed by a licensed CPA and includes five "junior" auditors all studying to become CPAs. Operational manuals related to accounting procedures, petty cash, purchase order, money and merchandise transfer, etc. and particularly those related with agricultural credit, input supply, and marketing services are almost always assisted by this unit. In addition,

considerable time is spent in the field with socios (member clients) and at the CEDE to confirm documentation regarding payments made, amounts due, etc. and in the reconciliation of differences. During the first year of operation, 13 percent of the agricultural credit loans granted by INVIERNO received this detailed verification treatment (94, p. 13). Presently, over 30 percent of their office's time is devoted to account verification of those socios with pending balances. This time-consuming trouble-shooting activity has been a good means to uncover socio-level project administrative problems and to detect the socio's impressions of program field operations.

In addition, periodic audit reviews particularly of CEDE-level operations are conducted to identify particular problems. These are usually discussed with the appropriate CEDE and central office officials, with final reports transmitted to the General Manager.

Expense Monitoring. Program finances are managed to reflect both the high social-overhead nature of the program and the government's commitment to finance those costs. As designed, the system permits the evaluation of (1) how much it costs per program component to operate a self-sufficient lending program, and (2) the adjustments or management interventions required to attain this objective. The system is an effort to recognize the "high" cost associated with the provision of what are usually traditional government services and separates these costs from what would be normal banking operations.

For accounting purposes, two broad categories were established; (1) banking costs to include those costs if the institute functioned only as a commercial bank, and (2) social economic development and promotion ("non-banking") costs which are all other expenses which would normally be provided by the government.\* For example, the "non-banking" costs are those related to community promotion, women's clubs, community training, agricultural training and extension, radio promotion, input supply, marketing, adoptive research and road construction. Since many of the INVIERNO personnel provide both banking and non banking services, the system had to respect these differences and make the necessary ratio adjustments. A listing was prepared by each central, regional, and CEDE center with the percentage of time, i.e. salary, of each employee devoted to one or both categories. Table 6 reflects the distribution of salary per job classification. Using these ratios as the reference point, similar distributions for operational and administrative costs are made (98). Monthly, total costs per cost center are prepared for analysis. Table 7 shows the distribution of funds per category during the first two years of

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\*Both AID and World Bank encourage this separation of accounts in order to determine project financial viability (25, p. 41 and 1, p. 39). Quoting the Bank (1, p. 39): "If a multiservice approach is adopted, the credit agency should keep costs and income from various activities separate and be reimbursed for the costs of services not related to the administration of the credit project. If a clear division of costs is not established, and if there is no compensation for ancillary services, it will not be possible to judge the financial success of the credit program. Then losses incurred by providing ancillary services may lead unjustifiably to abandoning the entire program."

TABLE 6

INVIERNO: DISTRIBUTION OF SALARY COSTS BETWEEN  
PROGRAMS BY LOCATIONS AND CLASSES OF EMPLOYEES,  
SEPTEMBER 1976 AND APRIL 1978

Location	Banking program		Other programs	
	1976	1977	1976	1977
<u>Central Office:</u>	----- (Percent) -----			
General manager	100	100	0	0
Auditing	75	75	25	25
Operations management	0	30	100	70
Program and control	0	0	100	100
Finance division	100	0	0	100
Municipal development	0	0	100	100
Legal division	-	100	-	0
Administration	50	50	50	50
Data processing management	75	75	25	25
Accounting	100	90	0	10
Agricultural production (MOC)	0	0	100	100
Farm enterprise development	0	0	100	100
Marketing	0	-	100	-
Technical assistance	0	-	100	-
<u>Regional Office:</u>				
Manager	100	0	0	100
Staff	0	0	100	100
<u>CEDEs:</u>				
Manager	100	100	0	0
Technical assistance	50	0	50	100
Social promoters (MOC)	0	0	100	100
Program and control	-	0	-	100
Rural administrator	0	-	100	-
CREDOMERC	75	30	25	70
Farm enterprise development	0	-	100	-
AGROMOC	0	20	100	80
Cashier	100	100	0	0
Driver	100	100	0	0
Warehouseman	0	0	100	100
Typist	75	0	25	100
Secretary	100	100	0	0
Helper	0	-	100	-
Bookkeeper	100	-	0	-
Watchman	100	100	0	0

SOURCE: INVIERNO, Finance Department (September 1976, in ATAC report, pp. 81 and 82).

TABLE 7  
 INVIERNO: CURRENT ACCOUNTS, 1976 and 1977  
 (Thousands of Cordobas)\*

	1976	1977
<u>Banking program</u>		
Income:		
Interest on loans	525	1,721
Interest on deposits	2,099	2,936
AID payments	--	291
Other income	--	32
Total income	2,624	4,980
Operating expenses:		
Personnel expenses	2,223	4,091
Administrative expenses	664	1,204
Amortization and depreciation	68	178
Portfolio default reserve	693	815
Other expenses	6	7
Total expenses	3,654	6,295
Profit (loss)	(1,030)	(1,315)
<u>Social development program (reimbursable by GON)</u>		
Income:		
Charges to GON reimbursement fund	10,906	14,281
AID payments	--	1,726
Other income	146	476
Total income	11,052	16,483
Operating expenses:		
Personnel expenses	7,322	10,049
Administrative expenses	2,715	4,185
Amortization and depreciation	745	1,907
Other expenses	270	342
Total expenses	11,052	16,483

SOURCE: INVIERNO, Financial Division

\*One cordoba is the equivalent of .14 U.S. cents.

operation. Both tables reflect cost increases in 1977 over those of 1976 which is the result of program expansion and also the high social input required during both years as the program expanded. In the last section a more detailed discussion on actual project costs and institutional "viability" will be provided.

Computer Application. The automatic data processing component has been a vital element in program execution, monitoring, and evaluation. Conventional computer systems and programs are undoubtedly used in banking programs as INVIERNO has done for such standard activities related to payroll preparation, program accounting, vehicle and property inventory control, etc. However, beyond these conventional uses, seldom is anything heard of regarding more innovative management applications.\* INVIERNO's vice-Manager for Automatic Data Processing, has developed a large number of programs which have greatly facilitated the rapid and efficient processing of a large number of individual credit applications, follow-up management information needs concerned with input requirements, payment status information et al. The agriculture credit system has been the principal client of this department, developing over 100 different programs for various credit-related activities.

Of particular interest is the computer application which assists the rapid processing of credit applications (to be

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\*For example, in my review of the operational aspects of small farmer credit projects conducted in the Spring Review, only one project mentioned the use of a computer.

discussed under Agricultural Credit) and the data bank developed which permits a rapid review and analysis of program activities. Claudio Gonzales-Vega contends that "INVIERNO's most important and innovative use of the computer . . . has been its ability to process a large number of individual small loans at a relatively reduced cost" (8, p. 112). Illustrative of the variety of the more important programs related to the processing and management of these loan applications is the following listing (the significance of these will be later explained); recommended itemized agriculture budgets per crop, master list of approved and rejected applicants, formal notification notes to socios with budget and activities, preparation of socio's contract, itemized maximum cash and input budget, master list of CEDE input needs, land tenure distribution and areas to be planted, review and adjustment of itemized maximum budget reflecting actual amounts and inputs received, adjustments to socio's accounts, analysis to determine socios' delayed payment requirements and time since last payment, loan amounts due based on harvest estimates, and loan reimbursement requests from AID (99). Other applications include the processing of all production-related data for the 100-plus training plots which are processed for later modifications of production recommendations, commodity pricing systems to advise socios on marketing alternatives, time/activity evaluations of extension personnel to determine best means to provide maximum extension work, et al.

The vice-Manager, a former IBM systems engineer, was brought in early at a time when the other operational systems had not been fully developed. By initiating and gradually expanding the development of computer programs, at the same time operational manuals were being developed, management control was centralized. A basis for quick evaluation from which project adjustments could be possible at all stages of implementation was made possible. It is doubtful that the many project activities and facets of these activities could have been designed and implemented to the degree earlier described had analysis depended on data generated manually. The computer application disciplined operation manual designers to detail project assumptions and clearly describe all procedures with greater precision than would probably have been considered if original dependence had been placed on a manual system (88, p. 39).

Though the operation has been praised as being a key factor for INVIERNO's early recorded achievements, to mount such a system requires an extremely competent staff. In addition to the vice-Manager, four programmers, two analysts, five key punch operators and one quality control technician (a total of more than 55 years of professional computer experience) were employed during the initial two and one-half years when most programs were designed. Also an IBM systems 3 model 12 computer and supporting software equipment was purchased. Though the annual salary and operational costs went up considerably in 1977 to \$130,900, most programs were then being developed.

Once finished, the 1978 budget was reduced considerably to \$66,150 (100, p. 17).

Some reflections on INVIERNO's experience from a management perspective with the computer are provided. (1) Though effective utilization requires the exact use of numbered codings by all Agromocs, which at first are difficult to master, the use of the computer has freed these personnel from detailed farm plan budget calculations and provided for impartial credit judgements. Both factors have permitted rapid and standard selection and relieved the technician for more important work. (2) The system forces discipline and precision by personnel on all levels of the operation and "evaluates" those who are not so inclined. (3) The system permits rapid analysis of operational research and economic data during all phases of project execution thus reducing the error factor so important to an experimental high-risk operation. (4) Once computer programs have been developed and perfected, it is imperative that a supportive analytical capacity be introduced to assure appropriate evaluation of data flood. (5) As the computer soon becomes the "heart" of the organization, constant coordination sessions from all staff and field level units are required. (6) Instead of management supervising a large number of clerks required to extract data piece-by-piece, with this system, management can provide more institutional development work related to critical analysis and evaluation.

Personnel Administration

Obviously carefully-designed management systems go for naught unless a competent, highly committed, and honest staff is present at all levels of operation.\* Studies of the INVIERNO program note that one of the program's most salient features is its highly competent and educated personnel (70, p. 47; 85, p. 47; and 88, p. 31). The personnel management system, nature of outreach personnel, personnel distribution, and training activities will be reviewed.

Personnel Management System. The General Manager and vice-Managers all have Master degrees or their professional equivalent, and all other department and office directors, Regional, and CEDE managers have M.S. or university degrees (70, p. 47). The rapid acquisition of such quality personnel within a new organization, required the development of an effective job designation and selection system, competitive salary scale, liberal fringe benefits, intensive career development in-service training opportunities, and a system for rewarding outstanding performance.

Once the need for a position has been justified by the office director and approved by the General Manager, a detailed job description is prepared delineating responsibilities and the minimum requirements felt needed to handle these responsibilities. Assuming no one within the organization meets the job

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\*It is remembered that personnel administration was the most noted of problem areas of the operational problems reported in chapter 3.

requirements, recruitment is initiated by the Personnel Office. This office receives applications and conducts confidential reference checks with prior superiors and personal references on those candidates that meet requirements in order to determine their technical capacity, work conduct, honesty, etc. Those with positive checks are interviewed by the INVIERNO office director, and once selection is made for an initial trial period, the General Manager provides his endorsement of the selection. A one month trial period contract is then signed. If adequate performance is observed during the trial period, the individual is then granted career status subject to performance measured by annual job evaluations. The system appears to be uniform in its application as most employees surpass the job description requirements and only in rare instances do outside political influences interfere in personnel selection.\*

To retain the quality staff willing to make the personal sacrifice imposed by the program, i.e. residing in somewhat rustic conditions usually distant from family plus working the long hours required prior to and during the cropping period, requires the provision of certain job incentives. INVIERNO offers a highly competitive and equitable salary schedule-- particularly so for the top management positions, a group hospital medical insurance plan and a voluntary savings plan.

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\*One of the most common issues identified by the World Bank was the ". . . politicization of the credit delivery mechanism."

"In many countries, politics has invaded the tactical and even the operational level of credit delivery. The choice of directors for the credit institution, and sometimes even of the staff, may be made on grounds of political loyalties rather than qualities" (1, p. 52).

Outreach Cadre. Given the many agricultural development services mobilized at the community level, specific outreach position categories have been developed. Respecting the primitive working conditions and many sacrifices associated with the job, youth seems to predominate within all categories discussed. The average age of these cadre is about 23. By far the largest category, the heretofore termed extensionist, is the "Agromoc." This category was based on the need to develop an agricultural technician with certain conscience-raising training designed to help convince groups of farmers of the importance of introducing changes in their agricultural practices. The Agromoc is usually a recent graduate (most often times in the top quarter of one of the three year technical agricultural schools) who has received considerable "MOC"\* training from INVIERNO intended to improve his capacity to communicate better with the rural poor and to interest them in change. He is the INVIERNO "point man" working within usually two to three communities to introduce agricultural technology, and to a lesser degree, do general community organization activities.

The other categories of outreach personnel include:

a) Credomerc - This acronym symbolizes the credit and marketing support responsibilities related to the (1) management of input deliveries, (2) advise on loan administration, and

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\*This INVIERNO acronym applies to the (1) motivation-conscience raising activity of involving project participants and community members to contribute in the development process, (2) organization-assistance in local development organization creation, and (3) capacitation--providing training in local leadership development, self-help mobilization.

(3) marketing assistance. As he also has the additional charge of administering the rural enterprise project, university graduates are being recruited for this position.

b) Social Promoter - This element provides overall community organization and promotion support, community development and women's organization work either directly, or after the Agromoc has requested assistance or alerts the promoter of a particular problem. Originally, only university sociology graduates were chosen, however as few had experience with rural conditions, more and more Agromocs with a high "MOC" ability have been trained for this job along with rural teachers.

c) Cashiers - This element provides the approved level of financial assistance to the socios and is responsible for loan collection.

d) Rural Administrator - Participates in a detailed double-entry budget system (to be discussed under Program Evaluation) working with a statistical sample of socios designed to get farm level data related to farm transactions and activities from which project impact under various farming situations can be determined.

e) Technical Supervision - This is the supervisory element responsible for coordinating and observing the above "team" of personnel. He works with them on the preparation of their weekly and monthly plans so that all activities are coordinated, coordinates use of vehicles so as to reduce costs, provides Agromocs with specific technical training as required, and conducts periodic supervision activities.

Personnel Distribution. Since program initiation, the trend has been to support field operations at the CEDE level. Proportionally, the personnel level at the central office has gradually declined. At the Regional office the levels have maintained the same. Table 8 reflects this distribution pattern. The large increment of personnel in 1977 is attributable to the opening of operations in Region II and of four sub-CEDEs in Region V.

TABLE 8  
PERSONNEL DISTRIBUTION\* BY UNIT

UNIT	Nov. 1975	% of Total	Dec. 1976	% of Total	Dec. 1977	% of Total
Central	82	40%	92	42%	106	34%
Regional	10	5%	11	5%	14	5%
CEDE	<u>110</u>	<u>54%</u>	<u>117</u>	<u>53%</u>	<u>190</u>	<u>61%</u>
Total Personnel	202	100%	220	100%	310	100%

\*SOURCES: AID Briefing Paper June 1976, INVIERNO Informe Anual 1975-76, and Informe de Labores, 1977.

The personnel distribution plan emphasizes the large mass of technical outreach assigned at the CEDE level, with the minimum of managerial staff found therein. Table 9 reflects this observation and also a similar technical professional staff emphasis at the central level.

