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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

NICARAGUA

PROJECT PAPER

LAND REFORM

LAC/DR:80-11

Project Number:524-0180

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AGENCY FOR INTERNATIONAL DEVELOPMENT				1. TRANSACTION CODE: A A = Add C = Change D = Delete		Amendment Number		DOCUMENT CODE 3		
PROJECT DATA SHEET										
2. COUNTRY/ENTITY Nicaragua				3. PROJECT NUMBER 524-0180						
4. BUREAU/OFFICE LAC				05		Land Reform				
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 12 31 84				7. ESTIMATED DATE OF OBLIGATION (Under 'B' below, enter 1, 2, 3, or 4) A. Initial FY 80 B. Quarter 4 C. Final FY 81						
8. COSTS (\$000 OR EQUIVALENT \$1 =)										
A. FUNDING SOURCE		FIRST FY 80			LIFE OF PROJECT					
		B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total			
AID Appropriated Total		670	30	700	1,345	45	1,390			
(Grant)		(670)	(30)	(700)	(1,345)	(45)	(1,390)			
(Loan)		()	()	()	()	()	()			
Other U.S.	1.									
	2.									
Host Country			137	137		530	530			
Other Donor(s)										
TOTALS		670	167	837	1,345	575	1,920			
9. SCHEDULE OF AID FUNDING (\$000)										
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT		
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	
(1) FN				-	-	700	-	1,390		
(2)										
(3)										
(4)										
TOTALS						700		1,390		
10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)								11. SECONDARY PURPOSE CODE		
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)										
A. Code										
B. Amount										
13. PROJECT PURPOSE (maximum 480 characters)										
To strengthen the institutional infrastructure of the Ministry of Agriculture's Center for Research on Agrarian Reform and improve its capacity to design and carry out a program of applied research responsive to the problems arising from the implementation of the agrarian reform.										
14. SCHEDULED EVALUATIONS						15. SOURCE/ORIGIN OF GOODS AND SERVICES				
Interim	MM YY	MM YY	Final	MM YY		<input checked="" type="checkbox"/> 000	<input type="checkbox"/> 941	<input type="checkbox"/> Local	<input type="checkbox"/> Other (Specify) Central America	
	1 0 8 1	1 0 8 2		1 0 8 4						
16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)										
17. APPROVED BY	Signature Lawrence E. Harrison			Date Signed MM DD YY 0 9 0 2 8 0			18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY			
	Title Director, USAID/Nicaragua									

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON D C 20523

PROJECT AUTHORIZATION

Name of Country: Nicaragua
Name of Project: Land Reform
Number of Project: 524-G180

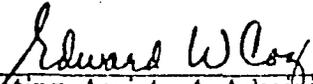
1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Land Reform project for Nicaragua involving planned obligations of not to exceed \$1,390,000 in grant funds over a two-year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project consists of a program to strengthen the institutional infrastructure of the Center for Research on Agrarian Reform (CIERA) of the Ministry of Agricultural Development (MIDA) of the Government for National Reconstruction of Nicaragua (GRN) and improve its capacity to design and carry out a program of applied research responsive to the problems arising from the implementation of the agrarian reform (the "Project"). The Project will be financed pursuant to a Project Grant Agreement with the GRN and an amendment to the Cooperative Agreement with the Land Tenure Center of the University of Wisconsin.

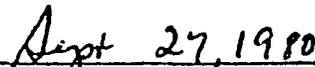
3. The Project Grant Agreement and the amendment to the Cooperative Agreement, which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate:

Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the United States or in countries which are members of the Central American Common Market, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.