TABLE 9

## PERSONNEL DISTRIBUTION BY CATEGORY, FEBRUARY 1978

Central Office		CEDE/Regional	
Manager, Vice-Manager Dept. Heads	9	Managers	6
Professionals in Technical Positions	43	Technical Asst. Supervisors	15
Para-Professionals	23	Agromocs	62
Secretaries	17	Social Promoters	17
Other	<u>17</u>	Cashiers	17
	109	Credo Mercs	13
		Rural Administrators	7
		Secretaries	11
		Other	<u>32</u>
			180

SOURCE: C. Gonzales-Vega (83, p. 55).

Resulting from the annual program planning exercises and a self-evaluation to be discussed later, future program expansion will probably not be done through the hiring of additional personnel. Presently, personnel distribution is a reflection of the level of agricultural technology employed by the socios within the community served, the size of the community, and the CEDE's targeted objectives as stated in the annual plan. For example in 1977, the table of organization requirements called for an average of one Agromoc for 80 socios (the first year average was 60), one technical supervisor for five Agromocs,

and one Credomerc for every 500 socios (102, p. 8). As the socios improve their abilities with the new technologies, as more group instruction is provided, and as operational services are reduced (to be discussed later), INVIERNO will expand into other areas. In order to bring about this transition, among other factors, the high level of technical assistance presently provided must gradually decline. As presently estimated, the level of socios attended per Agromoc would grow over a six year period to one per 300 socios (103). Other cadre elements would expand their coverage accordingly.

Training. Given the program's newness and youthfulness, considerable emphasis has been directed to extend service training to both management and technical staff. Global training needs were originally identified in the preparation of the first annual operational plan, and each year subsequent plans reflecting program objectives are prepared. To assure that both technical and managerial personnel completely understand the important implications of INVIERNO's operating philosophy and in order to facilitate the better interaction within the organization and with rural residents, much emphasis in 1976 and 1977 was directed to "MOC" and group-dynamics training. In addition, special training programs are provided to all field personnel in the operational aspects of all procedural manuals and in job-related technical skills. To assure complete understanding by all field cadre elements of these manuals, assimilations of all phases of the various activities outlined are conducted and observations are made by their respective supervisors. Though

the Agromocs, as will be observed in another section, have been the major participants in these inservice training programs, short courses of one to three days for particular cadre elements are also offered. In addition, efforts are made to receive improved management and technical skills training from National Training Center, INCAE--the Harvard sponsored MBA program--through the international research centers, and through the USDA. During 1977, \$120,000 was budgeted to fund project-supportive inservice training programs (104, p. 77) and an expatriate training advisor skilled in group dynamics and motivational training.

#### Community Participation

Though practiced in specific but limited supportive roles during the program's initial stages, beginning in 1977, the principal activity for successfully providing the core of agricultural and other social and economic development services has been related to intensifying community organizational activities. The main reasons for this new emphasis would be to: assure development objectives are in harmony with local needs; facilitate the administration and thus reduce project costs; better coordinate the non-INVIERNO related developmental activities with the other governmental units; and to institutionalize local needs within the developmental process.

A 1977 INVIERNO report emphasized the broader community approach (95, p. 15):

The Institute considers that only by means of organization will the communities be able to identify their economic, social and cultural problems, define the best

alternative for their solution and gather the necessary resources for the execution of the most viable alternatives. Besides, the organized groups are the most efficient means for the social economic and technical training, thus permitting a larger coverage and multiplier effect without increasing operational costs.

Presently, 283 communities are served by INVIERNO. These communities were selected after first calling a meeting at which time INVIERNO personnel would explain the program's objectives and activities and then conduct a brief survey questionnaire with a local leader regarding population, road conditions throughout the year, school, water, latrines, health facilities, community organization, basic agriculture production activities, and its agricultural potential (105, pp. 15-16). Reflecting the developmental precepts of the organization, the basic criterium are directed towards selection of poorer areas with minimum population levels which are served by roads and have some agricultural potential. The basic selection factors which must be met include: (1) a population of less than 300\* homes but more than 20--all of which are within a radius of five kilometers--(smaller communities are served if on the route to a "larger" community or if less than three kilometers from a selected community), (2) within a 25 kilometer radius from the CEDE or sub-CEDE, (3) are served by a road passable during the rainy season, and (4) demonstrate at least "medium potential" for agricultural production (105, p. 11). In order to minimize operational expenses, the effort was to saturate the areas adjacent to CEDEs. However, given the large number of communities that could be

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\*In Nicaragua, usually the smaller the town, the poorer the people.

served and the mobile nature of INVIERNO, these restrictions particularly related to road conditions\* and population density were developed.

Though each community has had its own traditional leadership structure, as observed in the UNASEC study, Nicaraguan communities have enjoyed limited development experiences from both community organizations and cooperatives. Respectful of this limitation and also of the limited initial social development activities undertaken in the first year of the program, a changing local promotion strategy has evolved based on INVIERNO's expanding program orientation. To motivate interest in the program, concentration was first placed on the core unit of basic agricultural services with an appropriate participating strategy supportive of that priority. Later, as other activities were undertaken, and as communities developed a confidence in INVIERNO, the participatory strategy was significantly broadened.

Resulting from the initial community meeting with INVIERNO Agromocs and social promoters, if interest is detected in participating with INVIERNO, and if the minimum conditions are met, the community is requested to select a "volunteer collaborator" and a three man consulting group. The collaborator, who is usually a local leader, is provided training by INVIERNO on the program and its components, and later serves as a linkage to facilitate in the coordination of meetings and demonstrations by INVIERNO with the community. The consulting group, composed

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\*The road conditions of even those communities selected are so bad that often times four wheel drive vehicles will not enter, and some sub-CEDEs have horses for their technicians.

of local leadership, assists during the time of credit application in reviewing all applications to determine credit "worthiness." These were the initial community participating activities.

Later, community development activities developed. Though many projects were undertaken, resulting from the observed results and the increased attention by other governmental units in the two regions (who tended to indiscriminately decide what was best for the communities), it was determined that a more comprehensive local organization strategy had to be developed. Therefore as the program expanded, INVIERNO became increasingly interested with developing a broader-based participatory activity.

Beginning in mid 1977, the social promoters began introducing the concept of the community board (Junta Comunitaria) as the one locally-elected "rector" organism of all community activities. This board would be responsible for expounding on the local needs in priority order, organizing work groups, and putting in execution those projects in benefit of the community (106, p. 1). During a three month period, the social promoter would first take the lead in (1) talking with the community regarding the need for organizing a board comprised of from three to seven members dependent on the population level, (2) assisting in its election, and (3) providing the board with some initial training. In addition, a formal four day training program is provided for all board members to assist them in developing internal teamwork, identification of development problems, prioritizing of these problems and in developing preliminary

community plans (106, p. 40). As of March 1978, 66 boards had received training. It is anticipated that rather than diluting the limited leadership levels at the community and ignoring community preferences by initiating projects not within the community's plan, the other governmental agencies working in the area will respect the board as the new focal point responsible for local development.

At the same time, INVIERNO is developing approaches to better utilize the board in direct support of the program. The consulting committee responsibilities have been transferred to the board. The board will be assisting in the loan collection activities and also in input distribution and community marketing services. In addition, draft legislation has been developed which would permit the board to receive commercial loans.\*

As local organization gradually assumes additional responsibilities as they develop within the program, other activities within an area-wide cooperative-type structure are envisioned. This unit, over time and with considerable INVIERNO management and financial support, would provide most of the services presently offered by INVIERNO. INVIERNO's high costs related to providing credit, input supply, marketing services, etc. would

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\*It is commonly believed that one of the best means to reduce costs and to handle large numbers of clients is the grouping of farmers for credit transactions and technology transmissions (1, p. 63 and 24, p. 24). However, the difficult aspect of group lending is one activity for which no simple recommendation is yet available. As concluded in the Spring Review, "We are not recommending against loans to individuals, only that individuals be grouped at some stage in the credit system so that the small farmer credit agent is greater than one to one" (24, p. 24).

be reduced over time and their responsibility replaced by the new structure. Under this arrangement, INVIERNO could "graduate" socios to their own local service unit thus permitting the INVIERNO structure to be transferred to other areas.\* (This model will be referred to later in Agricultural Credit - Commercialization).

A recent report reveals the important role for these organizations in the future as INVIERNO begins to expand its program into other areas (95, p. 15):

It is considered that these organizations, with the advice and financial help from INVIERNO, eventually will provide to their members much of the services, including certain technical assistance that currently is received directly from INVIERNO. . . . INVIERNO's only participation will be for the introduction of new technologies that are being developed or in order to organize more productive activities. This point signifies a release of funds that could be used for the Institute's expansion to other zones without a significant increase in the non-banking program expenses.

#### Technology Generation and Dissemination

UNASEC commented on the declining yield per acre productivity levels within the small farm sector, and attributed much of this to the limited application of available research appropriate for the needs of this sector and the absence of basic services to improve producer productivity. It was uncommon for

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\*AID is the only donor which proposes a "graduation" process as a means to transfer the more subsidized programs to a wider target area (24, p. 32). This recommendation, however, assumes that the commercial banking system will deal with the successful small farmer, borrowers will be provided for, i.e. graduated, by the commercial banks. INVIERNO doubts that the bank will do this, but is concerned about program expansion without increasing operating budget.

the traditional farmer to select improved varieties and modern inputs for basic grain crops. Within Region V, at the time of program initiation, only about 30 percent of those first entering the credit service, had ever used chemical fertilizers on a regular basis and a significantly smaller number used pesticide. No tractors were employed in land preparation, using instead oxen or the traditional planting stick. Forty percent used their own seed on a regular basis (107). Only rarely did the small producer cultivate non-traditional horticulture and cash-crop capable of generating more income.

Respecting these technology limitations, INVIERNO strategy links credit needs to the adoption of new technology. First the traditional basic grains farmer is introduced to an improved technology through the selection of two planting alternatives. Selection is keyed to the farmer's prior experience with chemical fertilizers. For example the "A" technical guide would provide improved seed, liquid pesticide and no fertilizer along with funding for land and oxen rental. Principal technical emphasis is placed on soil preparation, pest control, weeding and greater plant density. The more expensive "B" guide includes the above activities plus nitrogen and complete fertilizers, solid and liquid pesticides, transport costs, shelling costs and extra labor costs. Socios usually enter the program at the "A" level, and once confident in this technology application, they are encouraged to move to the "B" system, and from there, gradually into more labor-intense non-traditional income-generating crops (108, p. 20). The long term objective is not to raise

income to a higher level of poverty, but rather to provide a series of alternatives based on improved technology to achieve maximum income by employing all farm resources through the use of improved technologies (109, p. 1). The attainment of this objective, requires among other things, the efficient and permanent introduction of new cropping alternatives and technologies, the direct participation of supervisor and agromoc personnel with participating farmers and the careful coordination with the other supporting services soon to be discussed.\* Features developed to assist these technicians in this ever-changing process of incorporating new technologies include technical production guides, training, extension plots and the work by INTA.

Technical Development. Considerable attention has been directed to the preparation of production manuals and technical guides which provide basic information sources for the Agromocs to better assist the socios. Originally these technical reference aids were developed for the traditional maize, bean, and sorghum crops, but numerous other guides have since been developed based on national research or from centers with similar conditions. Each Agromoc is instructed in all the points related

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\*The Spring Review placed special emphasis to the introduction of a suitable new technology as a condition for subsistence farmers for receiving credit. Significant increases must be demonstrated in the new technology to reduce natural risk factor. "The new technology must offer to present yields so substantial as to persuade risk-averting farmers to depart from traditional practices. In cases where a new crop is introduced, the technology must offer an input/output price ratio of comparable appeal (24, p. 16).

to soil preparation, planting distances, fertilization application, disease control, improved storage, etc. covered in the guide. He is then tested as to his knowledge. Each guide contains an itemized input budget on a per manzana basis, including person-day labor requirements.\* Expected yields are compared with total costs and labor inputs "invested" and average market prices in order to provide an estimate of net income possibilities. The detailed financial studies to include opportunity costs--for each crop and all agronomic data provide a sound basis from which alternative cropping activities can be introduced. The technical guides offer the best generalized guide for the area but also are flexible enough to permit local adaptation, which is encouraged.

The number of technical production guides has increased considerably as socios have began diversifying their activities and as Agromocs have become more proficient in mastering their new skills. During 1977 for example, 15 non-basic grain manuals were developed, and by 1978, an additional 20 had been prepared and tested. Obviously, the introduction of these new guides has required considerable attention directed to the training of supervisor and Agromocs. During 1977, seven courses averaging three and one-half days and four one-day workshops were held requiring almost 30 man days (104). However in 1978, 24 courses

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\*Considering the employment generation objectives related to the program, it is interesting to observe that "B" maize requires seven additional man days (which can't be met by a family of 6) per manzana per cropping period more than "A" (109). For "B" beans, the estimated additional labor that would have to be contracted is nine days (110), and for tomatoes, it jumps up to 42 days (111).

--each averaging almost two days in duration--were programmed (usually in the less active period) thus requiring the supervisor and agromocs to spend 42 man days exclusively on technical training (109).

To prepare the technical staff in the cultivation practices of certain non-traditional crops, and to a lesser degree, spark local interest, a series of extension plots were established for Agromoc and supervisor use. Seven of such plots were established in 1976, while in 1977, forty were established --ten being vegetables, 19 food grains and potatoes, and 11 industrial crops (113, p. 61; 95, p. 18). Once good results have been obtained from these plots and technical confidence is achieved, they are transferred to the community-level training plots where socios can observe the various responses more closely.

Illustrative of one of the most crucial variables by which the program's long term objectives can be obtained, i.e. the availability of appropriate technology as socios gain greater confidence with more modern technologies, is the research work being done by INTA. Under an INVIERNO contract with INTA, research in new horticulture and basic grain crops, soil fertility and fertilization, cropping systems and insect control has been initiated. Research is done under conditions similar to those used by the small farmer. Within a four year period

proven alternative adopted for small farmer use will be introduced.\*

Socio Training. To facilitate dissemination to the socios of the variety of technology combinations being developed, a series of complementary training techniques to include demonstration and visitation, training plots, and a radio program are employed.

One of the purposes of the MOC training is to help facilitate the gradual acceptance of new technologies and to do this via socio groupings.\*\* Based on a visitation plan previously developed by the Agromoc with the community, the colaborator is to help in organizing demonstration meetings. The preparation of the visitation plan was coordinated to correspond with a detailed listing of the principal agricultural events from land preparation to harvest (115). This synchronization permitted the preparation of group demonstrations to relate to the most relevant cropping activity. During the first two year period, bi-weekly group meetings were held. Though group emphasis was the preferred system, individual visits were also encouraged to respond to particular problems and to facilitate in establishing

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\*This emphasis on new research was also flagged during the Spring Review as one of the main conditions for credit program success. "In the long run, the only way to assure a continuous stream of profits is to invest in research and thus provide the small farmer borrower with a succession of cost-reducing technologies" (24, p. 17).

\*\*Working through groupings was to be preferred to provide standard instruction to a larger number of clients in a more efficient way and as a forum for the discussion of broader issues confronting the community (114, p. 6).

a positive image within the community. Such visits of not more than one hour each were to be held at least once a month or upon special request of the socio or collaborator (114, pp. 17-18).