Acting Assistant Administrator
Bureau for Latin America
and the Caribbean



Date

Clearances:

GC/LAC: BVeret BV/HW date 9/24/80
LAC/DEN: RGomez RV date 11/11/80
LAC/Dit: CPeasley CP date 9/24/80

LAC/DR: MBrown MB date _____

GC/LAC: GMWinte GM kg: 9/17/80: x29182

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I. SUMMARY DESCRIPTION AND RECOMMENDATIONS

A. Recommendations:

USAID/Nicaragua recommends authorization of a \$1.39 million institutional development grant to the Government for National Reconstruction of Nicaragua (GRN) to finance technical assistance, training, commodities and other costs for the Ministry of Agriculture's Center for Research on Agrarian Reform (CIERA). The Land Tenure Center of the University of Wisconsin will be the participating U.S. institution. The project will be initiated in fiscal year 1980 and completed in fiscal year 1984.

B. Project Summary

The purpose of the project is to help strengthen the capacity of the Center for Research on Agrarian Reform (CIERA) to design and carry-out a program of applied research addressing short- and long-range problems associated with the implementation of the GRN's Agrarian Reform.

Rural Nicaragua has undergone tremendous changes since the insurrection. Lands formerly owned by members of the Somoza Regime and now controlled by the GRN account for 20-25 percent of the country's farm land. In 1980, the state-managed sector (reformed sector) will produce 22 percent of the sugar, 15 percent of the coffee, 10 percent of the meat and 6 percent of the cotton grown in the country. Individual farmers are being encouraged to form communal arrangements. More traditional credit and service cooperatives are expanding rapidly. The newly formed association of rural workers (ATC) is organizing landless laborers and cooperative members. Credit and technical assistance services, which reached no more than 25 percent of small farmers prior to the insurrection, are expanding rapidly.

Many of the new policies and programs of the GRN have necessarily been formulated with inadequate data on production, marketing, employment, migration patterns and other aspects of the agricultural sector. The Government realizes, however, that better information on the reality of rural Nicaragua is essential to gradually establish an incentive structure and investment programs which will both stimulate production and result in a more equitable distribution of assets and income. CIERA has thus been assigned responsibility for providing Ministry of Agriculture officials with information and analysis in order to define strategies, develop action programs and adapt their policies and programs to meet the needs of Nicaragua's rural populace and to increase production, especially export-oriented production. The Director of CIERA is a member of the Minister of Agriculture's Advisory Committee which assures that research results help guide high level decisions affecting the agricultural sector.

The direct outputs expected from the project are applied research, information disseminations, increased data storage and analysis capabilities, and improved library facilities.

Principal Outputs

1. Applied Research - approximately 16 studies will be carried out during the three-year project in four subject areas:
 - a. rural credit and marketing programs;
 - b. seasonal labor markets;
 - c. the performance of individual vs. group farms; and
 - d. labor - management concerns.
2. Information Dissemination - CIERA will maintain public information and training efforts. Four seminars/workshops will be given to focus attention on specific problems.
3. Data Storage and Analysis - computerized data sources will be developed for 1971, 1977 and 1980, a system will be established for storing, reviewing, and analyzing data, and a plan for improving CIERA's capacity to utilize cadastral and land-use data will be prepared during the first year.
4. Improved Library - CIERA's library facilities and staff will be upgraded.

C. Summary Financial Plan

The total cost of the program is estimated to be \$1,920,000; AID will provide grant assistance totalling \$1,390,000; GRN contributions are valued at \$530,000.

The AID portion of the project will finance 36 months of long-term technical assistance; 48 months of U.S. research assistants; 29 months of short-term technical assistance; long and short-term training for 14 Nicaraguans; four seminars; commodities such as vehicles, office equipment, library materials and data processing equipment and materials; and administrative support costs.

GRN contributions include staff salaries for research assistants, office support costs for U.S. technicians, and other local costs related to field research, data analysis and the expansion of facilities.

Project Inputs

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
Administrative Support	120	105	225
Long-Term Advisor/Coordinator (36 months)	131	-	131
U.S. and Nicaraguan Research Assistants	82	201	283
Short-Term Technical Assistance and Counterparts	236	40	276
Commodities and Related Costs	214	124	338
Training	367	-	367
Seminars	85	-	85
Sub-Total	1,235	470	1,705
Inflation and Contingencies	155	60	215
Total	\$1,390	\$530	\$1,920

D. Implementation Arrangements

The project proposes a cooperative program between the Land Tenure Center (LTC) of the University of Wisconsin and CIERA which builds upon a relationship initiated soon after the overthrow of the Somoza regime. In August of 1979, two senior LTC associates traveled to Nicaragua at the request of the Ministry of Agriculture to discuss the possibility of providing assistance to the agrarian reform process. In December of 1979, the minister of agriculture, Comandante Jaime Wheelock visited the LTC to continue the discussions concerning the establishment of a joint program of activities.

The first collaborative effort consisted of a week-long seminar held in Managua during February, 1980 and funded by USAID/Nicaragua. During the seminar, LTC professors, MIDA personnel and former ministers, agrarian reform officials and scholars from other Latin American countries reviewed the problems in planning and implementing the agrarian reform programs in such countries as Chile, China, Mexico, Peru and Syria and discussed the implication of these experiences for Nicaragua.

Subsequent visits to Nicaragua by LTC associates and a trip in July, 1980 to the LTC by five Ministry officials, including the directors of CIERA and the planning department, culminated in a general

agreement to work toward a program for strengthening the institutional structure and research capacity of CIERA.

In view of the close working relationship that has developed between CIERA and the LTC, and given the LTC's comparative advantage in dealing with issues relating to land reform, the principal inputs, long and short-term technical assistance and training, will be procured from that institution.

II. BACKGROUND

A. Changes in the Agricultural Sector

The Agricultural Sector is of utmost importance for the development of Nicaragua. More than 70% of the country's foreign exchange comes from the Agricultural Sector, particularly from cotton, coffee, sugar and meat. If the processing of agricultural products is included, the Agricultural Sector accounts for almost 35% of the country's Gross Domestic Product (GDP). In addition, according to the FAO (1979), more than 45% of the economically active population (EAP) depends upon agriculture for its livelihood.

Notwithstanding its great importance, the Agricultural Sector has not been very dynamic. Except for sugar, cotton and irrigated rice, agricultural productivity, measured in terms of output per unit of land or per worker, is very low. Production techniques tend to be outdated and based on extensive farming. As commonly occurs in countries exporting traditional agricultural products, domestic demand is low due to the lack of purchasing power of the majority of the population. As a result, there are few incentives for the production of basic foodstuffs. In Nicaragua the production of these commodities (except for irrigated rice) tends to be concentrated in the hands of small farmers who traditionally have lacked sufficient resources (credit, technical assistance, etc) to modernize their production.

Less developed countries which depend heavily on traditional agricultural exports frequently have a highly skewed distribution of assets and incomes. This has been especially true of Nicaragua, because of the almost complete control exercised by the Somoza family over the economy. This family owned hundreds of thousands of acres of land, the two meat exporting slaughter-houses, several sugar mills and a major portion of the fishing industry. During the Somoza era, farmers and rural workers' organizations were discouraged. Vast rural poverty coexisted with great concentration of wealth. Fifty percent of all farms (those with fewer than 7 hectares) controlled only 3.5% of the farm land, while 1.9% of the farms controlled 47% of the land.

The inequitable distribution of wealth and income was reflected in almost all social and economic indicators. For example,

the infant mortality rate was among the highest of Latin America. According to FAO (1979), the per capita income of 50% of the poorest rural population was \$35 in 1972.

The War

The already difficult situation faced by the rural poor worsened with the 1979 war, which ended with the overthrow of the Somoza regime. Due to the war, total agricultural production dropped 37% in 1979 (CEPAL). Moreover, approximately 80% of the cotton crop was either not planted or lost. Large numbers of cattle including breeding stock were slaughtered. Although losses in grain production were not as disastrous, marketing and storage systems were affected and the new government was compelled to import substantial amounts of basic foodstuffs first to prevent starvation and later, to satisfy normal domestic demand.