An essential component of the training sessions is the work to be conducted at the training plots. These are located in highly-visible areas usually one between two communities which permits many interested farmers to observe the production differences between traditional and recommended practices. Cooperators, many of whom are also collaborators, provide their land while INVIERNO provides the necessary inputs and technical assistance. Assuming the farmer employs the recommendations provided by the Agromoc, the farmer receives the production from both the control and modern technology sections. However, if there are losses, INVIERNO assumes all costs. The plots were designed to facilitate communication of improved practices, provide an opportunity for detecting possible problems with the recommendations being made for the area, and to facilitate in local leadership identification (116, p. 1). Group field days were to be held to introduce all phases of the operation and to permit farmers to take an active learn-by-doing role in the operation. Records of input applications and treatment observations are recorded after each meeting, along with production data. This information is then prepared for computer processing and subsequent review and analysis. Detailed information can be provided to the Agromoc to assist him in making adjustments to certain manual recommendations. In addition, socios are provided

economic information to assist them in farm management decision making factors.

During the initial year of the program, 82 training plots were established for maize (61), beans (11), sorghum (6) and vegetables (4) (113, p. 59). Reflecting the program strategy, in 1977, a greater emphasis was placed on non-traditional crops and thus an expanded number of plots in Region V was observed--maize (59), beans (5), sorghum (2), horticulture (24) and potatoes (4) (95, p. 18).

As the number of socios increased considerably in the second year, for cost considerations INVIERNO began to question the policy of providing both group demonstrations and individual visits. On the average, 16 demonstrations were provided by each Agromoc in the first year at each community with an average audience of around 30 farmers. In addition, an average of 4.7 individual visits to each socio's plot in the community were held (113, p. 58). If this trend continued, operational costs would not permit the expansion of project operations. To permit a gradual geographic expansion it was planned that the level of socios per Agromoc would have to be expanded over a six year period from 70 to 300 socios.\* To accomplish this, considerable reduction of individual visits priority attention to group instruction was required. To prepare the Agromocs for this new priority, in 1978 a contract was signed with the Israeli

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\*Compared with world standards even the 1:300 ratio is high. For example, Kenya is reported as having one of the highest extension worker/farmer ratios in the world of 1:310 (117, pp. 19, 77).

extension group to train all Agromocs in a more effective group extension training methodology.

Expected to play a more important role in technology diffusion is the early morning half hour INVIERNO radio program, Voces Campesinas. This program, specifically directed to the campesino audience, has provided information on commodity prices, market activities, and some general planting, health, and nutritional information. Since surveys indicate that this program has between an 80 and 90 percent audience among rural residents (95, p. 19), this activity is to be re-structured to provide more technical information to the farmers. A more comprehensive training activity linking the radio program with specific technical matters related to the Agromocs presentation is being developed.

The results of these many technology diffusion activities are promising, especially when the severe drought in both 1976 and 1977 is taken into account. The above practices, supported by the other ancillary systems to be mentioned later, have contributed greatly to alter the declining yield trends, earlier reported by UNASEC. For the first planting periods of 1976 and 1977 the use of the more modern "B" technology increased from 25 percent of the total socios planting beans and maize to 70 and 56 percent respectively (118)\*. There was a noticeable change from traditional to non-traditional crops planted in the first planting for the same two year period. Land area devoted to vegetable and potato production increased almost four fold (83, p. 126). Production yields of socios during the drought

\* For illustrative purposes, this rate of technology change can be compared with the CIMMYT-sponsored "Puebla" project which introduced new maize technologies to small growers. During a six year period former use of "highland" intermediate levels of nitrogen fertilizer - i.e. B technology, increased from 18 percent to 58 percent of total participants. The Puebla Project, Mexico, 1974.

year compared favorably with averages for normal periods particularly for maize. The national maize yields for the first planting is 8.2 quintales\* per manzana, or 0.574 kg per hectare whereas INVIERNO socios (A and B combined) obtained 17.6 quintales per manzana, or 1.232 kg per hectare (113, p. 61). Using maize, the most recent program evaluation compared "A" maize with the traditional system and resulted in a 22 percent increase, a "B" and "A" comparison resulted in a 19 percent increase, and "B" compared with traditional systems yielded increases between 41 and 50 percent (85, p. 111).

#### Agricultural Credit

To address the proposed governmental objectives, it was determined that a non-traditional approach to agricultural credit was required. Whereas the INVIERNO priority was promotion of the economic well-being of the small farm sector, the commercial banking operation of the National Bank of Nicaragua viewed credit as an end in itself. The BNN employed the traditional "supervised credit" model, and was constrained by their "banking mentality," cumbersome procedures, insistence on legal documents often time unavailable, and land collateral. The traditional practices employed were inappropriate to support the new government priority (119).

To address the complex problem of offering a large number of traditional farmers lacking collateral residing in distant communities and needing only small amounts of capital on a

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\*One quintal is the equivalent to 100 kilos and one manzana is the equivalent to 0.7 hectares.

timely basis required the development of a special system never before available in Nicaragua. A mobile community level service concept was chosen.

As described in one INVIERNO report (113, p. 41):

The distinctive characteristics of the INVIERNO agricultural credit project is that the producer realizes all of the required activities to formulize a loan application, acceptance, contract signing, receipt of money and payments in the community where he resides. In order to adopt to the situation and circumstances of the campesino, the property guarantees will not be demanded confiding on his honesty, will to work, and desire to progress.

To efficiently implement this concept, a long series of operational matters related to loan application, selection criteria, membership, disbursement, interest rate and loan repayment were developed.

Loan Application. The initial mobile banking activity is the completion of a simple application form at the community level. Based on program experience, this procedure is initiated well ahead of each planting period so that if loan approval is granted, the socio can make the arrangements to obtain necessary land, oxen, and labor. At a previously-arranged time, coordinated with the volunteer collaborator, all interested participants (we will assume that all are new to the program) meet with the Agromoc. He first explains the INVIERNO program--its objectives, requirements, obligations, and then assists in the completion of application forms. The two page form, designed for later electronic processing, is completed by the Agromoc using appropriate numerical codes corresponding to the information provided by the applicant. Basic information related to

age, length of residence in the community, dependency on farming, land tenure situation, present level of farm investment, etc. is recorded. A simple planting program is noted based on the applicant's cropping activity, amount of land for each activity, experience with fertilizer, equipment and investment needs, and if he has an outstanding loan. The Agromoc is provided a special code book which applies to all categories and can provide the applicant with information on the various amounts and prices for each proposed activity as requested. However as the system is all designed for computer processing, he does not waste the farmers' time nor his by making individual calculations which later can be more quickly and accurately done for him. The intimate nature of this dialogue permits the technician to know personally each client and to have a perception of his resources and capabilities as a farmer. Basic consulting and reference materials are periodically reviewed to verify appropriateness and to reflect changing prices.

Upon the completion of all individual forms, three members of the community board convene to review in private the accuracy of the data provided, verify the applicant's credit worthiness, ascertain whether he has the family labor to undertake the planting activity requested, and to determine if the area to be financed is less or equal to the amount of land he possesses. If the board is not clear on a point, the applicant is queried further. Finally, the Agromoc makes his judgement of the applicant (120). The supervisor later reviews each application, as does the CEDE Manager before submission to Managua.

Of particular concern to the Manager is the note regarding pending loan obligations. These are all recorded so that while the application is processed in Managua, confirmation of balances with local banks can be established.

The first time this application process is completed takes much longer than subsequent application campaigns. For example, during the first campaign one month was required to attend all communities within Region V. Presently, every effort is made to complete all applications and community board and Agromoc reviews in one trip, depending on community size. Though the number of communities have almost doubled, the same time allotment for all applications is required.\*

Selection Process and Criterium. The traditional loan approval procedures have required a series of guarantees and documents usually not available to the small producer client, plus a complicated loan approval process usually requiring several visits by applicant and bank loan officers. Though standard approval criterium were prepared by these institutions, often times there was not uniform application.

The INVIERNO approach emphasizes different selection criteria, and is assisted by an electronic data processing unit, which provides for the rapid approval of a large number of applications using uniform decision making criteria at a cost

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\*The World Bank contends that because of the "cumbersome and time-consuming" application forms employed by most agencies, the illiterate small farmer is penalized. "The need is for simplification and flexibility to facilitate access to credit" (1, p. 9).

probably smaller than most manual systems. Based on a program designed to help select credit-worthy small farmers, all applicants are reviewed against a standard weighted scale which establishes point rankings related to selection or non-selection.

Once most of the applications from a CEDE have arrived in the central office, they are all key-punched and processed firstly to ascertain if the applicant complies with certain prerequisites. Compliance is based on credit worthiness factors not usually observed in traditional banks. Though the listing has been adjusted many times, based on experience, a summary of a recent listing of causes is provided (some of the points listed will be discussed further): (1) The sum of his pending balance plus the new loan is greater than the previously approved line of credit and has a pending obligation; (2) The applicant is not a farmer; (3) The applicant has no access to land, i.e. is not renting, nor owns, nor leasing;\* (4) Has less than two years of residence in the community and no access to land; (5) Has no desire to become an INVIERNO socio; (6) The references provided by the Junta or the Agromoc were negative; (7) The area requested for planting is larger than his cultivated areas; (8) The sum of his own cultivated land plus the amount rented plus the amount promised plus the number of adult livestock is not more than 30 manzanas; (9) He

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\*Access to land, not land ownership is the requirement for application approval. The usual land mortgage requirements opposed to by the World Bank (1, p. 8) as a loan guarantee requirement is not a requirement in the INVIERNO program.

is not a socio and is less than 18 years old or more than 60; (10) The activities requested for financing are not eligible for financing; (11) The approved budget is more than \$10,000 (or 70,000 cordobas)\* or more than 20 manzanas rented; (12) The socios within the community that are between the worst 10 percent of all the community socios in relation to the percentage of balance in debt; (13) He does not request to plant during the period for which the application is being processed (121).

Those applications that have not been rejected are permitted to go through an automatic grading process which provides points based on a comparison with application data and a weighted scale. As earlier mentioned, the computer makes quick experimentation possible. During the first processing for example, 30 percent of the applicants were rejected (88, p. 50), but as it was determined that one question was not completely understood by the prospective socios, adjustments were made. As the program is working with new "clients" most with no prior institutional credit experience and no collateral, the scoring factors originally tended to favor the more stable and secure small farmer. Experience has shown, however, that residence and land tenure are not the crucial factors (50 percent of INVIERNO socios do not own land) in loan repayment as originally thought. However, those socios on the lower end of the point

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\*It is recognized that for certain perennial crops, major investments are required. Therefore to assure that to the maximum smaller amounts are approved, a system has been developed --loans over 15,000 cordobas must be individually examined by the CEDE manager, those over 25,000 cordobas by the Regional manager, and over 35,000 by the vice-Manager for Operations.

spread who do not own land have tended to be more inclined for willful loan delinquency (83, p. 81).

All applicants not receiving the passing score are reviewed manually at the central office to determine if an error was made. All applicants from each community receiving approval score are returned to the CEDE Manager for a subsequent review regarding their credit standing with local banking institutions. A listing of all those not selected with the appropriate code explanation is provided so that any difficulty can be explained.

Using this application and approval system, only one visit is required to the community by INVIERNO from application to selection, and no follow-up visits need be made by the applicant. Processing is amazingly quick and error-free by comparison with the usual manual system. In early 1978, over 10,000 applications were processed through the computer in a one week period with only two errors observed.\*

Though the benefits in this rapid processing system are obvious, to permit some flexibility, those who are already socios but were not, for an exceptional reason, present for application completion, may apply at the CEDE and their application will be processed manually using hand calculators. In addition to the provision for short-term production credit needs, in order to finance investments to maximize farm resources, a different application and selection system has been developed.

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\*The experience of the World Bank indicates that there are few institutions who can process loan applications in less than 60 days, with many taking up to 90 (1, p. 52).

Application for these credit needs usually related to tools, improved plow, oxen purchase, irrigation pump, fumigators, etc. are processed at any time. Though the CEDE level credit approvals vary with each type of investment, they ususally depend upon the land area available, cropping activity undertaken, and require Agromoc approval (122).

Membership. In order to permit the socio to (1) manage his limited resources more efficiently, (2) invest his own cash to help finance the medium-term investments and new technologies as most appropriate to him, and (3) possess a long-term commitment to farm development, INVIERNO is prepared to provide him a five year line of credit. Rather than living from loan to loan, this security provides the socio with some basis for making investment plans. If the socio maintains his credit rating with INVIERNO (regardless of justified crop failure), he knows he can make the most appropriate medium-term development plan since required amounts will be available.\*

Once loan approval has been provided, a series of computerized activities are generated, one of which is the issuance of a contract providing the new socio with a five year line of credit listing the total eligible amount. This is calculated based on a function of his available land, the amount of his

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\*Supportive of this concept, the World Bank states, "It is unlikely that a single injection of credit will ever create sufficient liquidity to make continuing modernization self sustaining. Thus programs should be planned to provide for continued adjustment and evaluation" (1, p. 63).

original credit needs, and the number of planting periods in his area per year.

The contract, which is signed by the socio and two local witnesses provides for the following:

- Use of funds only for the purposes proposed;
- The delivery of funds for each cropping cycle is subjected to the budgetary approval by INVIERNO;
- Periodic receipt and documentation system;
- Interest payment and penalty interest for delinquent payment;
- The borrower's obligation to commit himself to technical suggestions and inspections made by INVIERNO; and
- Permits INVIERNO to terminate services and demand repayment if the borrower interrupts the established training and technical assistance relationship (123).

Once signed, and as long as the socio respects the conditions of the contract, periodic draw-downs can be made based on his needs as reflected in the approved seasonal planting activity. As required, the total amount of the line of credit may be increased, but never decreased.

This innovation also assists both socio and the institution in reducing operational costs. Separate contracts for each lending activity are unnecessary, thus eliminating legal fees and documentation. Loan record maintenance fees are reduced as all activities are maintained on one account, rather than the opening of new accounts each time a loan is approved.

Only one loan balance is maintained and payments for all lending activities are included therein.

Disbursements of Multi-Purpose Credit. Consistent with the mobile banking service nature of the credit activity, is the provision of total credit needs available as required. In addition to the basic standard input requirements based on level of technology and cropping, the parameters of which are outlined in the production guides, provisions are made for investment, contract labor requirements beyond the family labor unit, land and oxen rental, and for family maintenance. The maintenance level protects the family from the usual practice of "advance selling" at usually a much lower rate. The level is established based on the amount required to maintain the family until crop sale is made. In addition, to address the problem of insufficient family, off-farm labor sources, and insufficient oxen numbers, provisions are being made to rent small tractors and other equipment and provide working capital\* (124).

Extracting the planting activity, technology level and land area information from the application, the computer automatically calculates an itemized maximum authorized budget based on the financial plan included in each production guide. For illustrative purposes table 10 is included.

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\*Multi-purpose credit to finance "all components of a new technological package," is according to the Bank, a requirement "if the goal of rapid innovation is to be attained" (1, p. 37).

TABLE 10  
 MAXIMUM PER MANZANA BUDGET LEVELS  
 FOR "B" MAIZE

Item	Quantity	Price in Cordobas
Seed	30 lbs.	90
Nitrogen Fertilizer	200 lbs.	150
Complete Fertilizer	100 lbs.	90
Solid Pesticide	20 lbs.	60
Liquid Pesticide	1 liter	40
Rental of Oxen and Plow		140
Labor		150
Land Rental		150
Land Leveling		<u>180</u>
<u>Maintenance (not calculated)</u> <u>as provided based on formula</u>		<u>1,050</u>

During the community-level meetings where applicants were informed of loan status, the programming of the later disbursements of money is agreed to. (Input pick-up, as will be discussed later, is arranged for the same period.) To assure timely availability during the growing season, two or three visits are usually scheduled for each community to provide additional disbursements based on socio's needs. The timing of these sessions is usually coordinated by the volunteer collaborator. At the agreed upon time the Agromoc, Credomerc, and

Cashier arrive usually at the community school house to make money disbursement to all socios.

At the time of loan application it will be recalled that for rapid processing purposes the maximum levels for each planting activity as presented in the appropriate production guide were the figures used by the computer. Because of limited time available for processing applications, no time was given to the actual socio needs. During the loan application the information is available for consultation upon request, but to ease the burden on the Agromoc of making numerous calculations, the computer is assigned this task. During the fund disbursement session, an intimate Agromoc/socio dialogue takes place at which time the socio's actual needs are compared with maximum budget levels. An effort is made by the Agromoc to provide sound advice and encourage appropriate inputs while at the same time be respectful of natural reluctances by the socios to overextend. Using an itemized print-out budget for each socio, the agreed upon modifications are made and calculation of the actual amounts to be received noted. Since the maximum levels may not be the needs of most socios and due to the lengthy draught which has affected socio response, the agreed-upon amounts determined have been less than the authorized maximum level.\* The final agreed upon activities are recorded on the printout. A payment authorization is then

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\*If during the process certain increases to the maximum budget have to be made, adjustments can be provided by the CEDE Manager.

given to the socio by the Agromoc who then goes to the cashier to receive the designated amounts.

To illustrate the distribution pattern for various loan categories table 11 has been included.

TABLE 11  
AGRICULTURAL LOAN DISBURSEMENTS BY CATEGORY\*

Item	% of Total
Fertilizer	20.4
Oxen Rental	17.9
Seed	17.2
Land Rental	16.2
Hired Labor	10.2
Pesticide	7.8
Family Maintenance	5.4
Investment	2.9
Small Tool	1.6
	100.0%

\*SOURCE: INVIERNO, Departamento de Progamacion y Control "Socios Beneficiados y Montos Entregados" 23/1/78

Interest Rates. The traditional view that the lower the interest rate the better the small farmer credit program has been subjected to much discussion. Resulting from the findings of the Spring Review, it was determined that rates less than 12 percent were usually lower than the commercial rates within

the country, lower than the rates charged in more capital-rich developed countries, and lower than annual inflation rates. Resulting from the prevailing opinion was that these low levels of interest do not approach market rates of the shadow prices calculated in planning exercises within the countries (125, p. 5). The nature of providing low amounts of borrowed capital distant from the credit institution which requires technical assistance and loan supervision activities, necessitates that small farmer credit be an expensive proposition. The low interests traditionally charged by the lending institution plus the usually high losses from tardy loan cancellations, had, over time, resulted in the fund's inability to expand and serve a wider small farmer client sector.

Of the many disadvantages resulting from low interest rate policies, the most compelling concerns the viability of the institution itself. The actual value of credit available for relending to the small farmer sector is reduced each year through inflation and depleted resources. Thus the propensity for credit institutions to service small farmers on a broad scale is reduced. Gonzales-Vega concludes; "The lower the interest rate charged on loans, the lower the proportion of the lender's portfolio, ceteris paribas, that will be devoted to small farmer credit" (125, p. 23). A more realistic interest rate structure is favored by AID, World Bank, FAO and the Rockefeller Foundation donor agencies (126).

At the time INVIERNO was created, the lowest interest rate was nine percent for the few small farmers participating

under the Rural Credit program of the BNN. In 1976, the Central Bank established a uniform minimum interest rate for all short term agricultural loans at 13 percent (127, pp. 1-2). In compliance with the Bank's policy, and partly because of the uncertainty of campesino reaction to a higher rate even when so many services were being provided, INVIERNO complied with the "low" 13 percent interest rate during the first planting cycle. However, prior to initiating the campaign for the second cycle, calculations were taken of the average number of trips a socio would make and total costs required to apply and follow up on his application if made through the local bank. The totals demonstrated clearly that for the average applicant, he could well afford to pay the additional interest expenses and still be saving money compared to what his out-of-pocket expenses would have been to receive the same service.

Though in "competition" with the BNN interest rate, INVIERNO determined that with an 18 percent interest rate and if able to increase the average loan amount borrowed, over time, they might begin approaching a break-even point for the banking program. At 13 percent, however, there was no chance (127). After the socios had observed the benefits received from the ancillary services provided by INVIERNO, they have willingly accepted the five percent increase charged on the unpaid balance.

Loan Repayment. The unfortunate reality confronting agricultural credit programs is reflected in the traditional

recuperation system which assumes that though the borrower may be desirous of cancelling his obligations, because of factors usually beyond his control, payment is not always possible.

INVIERNO has developed a flexible reply to this dilemma.

To quote an INVIERNO document (113, p. 43):

A novel feature [to Nicaragua] of the Program is the concept of loan delinquency in that those socios who fall into delinquent status are only those that having shown a capacity of paying don't want to do it. Otherwise, if a socio does not have the capacity to pay because of involuntary factors, like for example a bad harvest because of draught, he doesn't fall into delinquency as his period for payment is automatically extended until the following harvest.

The INVIERNO procedure is to adjust the amount due by the socio to his actual capacity to pay. By holding a line of credit, it is therefore expected that in unfavorable growing conditions, his adjusted payment would be a reflection of those conditions and during favorable times a higher amount due would be required. INVIERNO's variable payment concept protects both the institution and the socio from the inherent risks of agricultural production fluctuations thus permitting bad and good times to overtime balance each other.

Unfortunately the procedure first developed to generate the estimated production data proved inadequate, causing long delays before amounts due statements could be presented. The original system called for yield estimate data to be generated by the Agromoc for each socio. To be done correctly, this time-consuming procedure had to be done within a very limited period. It was not always done at the precise moment, and thus in some areas, particularly those seriously affected by draught,

yield estimates were miscalculated. During this phase a problem associated with receipts, purchase orders, end-use documentation reconciliation also hindered the preparation of payment due statements. Resulting from these two problems, the first payment due notices were released late causing repayment delays. (Most socios however not affected by the draught did provide some payments prior to notification.)

Resulting from these original problems, INVIERNO developed a different set of computations which allowed for a quicker less-complicated system for yield estimation and also provided for a longer period which the socio may have to sell his harvest prior to receipt of his payment notice. Under this system, yield amounts are based on normal yield averages for the area. When exceptional differences are observed, the appropriate Agromoc prepares the necessary notification at which time adjustments are made which will be reflected in the amount due. A computerized listing reflecting the yield data with the amount due will be generated every three months which requests the socio to make a "minimum" payment six months after harvest or six months from the last payment. Since one balance is maintained, payments from any one harvest or from off-farm employment can be applied to his balance. If after the six month period he has not made his minimum payment, he will be delinquent and be levied a two percent additional interest penalty rate. Though 18 percent annual interest is paid during the ten month period beginning with the initial disbursement, in effect, this additional time beyond harvest provides the

socio with greater flexibility to obtain higher selling prices.\*

Discounting the numerous delays and problems in trying to design the best repayment formula, the 1977 program evaluation concluded that "the declared delinquency relative to the total of loan disbursements and interest over the two years of operation is equivalent to 10.4 percent" (85, p. 69).\*\*

Though obviously the philosophy of INVIERNO is more development minded than the commercial system, it does not want to create an image of being an easy mark for socio abuse. The computerized information system plus the monthly CEDE reports have greatly facilitated management decision-making capabilities to develop strategies to improve loan recuperation. The amount of data available permits quick access regarding timeliness of repayment, payment patterns based on time within the program, payment factors related on selection criteria, etc. These have greatly assisted INVIERNO management in making appropriate loan recuperation actions. In addition, increasingly the junta will assist in loan collection.

Concerning the rate of credit expansion--it has been rapid but at a manageable rate, and this expansion is exclusively

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\*The World Bank opinion is that flexible repayment rates can be improved by prudent loan rescheduling in order to "meet periods of liquidity shortage and surplus as they arise" resulting from farmers' income fluctuations and in response to national disaster (1, p. 18).

\*\*This rate is far more favorable than the delinquency rates of between 40 and 50 percent common to both AID and World Bank experiences (24, p. 26).

with the small farm sector. For the first planting in 1976, 2,430 socios entered the program, for 1977 and 1978 these were 5,157 and 8,300 respectively. As of June 1978, over 20,000 loans had been disbursed to 3,500 socios.\* The small farm focus of the program is best reflected by the small size of the loans received. During 1976, the average sized loan was \$206 while in 1977 it was \$176 (reflecting more rigid small farmer selection criteria and the negative effect of two years of draught) (95, p. 24). Only 2.7 percent of the socios had loans over \$1,400 for higher-cost cropping investments (128, p. 96). The average sized farm unit is 2.5 manzanas, and 82 percent of the farms have less than five manzanas in size (85, p. 63) with only 0.2 percent having access to more than 20 manzanas (128, p. 96).

#### Commercialization: Input Supply and Marketing

Two complementary services deemed essential to assist in facilitating socio well-being relate to the availability of basic production inputs at generally competitive prices and appropriate marketing assistance to maximize project potential. A description of each service is provided.

Input Supply. A commonly observed problem not unique to Nicaragua has been the unavailability of quality inputs in

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\*For comparative purposes with four highly-acclaimed small farms credit projects in Africa, Uma Lele reports that it took four years and longer to reach the level of credit activity INVIERNO had reached in two years (129, pp. 86, 91).

useable amounts available at the time required for farmers residing in isolated communities distant from market places. Discounting the limited capital available for their purchase, basic logistical problems have also contributed to their infrequent use by the small farm sector. One survey concluded during the initial design phase of the project that the commercial system was in many ways deficient in providing the modern inputs needed by the small farmer (130, p. 1).

Given the lack of any commercial structure and the vital importance that modern input availability would have in the transformation of small producer production practices, INVIERNO determined that the only alternative was to assume responsibility for their provision and charge the socio accordingly. As will be observed, much coordination and administrative control is required to assure that right goods are available at the appropriate time.\*

To obtain suitable prices for INVIERNO, bulk purchase, particularly of major items such as seed and fertilizer, are necessary. Long lead time is required because of the large stocks required to supply the needs of three planting seasons, the public bidding procedures employed, and product importation. Beginning in early January of each year, a listing of estimates of the various commodities required based on field-submitted

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\*AID and World Bank strongly concur on the need for the timely provision of inputs and in the case of AID, suggest that where required, direct involvement by governments to assure input supply and marketing programs may be (25, p. 40 and 1, p. 62).

data for each planting period is prepared by the Agricultural Production unit and submitted to the Rural Enterprise Program. The latter office coordinates purchases and input distribution and inventory control. For the major items, licitation will usually be conducted twice a year, and for the less-requested products such as vegetable seed, pesticide and tools and pump equipment, purchases will be made locally based on monthly price quotations (131). For those products of major importance, all local suppliers who have consistently provided quality merchandise (a reference file is maintained) are sent a standard bid document including deposit requirements, complete descriptions of items requested, dates requested, size of package, etc. with important contracting provisions included related to quality control and storage. The contract provisions inform all parties that INVIERNO will be conducting chemical laboratory analysis and seed germination tests on ten percent of the bulk received, and if it is determined that the products are not in conformity with the prescribed specification, INVIERNO will retain the deposited bid bond. In addition, to reduce costs, provision is made for the suppliers all of whom maintain large air-conditioned warehouses to store the merchandise until required by INVIERNO. Also, flexibility is permitted to protect over or under estimates of input requirements providing for a 20 percent flexibility margin (132).

Upon receipt and review of the bids, and their public opening, a special committee reviews the various offers so that within a 15 day period, awards can be made. Once awarded,

INVIERNO randomly selects seeds and chemical for respective seed germination and chemical analysis testing at germination beds in the CEDEs and through local laboratories. During this same period, the agricultural credit applications are being processed which permits a more accurate basis for actual needs. CEDE input requests are again estimated and again reviewed by the Agricultural Production and Rural Enterprise Division, at which time transportation needs are estimated. As large trucks are required only by INVIERNO during this period, arrangements are either made with the supplier or trucks are rented. Within a 15 day period, after bid award, all major bulk requests should have been forwarded to the CEDE warehouse (131). However if emergency situations develop, supplies can be obtained from other CEDEs using the inter-office radio net.

As mentioned above (under Disbursement), the community-level money disbursements programmed by the Agromoc and collaborator is followed by the purchase of inputs. Prior to the designated day, the Credomerc, who is responsible for the socios' purchases of inputs, will review community requests based on the detailed printout listing of each socio's authorized needs. This is reviewed with the warehouse man who completes the order and fills the pickup. To the maximum degree possible, efforts are made to provide units useable by the socio (133). During the same period, the cashier is making arrangements with local bank for the necessary amounts to be available for the trip. On the selected day, the Agromoc, Credomerc and Cashier travel

to the community for the finalization of purchase requirements earlier mentioned, disbursement of money and input purchase.

After the socios have received their final authorization from the Agromoc and the appropriate amount from the cashier, they may at the same time, purchase the necessary inputs.\* The INVIERNO price structure tries to be competitive with local prices as possible, and also charges for the extra handling and travel costs incurred. To the factory prices, adjustments are made to include a one to two percent sales tax (non-agricultural product prices have an 8 percent sales tax), costs of transport from Managua to the CEDE, plus four percent due to losses and five percent for handling costs from the CEDE to locality, and transportation costs to the community.

The Credomerc and cashier must take special care to assure cash received and sales receipts are correct, exact amounts of money and inputs are issued, and that the socio is clearly informed of each activity financed. Upon delivery completion, all necessary receipts are reconciled and an operational report completed, which is later reviewed by the CEDE cashier and the Manager for inclusion in the daily report. Operational failures at this critical stage or at the numerous events preceding

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\*This somewhat redundant activity of disbursing money and then purchasing was originally instituted to avoid creating the impression that the socio would be obligated to buy exclusively from INVIERNO. Based on further surveys, which indicate a preference for inkind purchases, the work of the cashier could be reduced to payments for land rental, oxen, etc. Given the small farmers' limited experience with a cash surplus, input purchasing, and storage, the World Bank recommends that distribution of credit be done in kind (1, p. 62).

input delivery, result in problems for both socio and INVIERNO. To help reduce operational costs, those communities with less than ten socios are directed to the closest community so that socios from both may be served at the same time. Every effort is made to reduce delivery trips for each of the installment payments to as few as possible. The trend for the future is to make one visit per installment (128, p. 13).

The socios' image of this service is quite positive. Socios in 24 communities in six CEDEs were surveyed regarding their opinion concerning the variety of inputs sold, the quantity recommended, input quality, input prices, and timing of delivery. Except for the input pricing which was "medium high," all other categories were rated "high" (128, p. 115). An important indicator reflecting the value of this service is the volume of inputs consumed during the first and second years of operation. The total volume for fertilizer and pesticide sales more than doubled between 1976 and 1977. Of special interest is the increase from an average of 1.1 quintals of fertilizer per manzana in 1976 to 1.6 quintals in 1977 (95, p. 20).