The National Reconstruction Government

When the Somoza Government was ousted in July of 1979, a new government was established to provide leadership in the reconstruction of the national economy along new lines. The new government advocates the development of a mixed economy, including both state and private enterprises. The government is led by a five-member Junta in coordination with the State Council which has 47 members representing the various political, economic and social sectors which opposed the Somoza regime.

Agrarian Reform

One of the most dramatic measures taken by the new government was the confiscation of all of the land belonging to the Somoza family or its supporters. In total, approximately 1,200 farms were confiscated; a total of 840,000 hectares or 20-25% of the country's farm land. Most of these farms were large and a substantial number used intensive production techniques. From the beginning, INRA decided to operate confiscated farms as large production units, rather than dividing them among campesinos. By preserving units intact, the GRN sought to maximize existing economies of scale, minimize disruption and ensure the export oriented nature of production. In 1980 the state managed sector (reformed sector) will produce 52% of the sugar, 15% of the coffee, 10% of the mear and 6% of the cotton grown in the country.

To administer these enterprises, the GRN organized the Nicaraguan Institute of Agrarian Reform (INRA). Initially, INRA was established as a special institute with ministerial status, but it is now a part of the Ministry of Agricultural Development (MIDA). Some of the land acquired by INRA has been converted into production cooperatives. However, the majority of properties have been converted into state farms called State Production Units (UPE). The UPEs, in groups of 2-5 units, are in turn placed, for administrative and planning purposes, within Agricultural Production Complexes (CPA), managed by administrators appointed by INRA's regional offices. There are 170 of these complexes throughout the country. Farms which use sophisticated technology or which have agro-industrial processing capacities are managed by AGROINRA, a sub-division of INRA.

Presently, the UPEs are managed by administrators appointed by the state. However, MIDA is organizing and training agricultural workers to increase their participation in farm management. The government also has encouraged the development of organizations of farmers and rural workers on private lands. The Rural Workers Association (ATC), several types of production and service cooperatives, National Agricultural Commissions and Economic Reactivation Assemblies are examples of such organizations.

Programs for the Small Producers and Other MIDA/INRA Activities

To improve the living conditions of the rural population, INRA also works with groups not included in the reformed sector. PROCAMPO, an outgrowth of AID supported program known as INVIERNO, is the department within INRA which offers technical assistance and training to small farmers. It expedites the organization of traditional credit and service cooperatives as well as a new type of production cooperatives called Agricultural Sandinista Cooperatives (CAS). In a CAS the participating farmers agree to pool their land and farm it as a single unit. PROCAMPO services are being expanded from the original two regions to nationwide coverage.

MIDA also presides over a national commission for small agricultural production which was created in March, 1980, for the purpose of coordinating services to small producers and encouraging wider participation by small farmers in the rural development process. Aside from the MIDA delegate, this committee is made up by delegates from the National Development Bank (BND), PROCAMPO, ATC, the State Marketing Enterprise (ENABAS), and the Ministry of Planning.

Regional committees with the same representation have also been established, and in addition the national commission has organized credit sub-committees at national, departmental and local (municipal) levels. The local credit committees have been authorized to approve, within limits, the amounts of credit available for small producers.

Other MIDA programs and policies deal with the control and regulation of land rental, salaries and forms of payment and export of agricultural products. MIDA now also shares responsibility for the operation of new social services in rural areas, such as the National Literacy Campaign and health and rural housing services.

B. Current Policies and Programs

While the general directions of policies and programs of the government concerning the new structure of the Agricultural Sector are clear; e.g. a mixed economy, a concern for export production, a desire to expand immediately credit and technical services to the rural poor nationwide, and a preference for group farming, the specifics of policy and programs are less clear. The Nicaraguans feel that they are at a unique moment in history, and while they are eager to learn from the experiences of Cuba, Chile and other countries which have tried to transform their agricultural sectors, Nicaraguans are convinced that no previous experience provides a blueprint for Nicaragua and that answers will have to be developed here on the basis of the realities of the Nicaraguan Agricultural Sector.