Marketing. The supporting role INVIERNO has provided in output marketing has been important, but not nearly as direct as in the provision of inputs. INCEI, a government created agency to execute price stabilization of basic grains through a purchase, storage and selling activity was created prior to INVIERNO. To avoid excessive price fluctuations, INCEI attempts to purchase at least 20 percent of the available basic grains at harvest time and sells them during the year as prices rise.

However, it has had numerous administrative problems. This deficiency, plus the number of middlemen who have traditionally intervened to make a cordoba, have led most to believe that the marketing system was deficient in many respects in providing the special services felt required to provide the small farmer the just price for his labors (130, p. 1). A variety of complementary crop marketing services are offered by INVIERNO and also in coordination with INCEI, through the Credomerc and the Marketing Office in Managua.

INVIERNO has developed an information and liaison service to advise socios on country-wide market conditions and on possible buyers. This service is based on a weekly computerized information gathering system and a register of possible buyers. This is done only as an advisory service to socios, who retain the ultimate decisions on these matters. In coordination with the Ministry of Agriculture's country-wide extension office, weekly producer and market price information for 25 products from 18 cities is gathered. This information is combined with transportation costs from point of origin to destination and the available harvest production information gathered from weekly CEDE reports all of which is computer processed. A weekly print-out provides best alternative market conditions and transportation costs. A listing of the principal buyers in each of the towns surveyed are maintained in the marketing office, and when the best of the alternative towns is selected, contacts with the buyers of that area are made to discuss interest amounts and to determine the best prices. The Credomerc closest to the

area would be contacted to determine product availability. The Credomerc meets with socios to discuss the matter to determine interest. Based on their decision and at their expense, a truck would be contracted to the selling point where the buyer would receive the product. All product transportation costs are paid for by the socios (134).

During the first two years INCEI services were not requested as generally high market prices prevailed due to the shortages resulting from draught conditions. Employing a similar though less-developed system, INVIERNO was able to assist so that 98 percent of the socios got higher prices than the INCEI floor prices (135, p. 103). Because of anticipated high production limits during 1978, INCEI agreed to act as an INVIERNO agent by receiving the socios' transported grain.

The marketing of the 25 vegetable crops produced is far more complicated than the difficulties associated with basic grains. Quality control measures employed by supermarkets and institutions, and the rough roads bring difficulties for the small vegetable producer. Marketing information contacts for socio vegetable growers are made through a central market facility near the Region V production area. Further, to improve product quality and to develop new packing and grading standards, a new project is being initiated with the Central Bank.

In the same study earlier mentioned, the socios reported a generally positive image regarding INVIERNO's marketing activities. The following concepts with the average ratings recorded are noted; (1) Utility of price reports--medium high;

(2) Utility of transportation service--medium high; (3) Confidence in the purchase system--high; and (4) Confidence in the effectiveness of the marketing service--high (128, p. 123).

Though both commercialization activities are an essential component of the integrated agricultural development program, both are activities that could be done at less expense for INVIERNO through a cooperative-type structure. In order to reduce project costs and to institutionalize more the participation by socios in the program, a series of input supply/product marketing facilities (tiendas campesinas) one for each CEDE are to be initiated over a six year period. Once community boards have received more training and experience, this CEDE facility would begin providing the credit (original capital borrowed from INVIERNO), marketing, input supply and even extension assistance. INVIERNO would assist in their management and structure facility. Over time these cooperative-type structures will in effect replace INVIERNO and thus permit INVIERNO to expand to other areas.

As proposed, the establishment of these stores would (136. p. 3):

. . . result in INVIERNO not offering input and out marketing services, the loans for the different activities would be given by the organization except in exceptional cases and the communities will be organized and trained to effect the community development labors with little participation from INVIERNO. It is worth noting that the organization always will have at its disposition the advisory assistance and help of the Institute in the cases where it is necessary.

Program Evaluation and Planning

In order to efficiently provide the numerous services described, a varied number of evaluative mechanisms were initiated to assess each phase of program activity so as to provide the basis from which necessary revisions could be made. Some of the various evaluative approaches employed are grouped below as: (1) operational reviews, (2) external annual evaluations, (3) detailed operational effectiveness assessments, (4) program impact evaluations and (5) insitutional financial viability studies.\*

Operational Reviews. INVIERNO management is constantly conducting operational reviews on all phases of operation. These are usually once-only studies providing analytical information from which recommendations can be made. In many occasions the need for a review is first identified by the General Manager or vice-Manager for Operations based on their contact with the CEDE Managers and review of monthly reports. The problems observed are discussed at the executive committee meeting, and if an operational review is determined necessary, a commission is appointed. Examples of the reviews undertaken include the time/activity study of Agromocs as a basis to orient their activities and methodology so as to dedicate more time to group instruction, loan recuperation, vehicle maintenance and repair costs, appropriate interest rate levels, etc.

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\*The variety of evaluation mechanisms employed is distinct from the other programs studied during the Spring Review as there it was observed that few programs have "self-evaluation mechanisms to measure progress toward the multiple goals" (24, p. 28).

External Annual Evaluation. Yearly joint evaluations of the program are conducted under the coordination of an outside consultant who is assisted by representatives from DIPSA, AID and INVIERNO. The two, month-long evaluations thus far completed (88, 85) have concentrated mainly on quantitative input/output measurements of program activities in relation to yearly estimates prepared by each INVIERNO unit, followed by some qualitative assessments and specific recommendations. The appropriate recommendations have all been reviewed, analyzed, and where appropriate, have been implemented.

Detailed Operational Effectiveness Assessments. Special external reviews on specific aspects of the program are often commissioned. For example, consultants have been contracted to review the audit practices employed, agricultural extension procedures, non-formal education activities, the adoptive research project with INTA, cooperative development, appropriate mechanization, and the agricultural development program (83). Though these reports have all been useful in exploring specific areas and in most cases have positively endorsed the development strategy being implemented, the INVIERNO General Manager determined that a more indepth analysis of the program was required to assure that the systems and approaches being executed were valid, and that a firm foundation was being developed for later program expansion. Beginning in August 1977, a special "study group" was commissioned "to measure the advances thus far reached by the different project activities and at the same time, identify problems that could be hindering the development

of these activities" (128, p. 2). The vice-Manager for Operations directed the team composed of the Directors of the Program and Control Department and Agricultural Production. They worked full time for a five month period conducting surveys on all phases of program operation with socios from 24 communities and with INVIERNO personnel at various levels of operation. These were conducted in order to determine the impressions of the level of services as perceived by both socio and staff and to determine particular problems and recommendations. The study group generated 76 recommendations on operational matters which were reviewed by the executive committee. Within the "degree of satisfaction" category, socios' replies from high to low degree were obtained for agricultural credit, input supply, product marketing, extension assistance, community promotion, and the radio program. Within this diverse group, the socios' opinions were generally favorable overall with 18 "highs," 10 "medium highs," 4 "medium lows" and 4 "lows" (128, p. 47).

The study group also designed and helped execute the first annual operational plan to assure maximum community participation within program context. A standard instruction manual was prepared and field cadre received special instruction on how to meet with the community board in undertaking the development of a community annual plan. Data from all communities was compiled and consolidated as a "CEDE Plan," and subsequently to the regional and central level where the INVIERNO 1978 Operational Plan was prepared.

The objective was to involve more the community within the development process and to thus make more effective the work of INVIERNO (137, p. 1):

. . . the services that the Institution offers must be oriented by the feelings of the beneficiaries in such a way that those be directly involved in the planning and delivery of these services. This could generate a high degree of conscience raising within the population in the sense that the people must bring about their own improvement, which at the same time would be translated to a higher level of commitment towards the accomplishment of the proposed goals and their result in a more effective work developed by the institute.

Program Impact Evaluation. None of the above approaches have the capacity to deal with the measurement of the program's impact on the social and economic well-being of the rural poor, i.e. the changes in rural well-being resulting from the program. INVIERNO is very concerned about documenting the anticipated evolutionary "progress" as socios pass through various phases of the program and at the same time, obtaining data on how the INVIERNO resources and the socios land, labor and capital can be most effectively utilized. It is understood that an "impact" study measuring all program activities would not at this early stage of program development be a productive exercise. Insufficient time has passed, particularly in the land sale guarantee and rural access road projects to measure the full impact anticipated. At the same time, however, in order to obtain necessary farmer management data, receive some indications on program effect at the farm level, and to provide a basis from which broader farm-unit technical recommendations could be

measured and analyzed--an extensive farm budget system has been introduced.

Beginning in May 1976, five Rural Administrators, one per Region V CEDE, initiated weekly contact sessions with 125 (25 from each CEDE) randomly selected socios within four categories of farm unit sizes. Resulting from the socios' interest, an inventory was first conducted of all farm assets. Subsequently, using a double ledger input/out accounting format, all family farm activities and purchase and consumption activities were interviewed on a weekly basis and appropriate ledger notations made. The ledger format permitted computer processing. However, delays in the actual data processing developed because of other computer priorities. A tremendous data bank to measure impact of various technologies combining annual and perennial crops with small amounts, effects of family size on productivity, variable costs per farming activity according to technology, changing family consumption patterns, prices received per farming activity, etc. is being generated which should soon be incorporated to permit project modifications as appropriate (139, p. 1-19).\*

Institutional Financial Viability Study. Two broad generalizations describing the program's financial activity relate to (1) high initial start-up costs particularly on the

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\*The Spring Review concluded that few programs studied have investigated the many small farm economic, technical and cultural variables from which progress on program adjustments can be made. "Small farm credit programs have to be firmly rooted to farm level analysis that confirms the project ability of investment" (24, p. 20).

non-banking side (i.e. social services, technical education, etc.), and (2) average loan sizes disbursed have remained small. Because of the initial high investment and large portfolio of small loans, insufficient returns per approved loan are generated to cover all banking costs. Accordingly, quick "financial viability" attainment should not over the short run be expected.\*

In 1977 INVIERNO conducted a detailed evaluation of their financial situation. Given the fixed banking costs associated with the banking operation, and the 7,000 socios enrolled at the time of the evaluation, the break-even point would not soon be possible as the interest generated from the \$216 average sized loan was not sufficient to cover fixed cost fees. By maintaining itself only at the 7,000 socio level and providing the present level of services, financial viability could be attained if the loan size averages were \$640 or a three fold increase.

Instead of rapidly introducing larger farmers into the program, INVIERNO opted to sharpen further its small farm focus (actually the average loan size in 1977 was reduced by \$31 from 1970 average), and instead concentrated on reducing operational costs. Computerized loan management systems, creation of sub-CEDEs instead of CEDEs, encouragement of the doubling-up of

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\*As mentioned in a recent review, "any program which deals with such a high percentage of small farmers soliciting loans around \$216 is bound to run disproportionately high administrative costs due to the work involved in developing and processing a large number of small projects" (135, p. 107).

Agromocs on vehicles instead of the one to one ratio originally programmed, the gradual expansion of Agromoc coverage from 70 to 300 socios, greater use of the community board in loan administration matters, and the gradual introduction of the tienda campesina "cooperative" document this policy decision. In this regard, the study group concluded that INVIERNO had considerably reduced their average costs per socio. The average banking cost per socio was \$136 in 1977 which was a 35 percent reduction over the 1976 costs,\* and the higher non-banking costs were reduced by almost 50 percent from 1976 to \$243 per attended family (128, p. 8).\*\*

Though according to the study group both banking and non-banking operational costs will continue to be decreased, the real solution for maximizing socio economic well-being and to assure institutional financial viability is to increase the average amount loaned (while retaining the same selection criteria) (128, pp. 20-21).\*\*\* Though the socios have made noticeable technology changes especially in the area of

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\*Though impressive, when one compares total banking administration costs with total amount loaned during 1977, instead of the preferred World Bank conservative standard of 10 percent, INVIERNO's costs were around 50 percent (compare this level with the proposed level for 1982 on page 158).

\*\*In determining this calculation it is assumed that in addition to the 7500 socios at the time of the programming, an additional 40 percent of the community receive development services (74, p. 204). Therefore, as of January 1978, some 64,000 people were being directly assisted.

\*\*\*According to the World Bank, the unfortunate reality of these programs is that "the costs of administration rise or the size of loan falls, as the duration shortens and as the amount of ancillary services provided increases" (1, p. 44).

fertilizer application, due to the effects of two consecutive years of draught, socios have preferred to buy "low" in order to reduce debt risk. With the (1) introduction of the important land sale guarantee program in early 1979, (2) increased promotion of investment financing made available in mid 1978, (3) greater emphasis on perennial and vegetable crops and (4) improved weather conditions, it is believed that a greater need for more investment will be felt by the socios.\*

If not for the time-consuming and thus costly approach of the gradual introduction of new technology methodology, financial viability could easily be met through a massive campaign of socio enrollment. Fixed costs of the banking operation could probably be met if between 15 and 20,000 socios were participating. Though INVIERNO has received pressure to expand quickly, it has opted for the more difficult strategy of providing the selected socio with a foundation for sustained long-range development while at the same rate being cautious on selection to avoid loan delinquency problems. The attainment of this more qualitative development objective requires a lengthier presence and longer government commitment.

On the other hand, given the demands of the long-range rural development plan, the INVIERNO program must gradually expand both within the present areas and to promising adjacent areas. To do this, their 1978 plan requested that operational

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\*In this regard, the work of the adoptive technology project and the analysis of the farm budget system are critical as they serve as the best basis from which appropriate technical advances beyond those already employed may be introduced.

costs not exceed those of 1977, while at the same time, increase the level of socios within the number of communities (108). It is anticipated that this will be accomplished through the gradual transfer of activities to the tienda campesina. This will permit INVIERNO to replicate the established system in other areas. As presently proposed, and clearly dependent on a continuation of external assistance, the socio level would be expanded at a rate of about eight percent per year from 8,500 to 15,000 socios over a six year period, benefiting with complementary services a total of approximately 100,000 plus rural families (136, p. 4-5). This is to be done with the same personnel and systems presently developed and holding operational costs to the 1977 level.\*

Clearly at this initial stage of development, the options are many and the question of financial viability must be evaluated with this in mind.\*\*

As mentioned in the last external evaluation (85, p. 201):

. . . insofar as may be prudent INVIERNO should seek to increase the average loan amount. These are fairly low risk measures that can reduce the participation cost rate

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\*For comparative before and after purposes the World Bank standard of 10 percent of lending portfolio to cover banking costs will again be used. Assuming that in five years there are 15,000 socios and that 1.7 loans per socio per year are disbursed and in real terms their loan has increased but 30 percent, total banking costs would be 12 percent of the total amount loaned.

\*\*The Spring Review noted that credit institutions take considerable time to attain "viability"--usually between ten and 20 years is required before they become well established and recognized (24, p. 19).

and bring INVIERNO's banking operations closer to bank break-even point, in view of the high fixed rate cost of the central office. However, we do not consider that at this pilot stage of INVIERNO's development, break-even need be a high priority goal.

## CHAPTER VII

### CONCLUSION

Resulting from recent donor-conducted reviews to improve small farmer agricultural development, attention has been directed to developing policy issues intended to improve the performance of institutionalized small farmer agricultural credit. An enormous developmental challenge has been identified which requires the replacement of the traditional individual-oriented agricultural credit system successful in reaching small numbers of the commercial sub-sector with a diverse variety of efficient delivery systems to serve large numbers of traditional farmers. To respond to the needs of the small farmer special institutions and procedures must be designed if he is to actively benefit from the governmental programs.

The donor's suggestions have served a useful function by drawing attention to the more complex role now associated with agricultural credit and related governmental fiscal policies. However at the same time, insufficient attention has been directed to assist developmental professionals in the implementation of the new issues and of those few suggestions related to operational aspects of small farmer credit and supporting services. Though agricultural credit is one of the largest of the donor agencies' funding activities, to more positively assist in

the expenditure of these resources a greater appreciation of operational considerations is required.

Given the limited operational-related research conducted thus far, it is observed that much benefit could be obtained by conducting detailed studies of those projects with a high "new-doctrine" input which show potential for providing improved services. Such studies could serve as a basis from which comparative analysis could be undertaken to develop greater specificity regarding the appropriateness of the limited operational suggestions thus far introduced, and at the same time, introduce innovative approaches not previously considered. From this exercise, donor agencies could assist each other and local institutions by learning more themselves of the complexities of the developmental activities they are promoting and by dissemination of the new suggestions developed. It is not intended that cookbook recipes inappropriate to diverse physical, social, economical, and technical factors be prepared. Rather, it is to provide managers with an insight to some of the creative and innovative approaches required to address the difficult challenges confronting them.

The brief record of INVIERNO's field operations directed to the provision of integrated development services to the farm community shows promise for providing an improved well being for program participants. Though the intricate task of providing these services has been documented, of importance are the consequences derived from them. The integrated agricultural development program has provided a comparatively large amount

of isolated farmers (most of whom had never utilized modern inputs), with small amounts of multi-purpose capital from which productive use has been made. The rapid but manageable program expansion observed is partially attributed to the institution's capacity to quickly complete and review loan applications, provide prompt decision notification, extend appropriate technical assistance, and provide quality input and marketing services. All services have been programmed to respect the constraints of the rural environment and the agricultural cycle. In a short period, maize per hectare productivity has doubled compared with traditional farmers and the use of modern technology has increased appreciably. At the same time, the institution's delinquency rate is low and financial viability is something that appears over time attainable.

Some of the many relevant lessons learned from this development experience are offered.

Preparatory Work. The importance of the two year period dedicated to sectoral assessment preparation and analysis as a basis from which the comprehensive strategy could evolve, cannot be under-stated. After over 30 years of perpetuating growth oriented economic development plan the magnitude of the problems required a comprehensive sectoral strategy which evolved from the comprehensive sectoral assessment. Clearly no quickly-prepared model developed by a well-meaning donor-sponsored project design team could have undertaken the detailed assessment required. The Nicaraguan study of their problems and at their initiative (combined with periodic donor collaboration),

produced the corner-stone document from which a more lasting development strategy could evolve.

Government Commitment. Pursuant to assessment preparation was the review of various alternative strategy approaches which resulted in the creation of a new development agency combining banking responsibilities with a high social cost component. To support such an activity required a long term and intensified government commitment best manifested by substantial new budgetary allocations--particularly so during the crucial five year start-up period. Legislation drafters appreciated the need to officialize government support and to reduce risk by officially committing the government to this new activity, at least during the initial phase of the program. The legislation formalized the usual gap between policy recommendations and implementation.

Innovative Package Approach. To quickly respond to the large number of obstacles identified in the assessment a new organization responsible for providing all basic integrated services was created. The impressive results of that initial decision demonstrate that when basic services are provided within a complementary framework, a large number of traditional subsistence farmers will switch to more productive farm practices. Program acceptance was due in part to the introduction of "newer" levels of technology linked to credit and input supply. The whole extension activity, i.e. Agromoc training, low extension/client ratio, high number of training plots, etc.

evolves from the respect for the low level of agriculture technology employed by the majority of the producers in a community area. Starting from that level minor introductions are gradually introduced, and as the farmer becomes more efficient with his traditional crops he is encouraged to "graduate" to more income-generating cropping activities.

Importance of Management Systems. The large government and donor financed contributions to the new strategy would have meant little had not the complex outreach development service systems, each with its extremely innovative features, been installed. The meticulous attention directed to systems design, review, staff training, evaluation and modification assured that required services were provided at appropriate periods. The program demonstrates the special attentions required to assure small farmer participation and commitment within a systematized approach. The experimental period directed to system preparation has now passed, and the model is now ready to be expanded gradually for replication into other areas.

Professionalism. To reduce the risk element associated with these usually highly experimental integrated rural development programs, donor agencies insist on a heavy injection of external technical assistance to assist national institutions with program implementation. The INVIERNO experience demonstrates that when salary levels are raised to attract qualified national professionals, high quality performance can result. Resulting from the personal management system developed, a

highly trained group of young professionals was contacted (with minimal political intervention in selection) and provided with extensive inservice training. Observing from their performance, an argument can be made that instead of governments contracting loan-funded external technical assistance (which has to be repaid to the donor) to assist in program execution, a competitive salary structure coupled within an appropriate personnel system can attract the quality national staff (maybe even at less overall expense given the expensive nature of contracting advisory assistance), more appreciative of national limitations to better do what outsiders have great trouble in doing well.

Equity/Efficiency Contradictions. The INVIERNO record illustrates the perennial conflict confronting credit institutions which disperse all capital resources in small amounts while at the same time strive to attain financial "viability" status. Though in the INVIERNO case a comparatively high interest rate is charged and a relatively high loan repayment is observed, because of the large number of small loans and high start-up costs, large operational costs are a reality requiring some subsidy--particularly so during the first five year period. The INVIERNO approach is a pragmatic effort to be responsive to the many trade-offs managers confront in responding to these two contradictions. Given the absence of any formula to more objectively assist in decision making, the unfortunate simplistic approach is to only examine the level of government "subsidization" required and declare the institution to be non-viable.

The INVIERNO experience with its good rural poor target focus and tight management systems documents the need for governmental seed capital "subsidation." Given the absence of a formula, the lesson learned from the INVIERNO experience is to pursue a balanced approach, i.e. recognize that some governmental support is required while at the same time always examine where the program can be trimmed and evaluate that cut in relation to the program's objectives.

Role of Computer. Since it is commonly assumed that computer specialist resources are scarce in developing countries, computer application to more positively assist in development programs are seldom considered. Though time-consuming and requiring considerable personnel training, the INVIERNO computer adaptations have assured (1) the rapid and error-free processing of credit applications, (2) the provision for use by program planners of a variety of important data concerned with all phases of program activities, and (3) the supply of management information required to rapidly assess status and make necessary adjustments to program operations. Respecting cost and staffing limitations, interested governments might consider service contracts with computer representatives to provide the assistance in program design and computer time necessary to assist in certain facets of credit management.

External Factors. Though monumental attention has been directed by INVIERNO to assure the best services could be provided most efficiently, in closing there are a few significant

external factors which may very well restrain the program from attaining its full potential.

1) The recent revolution in Nicaragua may result in the new government altering significantly the program and cause the present cadre of managers to seek other employment.

2) The present bleak economic situation will probably result in INVIERNO receiving considerably less funding than needed.

3) Donor assistance to the program, so crucial for its programmed expansion is presently uncertain.

4) The important mutually-related legislation for the new land taxes and land sale guarantee has provided that administrative responsibilities be directed to other agencies which might not feel the high concern for its execution as does INVIERNO. Both the tax and guarantee programs are crucial for attainment of the program's developmental objectives.

5) An additional critical factor, is the availability of new planting systems and plant varieties adopted to the diverse ecological conditions within Regions V and II. Without their availability, as some socios prepare themselves for non-traditional cropping activities serious delays in the attainment of long range program objectives will be observed.

Clearly there are many obstacles to rural development and accounts such as this help explain why so few true "success" stories are logged in the journals. By initiating additional detailed operational research such as the above, it is hoped that a broader knowledge base can be established from which the

innovative approaches so very much required for the task can be introduced. Resulting from their analysis, policy makers and project officials will become better informed and thus better prepared to undertake the far greater risks required to meet the pressing challenges related to rural development.

## ANNEX I

### BACKGROUND TO AID'S SPRING REVIEW

#### ISSUES DEVELOPMENT

Interest Rate Structure. "Interest rates applied in small farmer projects are generally much lower than rational economic policy would dictate. If they were raised from, say, the five percent level to the twenty percent level there would be few losses in terms of program goals and some major gains" (24, p. 29). The prevailing opinion was that these low levels of interest do not approach market rates, the shadow prices calculated in planning exercises within the countries, nor annual inflation rates. The nature of providing small amounts of borrowed capital to farmers distant from the credit institution and who need technical assistance and loan supervision activities requires that small farmer credit be an expensive banking proposition. In addition, the usually high losses from tardy loan cancellations has, over time, impaired the fund's ability to expand and serve a wider small farmer clientele. Of the many disadvantages resulting from low interest rate policies, the most compelling concerns the viability of the institution itself. The actual value of credit available for re-lending to the small farmer sector is reduced each year through inflation and depleted resources. Alternatively institutions

employ a "selection up" process to get at the less risky commercial operators. Gonzalez-Vega concludes: "The lower the interest rate charged on loans, the lower the proportion of the lender's portfolio, ceteris paribas, that will be devoted to small farmer credit" (24, p. 23).

Resulting from G. Donald's participation in the workshops, his subsequent review of the various country programs, and using data generated by the World Bank, he attempted to determine a "feasible" interest rate range. He based this rate on; (1) a very conservative value for the institution's administrative costs at ten percent of the annual value loaned, (2) an estimated three percent to repay the public capital fund borrowed from the government for lending purposes, (3) a five to ten percent allowance for default losses depending on the lending institution's experience, and (4) the appropriate factor for inflation (18, pp. 108-112). Based on these estimates, under very positive conditions, an organization charging less than 18 percent must either look for continued outside assistance, or not plan on continuing operations with the small farmer over a long period.

In responding to the question of the small farmer's reaction to higher bank rates from institutional credit sources, Donald concludes (18, p. 113):

We may summarize that the farmer who can contemplate borrowing from a money lender would prefer this kind of institutional rate if the accompanying condition and services were not too unfavorable; and that the difference between such a rate and the prevalent 6-12% rates would not be too great to deter most farmers from using such short term credit for buying agricultural inputs when these were

thought to be reasonably productive. The interest paid on a six to nine month loan for fertilizer at  $1\frac{1}{2}$  to 2% a month, for example, could easily be less than the probable gain from using it.

Subsidies. As the Spring Review identified two separate but interrelated points, for brevity I have combined both.

"Subsidies for small farmers can be justified on several grounds, but it is a mistake to use the credit mechanism as a vehicle for subsidizing" (24, p. 22). Though certain subsidized services should be provided, the consensus was that relaxing the banking institution's responsibility on loan repayment services destroys the institution's financial viability. As discussed in the workshops, there are technical assistance, educational research, and marketing services, etc. not directly related to the institution's financial operations which are traditionally subsidized (24, p. 107). These types of services should remain separate from the bank's operational ledger.

The other subsidy-related issue (24, p. 30):

There is a stronger argument for subsidies to institutions which supply credit than for subsidies to farm borrowers. This suggests that while interest rates to farmers may be raised, interest rates to commercial banks and other financial institutions should be lowered on an incentive to expand their small farmer participation.

Traditionally, agricultural lending institutions are required to pay low interest rates from the central banking or foreign donor institution from where the money is loaned. If this practice was to be altered and initial interest rates began to approach the market level, the chances for creating a viable credit institution are limited. Given the opportunity costs for public capital expenses, this at first might not be a

"profitable" venture for the government. However, assuming the alternative possibility of fostering a sound development organization, a concessional interest rate is important for the institution's long range well being.

Limitations on Participation. "The commercially non-viable farmers present a problem with which the Spring Review is unable to cope" (24, p. 38). The question of further defining farmer "viability" was a much-discussed point at the regional workshops. Usually the "production-oriented" planners stressed the point that non-agricultural opportunities should be developed for the more "non-viable" sector, while the more "welfare-oriented" officers defended the need to search for appropriate agricultural solutions. The challenge of addressing the needs of the marginal small farmer are incredible and the possibilities for agricultural development for the landless farm laborers, garden plot farmers, etc. are obviously limited. As will be observed in annex 2, the question was clarified later by encouraging institutions to attempt, where possible, the inclusion of the most marginal of farmers within their programs.

Technical Supervision. "The technical supervision of the use of new technology is agreed to be an essential component of most small farmer credit programs" (24, p. 31). This extension function is particularly important for the introduction and diffusion phase of new technologies to the traditional sector inexperienced with the application of modern inputs. Without the availability of new technology, the use of credit is questioned.

Technical supervision should now be better structured, perhaps along crop lines (24, p. 31).

Generation of Savings. "Financial savings may be generated in rural sectors at rates much greater than commonly thought and their accumulation is highly desirable. The experience in Taiwan, Zambia and elsewhere provides evidence to support this hypothesis" (24, p. 31). Workshop participants agreed that given the long-range development objectives within the rural sector, additional capital requirements must be generated. Savings programs within the credit institution could be an effective means to capture local savings. Dale Adams mentioned in his paper of the possibilities for generating rural savings if interest rate incentives were raised in both urban and rural banks for rural re-lending programs (140, p. 4). Obviously deposit interest rates and security considerations would have to be improved before increased working capital could be generated.

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Graduation to Commercial Banks. "Graduation policies are necessary for small farmer credit programs which give special services, privileges and subsidies to the small farmer for a period of time calculated to bring them to commercial viability. When that position has been reached, and assuming that the normal commercial banking system is prepared to deal with them, the successful small farmer must be graduated out of the special program to make way for new clients. In general, however, small farmer credit programs fail to graduate clients"

(24, p. 32). As low interest rates rarely cover administrative costs, government sponsored agricultural credit programs "generally operate at a loss" (141, p. 13), governments are usually required to provide operational subsidies ranging from 25 to 100 percent of the program's total revenue. These subsidies tend to support the more prosperous "less-risky" producer as the bank is forced to look to other "less-expensive" clients in order to reduce government subsidized operational costs. Since over time the larger producer requires less attention, less government subsidy to the bank is required. Therefore if the institution adopted the policy of moving over time those small producers who have developed a positive credit rating from the government subsidized project to the more commercial sector, the subsidized program for small farmers could be expanded to reach new clients. Under the "graduation" approach, the spread effect would be maximized.

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Loan Default. "Loan default and delinquency rates in small farmer credit are generally higher than would seem acceptable. But we are uncertain about the relative importance of each of the alledged causes. Thus corrective action is difficult to design and the most obvious policy--to intensify collection methods--is unlikely to succeed" (24, p. 25).

Annual overall delinquency rates of 20 to 30 percent or more, though common, are not universal in agricultural lending. There is some evidence to indicate that default rates are higher for medium and large farmers who, because of "political immunity" are relieved from re-payment responsibilities. Thus

if credit was restricted to the small farmer only, default rates might well be lowered. This point should be considered in the context that unlike before, there is usually an available improved technology to increase repayment capacity, other supportive services are now present, and government institutions have a greater priority to expand services in rural areas, all of which tend to reduce loan default among small farmer sector. Though large loan default rates are a major impediment to mounting a broad-based small farm program, enough institutions with default rates below 20 percent indicate that the problem is manageable and can be controlled.

Consumption Credit/Loan Collateral. Two other issues identified which require additional study, concern the role of consumption credit and loan collateral:

1) "Consumption credit appears to have no role in small farmer credit program that emphasizes production objectives, but that judgement may be both incorrect and politically unacceptable" (24, p. 32).