The Ministry of Agriculture (MIDA) has a tremendous challenge before it. Almost daily MIDA faces decisions about the future organization of state and private farm production and service units, price policy, credit policy, investment programs, and the role of labor. Unfortunately, while the Ministry needs information on the probable responses of the rural populace to proposed policies and programs, the Ministry has little data to use to make informed decisions.

There are few reliable primary data sources in Nicaragua. The Somoza regime was infamous for doctoring data to provide an illusion of socio-economic progress; some major data sources, such as the 1971 agricultural census, were destroyed in the 1972 earthquake or the insurrection.

C. CIERA and The Role of Research

The Center for Research and Study of the Agrarian Reform (CIERA) has been created recently as a division of the Ministry of

Agriculture. CIERA is to perform socio-economic research that would provide MIDA authorities with information and analysis in order to define strategy, develop action programs and adapt their interventions to meet the needs of Nicaragua's rural populace.

CIERA's influence within the Ministry of Agriculture has been growing steadily during the first year of reconstruction. Other organizations within the Ministry of Agriculture, such as INRA and PROCAMPC, have turned with increasing frequency to CIERA for analysis and interpretation of existing data and for short-term research to answer specific, policy-related questions. Unlike many research entities, whose work is seen as esoteric or "academic" by policy makers, CIERA has emerged as an integral part of the decision-making structure in the reform process. Indeed, the demand for program relevant analysis has become so great that the issue is not so much one of whether CIERA's work will have programmatic relevance as one of how to increase its response capability as quickly as possible. The present project is designed for meeting this need.

The project will increase the capacity of CIERA to carry out and disseminate the results of applied research, to generate, store and analyze data, to utilize cadastral and land-use data generated by others, and to research problems using secondary sources.

D. Other Assistance to CIERA

The GRN has received assistance from several bilateral and multilateral sources:

Four professionals now working full time at CIERA are being funded under a grant agreement between the GRN and The Inter-american Development Bank.

The International Labor Organization is funding a study of labor problems associated with cotton production.

CIERA is negotiating with the Ford Foundation for funds to support a preliminary diagnosis of social change in rural Nicaragua during the first year of the GRN.

The Comité Interamericano de Planificación (CIAP) has offered to assist CIERA in organizing and financing a series of seminars on agriculture sector planning.

The United Nations Development Program (UNDP) and the Government of Mexico will provide, through the Centro de Investigación para Desarrollo Rural, technical assistance on organizational and programmatic aspects of CIERA.

5. Relationship to Other AID Programs

USAID/Nicaragua has one ongoing (Loan 031, INVIERNO) and two additional proposed programs in the agricultural sector.

The INVIERNO (now PROCAMPO) loan has two major objectives: 1) to assist the Ministry of Agriculture to become a planning, programming and evaluating Ministry which can effectively coordinate the institutions working in the agricultural sector and 2) to assist PROCAMPO in providing productive inputs and services to small farmers. After a lengthy reprogramming process, it has been decided to utilize remaining funds (almost \$5.6 million) as follows: approximately \$1.1 million will finance technical assistance, training, and data gathering as institution building activities, and 2) approximately \$4.5 million will provide credit, vehicles and access roads to help extend PROCAMPO's coverage from the originally planned two departments to all sixteen departments.

While the outline of the new \$21 million Integrated Rural Development program projected for fiscal year 1981 will be filled in over the next few months, it will probably finance infrastructure for the expansion of agronomic research, extension and agricultural education systems as well as provide funds for crop credit and investment in equipment and productive infrastructure.

A large Title XII technical assistance and training project is currently under discussion with the Ministry of Agriculture to help strengthen agricultural research, education, and extension systems and to meet additional short and long-term technical assistance and training needs in areas such as marketing and planning.