It was felt that given the scarce institutional funding available, capital resources should be provided only for productive activities. However, emergency and consumption activities can be defended as a legitimate part of farmers' needs. Having access to a loan for these needs permits his current liquid balance "emergency fund" to be invested in savings account or farm needs. It also ties the client closer to the credit institution as he sees the many benefits a good relationship provides.

2) "Collateral was another factor given too little attention in the Review" (24, p. 32). The difficulties of providing credit to untitled small farmers who secure a loan by mortgaging their harvest might be insufficient collateral. This is especially so if low technologies are employed. However it was noted that repayment rates were higher in other programs where no collateral was required.

## ANNEX II

### SUMMARY OF AID'S INSTRUCTIONS ON SMALL FARMER CREDIT PROJECT DESIGN

Distribution of Credit. "It is now established AID policy to concentrate support of agricultural credit programs on small farmers. Missions can provide funds either to programs which lend exclusively to small farmers or to institutions which have small farmer credit programs so long as in the latter case the total amount of increased lending to small farmers will be at least as great as the funding to be applied by AID" (25, p. 17). During the Spring Review the consensus was that given the limited resources of the land-scarce small farmer, in most cases he should be excluded from credit assistance.

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Recent thinking has changed this issue. Though potentials might be limited, a means should be found to reach him. The manual encouraged the mission and local governments to be flexible in determining the "viability" of the small farmers eligible for these programs and to look for other criteria than merely minimum land size as a selection factor.

Interest Rates. The consensus was that the present low rates are economically unjustifiable and that in most cases, should be increased to 12-15 percent plus the going rate of inflation (25, p. 24). In this context, low-interest subsidized

rates, like all other subsidies, should be given in the form of services such as extension, and not in the form of subsidized inputs which are often received by a more privileged group not needing the subsidy.

Default. Given the demise of agricultural institutions, often time brought about by high rates of default and the many sound justifications for default associated with these high risk projects, AID Missions "should (a) attempt to learn the truth about repayments; (b) ascertain as well as possible the reasons for non-repayment when the figure is high; (c) work out with the agency a program for improving performance; (d) develop a system to monitor performance (25, p. 27).

Supervision. The supervised credit system led to too much individualized supervision which of course was costly in relation to the amounts loaned. However, to the extent that this ~~service can provide useful information~~, supervision is usually an effective complement to credit. The degree of supervision to the degree of unwanted interference is counter-productive. The working assumption is that farmers are essentially rational. Therefore not only should supervision be reduced, but also, a case can be made for the provision of consumption credit (25, p. 29).

Economic Efficiency. Given the high costs associated with credit program, if administrative costs which in most cases have to be subsidized, can be reduced, the institution can broaden its lending to the small producer. To conduct this usually

difficult task, a "low cost delivery system" needs to be designed. There are no easy remedies, but the grouping of farmers to lower loan processing, approval, supervision, extension and repayment offers a possibility. The decentralization of operation to facilitate loan processing and monitoring, plus the possibility of using savings and informal lenders and other entities formulating rural capital could be contacted to improve the flow of finance can also be explored to reduce administrative burdens (25, p. 32).

The "Institutional" related issues associated with small farmer credit also received attention.

Alternative Delivery System. Though no one institutional system studied in the Review was cited as superior to others, there was consensus that greater attention needs to be directed to organizational development and improved management. Accordingly group credit is often preferred to (1) reduce loan administrative costs, (2) lower default rates, (3) facilitate savings mobilization and (4) assist in loan monitoring, their actual track record has been mixed--particularly cooperatives (25, pp. 34-38).

Package Approach to Credit. Given the many development constraints in the rural area, the provision of credit exclusively is not the solution. Other considerations such as a more productive technology, availability of quality inputs on a timely basis, market accessibility, etc. are common complementary services that must be considered to make credit profitable.

Whether this is provided by one or a series of private or public institutions must be carefully studied to assure their timely provision (25, pp. 40-41).

Graduation. For sound equity reasons, the graduation of the small farmer from the more subsidized to less-subsidized programs must be considered. Obviously the institutions are reluctant to continually loose good clients and recruit those usually not eligible by the other institutions. Though difficult, it should be understood that a permanent association with a subsidized program is unhealthy for rural development (25, pp. 42-43).

### ANNEX III

#### SURVEY OF WORLD BANK'S ISSUES STATEMENT

Eligibility and Security. Instead of the traditional land title requirements as a collateral loan security, which has tended to exclude small farmers who seldom possess certified title, the Bank emphasizes that repayment capacity should now be based on the appraisal of the productive capacity of the investment. For longer-term credit however, a collateral request would be acceptable. There needs to be less complex procedures for obtaining credit. In this regard, more attention could be given to a greater reliance on self-management and the use of farmer groups to police loans (1, p. 9).

Interest Rates. According to the examples provided, the total real costs for an efficient credit institution would be between 15 and 22 percent. A case, quite similar to that made in the Spring Review that interest rates be raised accordingly is provided. However the implementation of that policy is somewhat different in that greater flexibility is provided.

Accordingly, the World Bank expects (1, p. 13):

. . . to work toward a long-term objective of positive interest rates which reflect the costs of lending. There are obvious difficulties in any single organization--such as the World Bank--seeking interest rates on a particular project that would be different from those charged by the same or by a competing borrowing institution on other similar projects. The difficulties are compounded if many external

lenders have accepted the principle that borrowing institutions should lend at subsidized interest rates. The Bank's attitude will be influenced by a project's overall potential for raising the productivity of large numbers of small farmers and for achieving a satisfactory economic return.

Repayment Performance. Repayment problems are associated with both the large and small agricultural borrower, though over time, it is observed that most loans will eventually be canceled. Closer supervision will possibly address the problem, however, maybe the increased costs make that an inappropriate decision. To reduce administration costs, perhaps supervision should be under a collective responsibility arrangement (1, p. 15).

Credit Channels. As observed when this issue was discussed in the Spring Review, there is no one best way to reach a large number of small farmers. The World Bank has listed a series of suggestions to assist national institutions in developing more effective credit institutions.

As presented by the Bank (1, pp. 17-18):

1. The institution must encourage acceptance of its role in assisting small farmers and make itself readily accessible at the village level.
2. It must view credit as part of a package to improve small farmer productivity, have specific proven technology to do so and ensure that the inputs required are available.
3. The institution should take into account the advantages of providing credit in kind for purchased inputs. This would relieve the small holder of further transactions with which he may be unfamiliar and provide the institution with some assurances that the credit is used for the purposes intended.
4. Credit, especially credit in kind, must be timely. If provided too early or too late, it leads to diversion and loss.
5. The basis for selecting smallholder borrowers should be credit-worthiness but the criteria need not be as restrictive as for larger borrowers. The important elements

should be the reputation of the individual within the community, the technical feasibility of the proposed enterprise in his own farm situation and the expected cash flow generated.

6. The prospects for repayment of loans are greatly enhanced by group responsibility for individual liabilities. Given the cohesiveness of most rural communities, when the village cooperative society or farmers' association has a stake in an individual's performance, it is difficult for him to withstand the pressure of his peers and avoid his obligations.

7. Institutions should understand that, for small farmers, especially, loans and repayments need to be carefully scheduled to meet periods of liquidity shortage and surplus as they arise. This will make supervision much more effective and orderly.

8. Institutions will need to exercise considerable flexibility in rescheduling repayments when unexpected circumstances, such as draught or other disasters, occur. Under such conditions, it may also be necessary to be flexible in regard to lending criteria.

9. The institution must commit itself to continuity of operations, recognizing that performance, in the initial stages, may be inadequate. It will take time and discipline to develop effective credit programs for small farmers.

10. Finally, the authorities should recognize that much remains to be learned about small farmer credit. A process of trial and error on a limited basis may be quite in order, in many circumstances, to provide guidelines for wider application. Ultimately, the program should be conceived as one providing continuing and increasing financial support to the farmer for the evolving process of modernization.

## ANNEX IV

### IDENTIFICATION OF SPRING REVIEW OPERATIONAL PROBLEMS

#### Management Information Systems

- More frequent assessment of the activities of the project need to be provided so as to enable a confirmation or modification of procedures and policies as required (39). (Mexico)

- More precise and punctual reporting is required so that operational impacts of project can be assessed in time for reaction (41). (Nicaragua)

- A dynamic flow of information must always be available. Program evaluations should be undertaken on a regular basis in order to identify and resolve problems on a timely basis (41).

(Peru)

- Need for an adequate record system in order to stay informed of credit program so as to quickly identify problems. Data collection and accounting systems need to be developed to better understand end-use of credit and impact (42). (Ghana)

- Evaluative procedures to assess operational systems, make credit demand projections, etc. need to be developed (43). (Korea)

- Management information system needs to be upgraded (44). (Thailand)

Project Evaluation Systems

- There needs to be an evaluative procedure developed and studies to determine credit utilization as a basis for making project adjustments (45). (Jordan)

- No data system to make assumptions on project impact (46). (Afghanistan)

- No simple surveys had been conducted to determine the use and benefits gained by participants under the project (47). (Sri-Lanka)

- Some doubts regarding appropriateness of economic data information system developed to make necessary project evaluation (48). (El Salvador)

- There is a need to adopt regular evaluation procedures in order to guide program decision makers (49). (Chile)

- The project's evaluative capacity needs to be improved either via organizational changes or use of computer in order to permit evaluating impact related to income, production, consumption, etc. in order to make necessary policy changes as required (50). (Morocco)

Quality of Supporting Services

- Lack of adequately trained extension personnel required to effectively reach large number of farmers in order to disseminate new technologies (51). (Tunisia)

- Need to broaden small farmer marketing infrastructure (51). (Tunisia)

- A poor marketing information service, and a shortage of well motivated agricultural extension personnel were observed (52). (Uganda,

- Technical assistance should be provided during the entire growing cycle rather than just at the time when credit study is made (39). (Mexico)

- There is a need to continue developing and make available for use by the small farmer new technologies and a need to train national researchers to develop new technologies (53). (Mexico)

- The technical extension services was inadequate in many areas (54). (Honduras)

- Main cause of loan delinquency and major obstacle to achieving greater benefit through credit lies in the weakness of established marketing services (40). (Nicaragua)

- Need for new proven technologies in an acceptable form for small farmer to use and be available for purchase (55). (Colombia)

- The lack of improved seeds and farm inputs has negatively affected the program's ability to improve farmer well-being (54). (Honduras)

#### Coordination of Supporting Services

- Credit system is operated in isolation from the technical and marketing development agencies in agriculture (56). (Kenya)

- The extension and credit units need to assist clients in a more coordinated fashion (50). (Moroco)

- Given the magnitude of problems impeding development at the small farmer level, there was a need for greater coordination by other agricultural support agencies (54). (Honduras)
- In order to guarantee effective execution of agricultural development strategy, all project elements must be effectively coordinated (41). (Peru)
- To maximize investment potential, there is a need to advise and assist farmers in the commercialization of their products (39). (Mexico)
- There is a need for more extension personnel to assist corporation and complementary marketing assistance project (57). (Ecuador)
- There is a need for establishing an intimate association between the credit and marketing institution's and extension service of Ministry of Agriculture (58). (Turkey)
- Greater coordination is required between the credit marketing and extension services (45). (Jordan)
- Lack of coordination between the various agricultural departments supporting credit (59). (Iran)
- Need to coordinate the various services such as irrigation, input supply, extension, price support (44). (Thailand)
- The coordination of banking institutions with the extension, cooperative settlement offices, etc. needs to be encouraged (47). (Sri-Lanka)
- There is a need for more closely defined government policies regarding the coordination of credit with other institutions (54). (Honduras)

- There is a need for coordinating uniform policies by various participating commercial banks to implement procedures directed to small farmer (56). (Kenya)

#### Loan Approval Considerations

- The lending criteria, particularly land title requirements are major constraint to agricultural lending in both short and medium term loans (51). (Tunisia)

- Loan approval policy should be based less on security factor and more on the client's capacity to pay (50). (Morocco)

- By concentrating loan approval responsibility at central office, too many delays and frustrations resulted (60). (Nigeria)

- Institution's failure to provide timely loan approvals and necessary disbursements (42). (Ghana)

- Too rigid loan requirements and complex and slow approval process exclude the majority of small farmers from participation (39). (Mexico)

- There is a need to simplify the various steps required in obtaining loans (48). (El Salvador)

- Resulting from time-consuming beaucratic procedures of the bank, loan requests are processed extremely slowly (61). (Bolivia)

- Loan application procedures are (1) cumbersome, (2) costly to process, (3) slow because of insufficient number of inspectors and (4) require provision of guarantees (62). (Ecuador)

- Need to reduce loan approval procedures and decentralize loan approval (45). (Jordan)

- To facilitate loan approval matters, need to establish a more decentralized banking operation (58). (Turkey)

#### Loan Repayment Considerations

- Loan repayment rates need to be improved (45). (Jordan)
- There is a need to improve low rate of loan recovery by increasing loan supervision (47). (Sri-Lanka)
- In order to avoid problem of selling at low prices to cancel post-harvest loan repayment due date, thus minimizing profits, short-term loan repayment dates might be re-established (43). (Korea)
- Need to improve loan repayment record (44). (Thailand)
- Banking agency needs to be tougher on loan repayment matters (58). (Turkey)
- In assessing loan repayment capabilities, tendency was to over-generalize on yield results in area rather than evaluating each farm unit (47). (Mexico)
- The problem of uncollectable debts has been a major problem (48). (El Salvador)
- The absence of greater control and supervision has contributed to much of loan delinquency and has limited the effects of the extension work provided (54). (Honduras)

#### Centralized Organization

- Too centralized authority rather than a deconcentration of authority impedes effectiveness of institution's operations (50). (Iran)

- The planning and program development steps must be prepared at national, regional and local levels (19). (Peru)

### Personnel

- Continued rotation of trained personnel is not the best administrative system (52). (Uganda)

- Need to train personnel to improve capacity in farm planning and management (50). (Moroco)

- Bank's shortage of personnel to adequately supervise loans (42). (Ghana)

- Limited staff to meet growing demands have created major management problems (63). (Ethiopia)

- Lack of trained personnel at agency office level (46). (Afghanistan)

- Need to provide an expanded training program to project personnel (26). (El Salvador)

### Management and Supervision

- The administrative leadership does not operate with modern management methods (40). (Chile)

- Need to improve the supervision assistance related to credit, technical information, farm management, etc. (44). (Thailand)

- Management must be better trained and the lending administration placed in the hands of trained management (51). (Tunisia)

- Need for independent auditing inspection service to review all loan activities from central office to farm level (52). (Uganda)

## ANNEX V

### SUMMARY OF TOPICS DEVELOPED IN NICARAGUAN AGRICULTURAL ASSESSMENT

Rural Unemployment. Though over the years employment levels in the secondary and tertiary sectors of the economy had increased overall much more rapidly than agriculture, in 1971, 47 percent of the economically-active population were still in the agriculture sector and 70 percent of the country's population depended directly or indirectly on agriculture. Though dependent on agriculture for employment generation, 63 percent of the unemployed population were residents in the rural sector. While, between 1963 and 1971 the number of employed people in the rural area was decreasing, the potential mainly untrained labor force was increasing, thus increasing the burden on those already employed. Given the limited capacity for the employment of this large rural mass within the slower-expanding industrial sector, and the rising level of rural urban migration sector incapable of absorbing more labor, the team concluded that more productive employment opportunities needed to be created within the rural sector (78, pp. 82-88).

Income Distribution. The wage levels of a considerable portion of the rural sector were generally depressed, and showed great inequality within the sector and especially when compared

with the urban sector. In 1971 the average family income of the urban family was \$3,061 and that of 50 percent of the urban population with the lowest income was \$1,400. During the same period in the rural areas, the average family income (average size rural family is 6.1 persons) was \$878 while the income of the lowest 50 percent was but \$210. Complicating this disparity is the problem of an expanding younger population (59 percent of the 1971 population was less than 20 years old) which would be competing for the already-low wages therefore further depressing the already depressed wage levels (78, pp. 81-111).

The team remarks on the intolerable situation (78, p. 107):

The problem . . . of distribution of income among groups of the economically-active population is of such magnitude that it is difficult for people to achieve living standards in accordance with the normal needs of rural families.

Land Tenure. UNASEC concluded that one of the many factors inhibiting the generation of more employment opportunities within the rural area was the complex area of land tenure, particularly as it relates to farmer productivity and rural employment. Policies needed to be developed which would make for a more efficient use of the available cultivable land, while at the same time, facilitate the distribution of land. Special research was directed to the land utilization practices employed by the medium-sized farmers with holdings from 50-500 manzanas\* and particularly those farmers with over 500 manzanas which

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\*One manzana is the equivalent to 1.7 acres or 0.7 hectares.

accounted for 48 percent of the total cultivable land. Resulting from their study of the relationship between land distribution and land utilization, they determined that "one of the greatest blocks to improved productivity and employment is the use of land in large farms in which 15 to 30 percent of the cultivable land is not used, with the percentage growing higher as the size of farm increases (78, p. 97)."

To demonstrate further the problem of land utilization, they report that 82 percent of the farm land is devoted to such relatively lesser employment generating endeavors as pasture, forest and fallow. For those farms of 50 manzanas and more as land resources are not maximized, employment generation per manzana is decreased. Also because of the tendency to increase mechanization on the larger units, there is less capacity to generate additional employment opportunities. In addition, the land distribution pattern also contributed to great income disparities.

As the team reports (78, p. 98):

This kind of land ownership and the scarcity originated thereby is the most important element in the determination of characteristics prevailing in the income distribution of the agricultural sector, while at the same time, the unused labor manpower grows larger and its income becomes smaller. In analyzing net income generated in agricultural activities, we find that in the Pacific and Interior regions, 63 percent of the income goes to 3.5 percent of the economically-active population. To the groups of self-employed workers and family workers, which make 45.5 percent of the economically-active population, corresponds 29 percent of the income; and to the group of employed people goes 7.5 percent of this income.

General Level of Living. Only a limited number of social service activities have been introduced to compensate for the

low economic situation of the rural poor. Basic social well-being indicators related to education, health, nutrition and housing reflect this policy. The limited budgets for government-sponsored services had been directed to mainly urban areas. The effects of this neglect of the rural sector is observed.

**Education:** Though the majority of the population resided in rural areas, only 27 percent of the 7,586 school teachers are responsible for two or more class levels. Also the proportion of illiterates within the age group six through 29 is three times higher in the rural sector.

**Health Facilities:** The number of doctors and hospital beds per 1,000 patients and ratios of nurses and helpers to doctors was half of World Health Organization standards.

**Nutritional Status:** Rural diets were generally termed "inadequate in food intake," and consequently 60 percent of the total population was termed "under-fed."

**Housing Conditions:** Seventy percent of the homes were of rustic materials with one or two rooms. Almost 50 percent of the dwelling were absent of sanitary facilities and 60 percent of the homes depended upon water carried into the home (78, pp. 147-168).

Agriculture Development and Supporting Services. The survey documented what could have been expected, i.e. that small producers had no source of institutional credit, technical assistance, adoptive research, improved farm-to-market road service, farm input and marketing services. In the particular area of agricultural credit, the government's policy was to assist those

with 50 manzanas and more in cotton, coffee, sugar cane, livestock, bananas and rice production (78, p. 115). Research and modern input availability was supportive of this priority directive.

The University of Missouri material documents the different levels of agricultural input application per farm size (79, p. 78):

The use of chemical inputs varies notably with size of farm. As a general statement, there is a very strong relationship between farm size and chemical use with a higher percentage of larger farms using these inputs. This is especially evident considering the figures for the two smallest and the two largest size strata. Although farms of less than five manzanas account for nearly 32 percent of the farms in the six major producing regions, less than 700 of the more than 27,000 units utilize fertilizer. A not dissimilar relationship exists for pesticide use. Of the 670 farms greater than 1,000 manzanas, 43 use fertilizer even though most of these are devoted to livestock production. Further, in total, nearly two-fifths of these farms use insecticide.

Their study concluded that the expanded application of inputs for all sectors would have a positive impact in generating increased employment opportunities (79, p. 72).

Fiscal System. In order to reduce the glaring inequalities between the two rural sub-sectors the "need for making administrative and legal reforms in the tax policy, both for controlling certain non-productive consumer patterns and for enabling the government to collect the needed resources to fulfill its economic responsibilities and in particular, those related to the social welfare programs" (78, p. 124) was noted. Agriculture would be called to make a larger contribution to the nation's well-being. During 1970/71 tax revenues from the agriculture

sector (excluding real estate taxes) based on agricultural exports and imports of materials and capital goods represented three percent of total tax revenues while contributing 13 percent to the GDP. A greater tax contribution particularly in the area of income tax should be made. The number of eligible income tax paying farmers was three times greater than the number who actually made their contribution (78, p. 129-130).

An important complementary income-generating measure which also would encourage the maximum use of land resources, was the new tax to encourage the use of the presently under-utilized land. Through the proposed tax mechanism, land owners would be encouraged either to make more efficient use of their land's production potential or because of the established levy, make this land available for sale.

The report concludes (78, p. 142):

. . . a land tax would allow the Government to collect more revenues, and it would be an instrument to encourage a more efficient use of resources, and improve distribution of income. Finally, this mechanism would assign the resources and the financial and legal instruments that would make possible the transfer of "profitable" idle land to people who could work it efficiently.

## ANNEX VI

### INVIERNO'S CHARTERED SERVICES

These banking and non-banking services are extracted from the INVIERNO Law (81, pp. 27-30):

- a. To give integral financial assistance to credit subjects in order to improve their working and living conditions;
- b. To give free of charge, complementary technical assistance services;
- c. To coordinate and/or give the services and carry out the activities necessary for the success of the integral development projects being carried out or that will be executed;
- d. To facilitate the adequate and economic commercialization of the agricultural production of its credit subjects, whether directly or through producers' organizations, and to this end it may make the corresponding arrangements with the National Institute for Foreign and Domestic Trade, thus effecting a good coordination of both institutions;
- e. To carry out commercial, warehousing and conservation operations of agricultural products in coordination with the National Institute for Foreign and Domestic Trade (INCEI). In these instances, it will act in a manner something like an in-Bond Warehouse, according to the respective law;
- f. To furnish its credit subjects, without profit, the necessary inputs for their agricultural or industrial activities;
- g. To furnish its credit subjects, under contract, equipment, tools and other implements and capital goods which are required for their production activities; and organize agricultural machinery pools for rent to its credit subjects at minimum prices;
- h. To plan, design and carry out the agricultural engineering works, as well as to establish, operate and maintain the physical installations that were needed in carrying out its purposes;
- i. To promote and assist the improvement of the rural organizations, such as communities, community boards, cooperatives and other associations engaged in improving the living and working conditions of their members;

j. To submit to the Executive Power the integral programs and projects of public investment in coordination with the organizations of the State in the Rural Sector; to execute those projects and programs assigned to it and to secure as coordinator of all their investments and services;

k. To contract the necessary loans for the implementation of its program;

l. To procure any kind of goods that were needed for the accomplishment of its purposes, make use of them and enter into all kinds of juristic acts in relation to them;

m. To act as trustee of trusteeships designed for the welfare and improvement of the campesino; and

n. To submit to the Agrarian Institute, the production programs in the colonization plans of the said institute, and furnish the adequate financing.

## ANNEX VII

### INVIERNO PROGRAM COMPONENTS

Community Organization/Promotion. To stimulate local interest in the INVIERNO program as a means for obtaining participation in the development process (while at the same time attempting to reduce INVIERNO operational costs by directing their activities through local organizations), INVIERNO early introduced "MOC." This acronym applies to the (1) motivation-conscience raising activity of involving project participants and community members to contribute in the development process, (2) organization-assistance in local development organization creation, and (3) capacitation--providing training in local leadership development, self-help mobilization. Originally, one-purpose project specific community organization activities were encouraged. More recently, MOC emphasis has been directed to the promotion of a locally-elected community board (junta comunitaria) to serve as the local development interfaces unit between all outside agencies and the community. The juntas are the focus of increased training to facilitate INVIERNO's work within the 283 communities presently being served.

Agricultural Training. Respecting the low-level of agricultural technology previously mentioned, emphasis has been directed to developing an appropriate "extension" system to

introduce application of agricultural inputs and other cultural practices. Training plots, practical demonstrations, problem oriented presentations, visitations, radio information and instructional pamphlets have been incorporated which (when combined with the other services provided), have brought about "appreciable increases" in the application of modern technology (85, p. 40).

Agricultural Credit. Innovative mobile banking services were developed to provide for community level loan application and notification, and the provision of funding for multi-purpose development needs. The first loan was approved in March 1976--ten months after INVIERNO's creation, and by June 1978, 20,000 loans averaging less than \$200 each had been extended to cover 8,500 small farm socios (member clients).

Agricultural Input-Supply. To make effective use of technology and credit, quality inputs must be provided on a timely basis. Resulting from the supplier to community delivery system developed by INVIERNO, fertilizer application among socios more than doubled between 1976 and 1977 (85, p. 76). This is particularly noteworthy when it is estimated that 75 percent of the socios in Region V had never used chemical fertilizers before the arrival of INVIERNO.

Crop Marketing. To assist the farmer in product commercialization, a price and marketing information service and producer/buyer product availability coordinating service was developed.

Adoptive Research. In order to assure the introduction of new cropping systems, and introduction of improved basic grain and vegetable varieties, INVIERNO contracted with INTA, the Nicaraguan Institute for Agricultural Technology, for them to conduct adoptive research activities appropriate to socio needs. Some promising results have been observed with white maize, sorghum, black beans, tomato and cabbage (85, p. 82).

In addition, as some socios have access to or own from ten to forty manzanas, but due to the (1) limited labor availability during periods of land preparation and harvest, (2) limited availability of oxen at planting time, and (3) rough and sharply inclined terrain, this family seldom has the capacity to expand their farm beyond the two and one-half to three manzanas maximum level for basic grains production (86). Therefore the project is developing socios tractor-rental schemes and experimenting with improved plows.

Family Garden. In order to increase rural family nutritional levels, family incomes, and involve women more within the program, during 1977 a pilot home garden project was introduced for interested INVIERNO-promoted women's clubs. The evaluation of the initial phase of the project indicated that different vegetables were introduced in the diet and that more nutritious cooking practices were introduced (85, p. 85). The project is expected to be expanded to other CEDES.

Small Business Enterprises. Complementary to the project focus of increasing rural employment opportunities is this

activity which provides credit and technical assistance for family business, craft and small industrial activities. During 1977, the first year of the project, 292 business loans averaging \$1,250 were approved in three CEDEs (87, p. 26). Beyond the increased family labor productivity generated under this activity, the average business generated about one additional hired person per each \$1,400 borrowed. Future expansion to all CEDEs will be to promote more employment-generation investments.

Rural Access Roads. Program experience has confirmed UNASEC concerns for improvement of the existing road system and its expansion in order to assure improved input/output commerce and for government services for the communities. This project, crucial to program expansion, is to be executed by the Ministry of Public Work. Serious delays have hampered construction because of the difficulties with equipment procurement and whether a private contractor or the Ministry would have executing responsibilities. Actual road construction work was initiated in June 1978.

Municipal Development. This project is to provide rural municipalities the capacity to improve their administrative and income-generating activities by assisting in the development of improved rural marketing infrastructure system. New market-places, slaughter houses, pick-up points, etc. from which rural residents could more easily market their products and generate municipal revenues are planned. Under a joint-agreement with the Ministry of Government, INVIERNO has loan administration

responsibilities for the projects promoted by the Ministry. As of July 1978, six projects had been approved.

Land Sale Guarantee. This project complements the new under-utilized land tax referred to in annex 5, pages 192-193, and thus seeks to improve the availability of land to the small farmer by facilitating the sale by larger land owners to smaller producers. Legislation in February and May 1978, established both a national land sale guarantee fund and the new tax mechanism which is designed to motivate the larger producers to maximize utilization of their land to avoid the penalty tax for unused land with the potential for crop production. A special fund, to be administered by the Central Bank, and implemented by INVIERNO, BNN, INFONAC, etc. provides a guarantee of payment to the original seller in the event buyer defaults. This activity is now being implemented and has attracted interest in both Regions by both land owners and socios.

Rural Housing. As a means of "capturing" the anticipated income increase of project participants and to improve their life quality, this component provides for the improvement of their rustic dwelling. The project has not yet been initiated.

Public Health. To facilitate delivery of rural health facilities, INVIERNO maintains close relationship with the Ministry of Public Health in promoting a variety of community level health-related activities supported by AID and World Bank (85, p. 100). INVIERNO has organized a large number of communities for vaccination campaigns, advised ministry health

officials of epidemics in isolated areas, and collaborated with the Ministry in the construction of wells and latrines throughout Region V.

Rural Education. During 1977, INVIERNO promoted community development projects resulted in 35 schools assisted with new construction or improvement. Surveys have also been conducted by INVIERNO regarding condition of local school and teacher attendance which has been used by the Ministry.

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## GLOSSARY

- AGROMOC: INVIERNO job title. An agronomist with additional human relations and communication training. Primary liason man with community on agricultural technology.
- BNN: National Bank of Nicaragua (Banco Nacional de Nicaragua).
- CEDE: Zonal Development Center (Centro de Desarallo).
- CENCA: Training center for public agriculture sector (Centro de Capacitacion Nacional).
- Colaborator: Voluntary farmer selected as initial contact point for INVIERNO personnel.
- Cooperator: Land owner who provides small area for training plot.
- Cordoba: Nicaraguan currency unit, c \$ 7.00 = \$ 1.00 US.
- Credomerc: INVIERNO job title. Responsible for selling inputs to farmer and assisting in produce marketing.
- DIPSA: Department of Sectorial Planning, Ministry of agriculture planning, budgeting and evaluating unit (Direccion de Planificacion del Secta Agropecuario)
- INFONAC: Nicaraguan Development Institute.
- INTA: Nicaraguan Institute of Agriculture Technology--semi-autonomous agency responsible for agricultural research, extension and education (Instituto Nicaraguense de Tecnologia Agropecuaria).
- Junta Comunitaria: Community board consisting of elected farmers--serves as local organization for INVIERNO's developmental efforts.
- Manzana: Land unit measurement, one manzana is the equivalent of 0.7 hectares.
- Quintals: One quintal is the equivalent to 100 kilos.
- Social Promoter: INVIERNO job title. Primary community development/junta comunitaria worker (Promotor Social).

Tienda Campesino: Cooperative type structure envisioned to replace INVIERNO super-structure at CEDE level.

Socio: A participating farmer in the INVIERNO credit program.