III. PROJECT DESCRIPTION

A. Project Goal: To enhance the effectiveness of GRN rural development policies and programs. The project should help the GRN adopt policies and programs which are responsive to the needs of rural Nicaraguans and which provide the incentives, capital and services necessary to generate sustained increases in income and employment.

B. Purpose: To strengthen the institutional infrastructure of MIDA's Center for Research on Agrarian Reform (CIERA) and improve its capacity to design and carry out a program of applied research responsive to the problems arising from the implementation of the agrarian reform.

C. End of Project Status

1. CIERA is able to identify and rank order operational problems encountered in the implementation of the agrarian reform and other rural development programs, and to design and carry out a program of research addressing these problems.

2. Professional staff is increased from 10 to approximately 22 trained researchers capable of carrying out some five quality studies a year.

3. Research program is providing accurate and useful information to decision-makers on the interrelationships between structural changes in the agricultural sector and:

- a. rural credit and marketing programs;
- b. rural seasonal labor markets;
- c. performance of individual vs. group farms; and
- d. labor management concerns.

4. CIERA is able to generate, store and analyze statistical data; to utilize cadastral and land-use data generated by others; and to research problems using secondary sources.

D. Outputs and Inputs

CIERA's proposed program of institution building and research has emerged from several months of interaction and dialogue among policy makers at various levels of the GRN and international consultants, including representatives of the United Nations, multi-lateral

and bi-lateral development assistance agencies, and universities in the U.S., Latin America and Europe. This project is designed to facilitate activities in applied research, information dissemination, and data storage and analysis, and to improve CIERA's library facilities.

1) Applied Research

As the research arm of MIDA/INRA, CIERA is in continuous touch with the various national institutions charged with implementing the agrarian reform. As problems emerge in the day-to-day operations of these agencies, CIERA is being asked to compile information and carry out short-term applied research to meet immediate programmatic needs.

Requests for research emerge from weekly meetings of the advisory committee of MIDA, monthly meetings of the regional directors of INRA, periodic discussions with functionaries of the National Development Bank (BND) and the National Basic Grains Storage Company (ENABAS), bi-weekly meetings with leaders of the Association of Rural Workers (ATC) and professionals in charge of MIDA's rural training programs and frequent contact with the directors of sections of MIDA, such as PROCAMPO and AGRO-INRA.

After nearly a year of responding to requests, four broad areas of operational concern have emerged as requiring priority attention by CIERA. These areas of analysis focus on the effect of agrarian reform policies on rural credit and marketing programs; seasonal labor markets; the productivity and effect on equity of individual and group farms in the private sector, and labor-management issues in the reformed and private sectors.

a. Analysis of Rural Credit and Marketing Programs

Several specific concerns have arisen under this general rubric. For example, functionaries of the National Development Bank (BND) have expressed concern about the prospects for recuperating monies lent to small producers for the current crop season. This is especially true in newly cultivated areas which have expanded very rapidly in the first year of the GRN. It is estimated that large numbers of campesinos received credit to produce basic grains in marginally accessible areas. MIDA/INRA, the BND and ENABAS are now faced with the problem not only of recuperating loans, but also providing adequate marketing,

transportation and storage services for corn and beans which will soon be ready for harvest. A major restructuring of credit and marketing services is contemplated. Specific subprojects under this general heading are designed to provide information needed to plan and execute necessary changes. Four such projects, dealing with beans, corn, and an overall analysis of input and output market structures are planned for 1980 and 1982 (See Annex I for further details).

b. Analysis of Seasonal Labor Markets

A significant problem in both the private and reformed sectors has been a scarcity of labor during harvest periods, especially for the principal export crops: coffee, sugar cane and cotton. Increased availability of land and credit, new income opportunities, the breakdown of traditional patron-client systems and the lack of a fully adequate system of incentives have all been pointed to as possible contributing causes.

Research on these issues will contribute directly to an effort by the GRN to establish a National System of Seasonal Labor (SNTE) to facilitate the organization and movement of workers to high demand areas.

Subprojects addressing long-term seasonal labor problems for coffee and sugar cane are planned for 1980/81. These will complement an ILO analysis, which focuses on the short-term labor problem in cotton. A third subproject will consist of an analysis of the SNTE during its first year of operation (81/82).

c. Analysis of Individual and Group Farming in the Private Sector

The revolution and ensuing reconstruction have introduced profound and pervasive structural changes in rural Nicaragua. Buildings and equipment were severely damaged in the war, stocks and supplies were depleted, inputs were consumed, lost or destroyed. Since the war, vast amounts of land have changed hands. The access of the rural poor to credit and other services has greatly increased, as have real wages in most areas.

Of central concern to CIERA is the distribution of the costs and benefits of these changes and new services among various strata of the rural population. This calls for comparative studies of the situations of small-holders, renters, sharecroppers, and members of campesino cooperatives. Several cooperative schemes are being tried, including Service and Credit Coops (CCS), Sandinista Production Coops (CAS), informal groups (Pre-coops) and credit and service mechanisms for individual producers. How well are the cooperatives performing? Are they gaining members or losing them? Which of the various types are supported most strongly by the campesinos? Which provide the most effective linkages with government agencies? What is happening to landless workers? Are they being incorporated into coops? Are they settling on new lands in the frontier? What is the situation with regard to legal title on new frontier lands? What new roles have emerged or are emerging for women in the new campesino economy? To what extent has on-farm consumption increased in this sector, and how is this affecting food supplies in urban areas? What is the proportion of salaried workers to direct producers, and to what extent is this proportion changing? What is happening to income and nutritional levels among different strata of the rural population?

Five specific subprojects address these basic questions about the impact of the revolution and the reform on the campesino economy (See Annex I).

d. Analysis of Labor and Management Issues in the Reformed and Private Sectors

It is generally understood that the effectiveness of the reform sector will depend on how well rural workers are incorporated into the new reform structures. This in large measure will be decided on the basis of whether adequate mechanisms are forged to implement the GRN's policy of increasing the role of campesinos in the planning and administration of the new enterprises. Also a key issue will be the incentive structure. Can a reward system be developed to ensure efficient performance on the part of the new enterprises as well as an equitable return to participants? Can real and potential conflicts between permanent and seasonal laborers be equitably adjudicated?

Labor flows between the reformed and private sector are also of crucial importance. How are these flows affected by

worker/management relations and wage scales in the private sector? These are the principal issues that will be addressed in the four applied research projects proposed under this topic. (See Annex I).

e. Applied Research Inputs

AID's will finance a full-time project advisor/coordinator to help CIERA organize its research program and to coordinate short-term US technical assistance and training. Two full-time administrative assistants and a bilingual secretary will help manage the project from the point of view of procurement, the preparation of narrative and fiscal progress reports, etc. Four US research assistants will help implement specific research projects providing one year each of services. Approximately 23.5 months of short-term technical assistance will be provided in specialized disciplines related to the four main research areas.

A 24 months training program will be developed for 12 Nicaraguan research assistants. It is designed to increase social science research skills and would include courses in rural sociology, communications, agricultural economics, statistics, research design methods, etc. The study program will include nine months academic work in the U.S. and a 15 month research effort in Nicaragua, tied directly to the applied research projects of CIERA. AID will also purchase eight, four-wheel drive vehicles to mobilize field research and office equipment and furniture for CIERA's growing staff.

The Ministry of Agriculture will provide 309 months of research assistants to help carry out the studies, office support for U.S. technicians and other local support costs, e.g. gasoline.

INPUTS FOR APPLIED RESEARCH

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
<u>Administrative Support</u>	120	105	225
<u>Advisor/Coordinator</u> (36 months)	131	-	131
<u>Short-term Technical Assistance</u> (23.5 months)	188	-	188
<u>Research Assistants</u>			
U.S. (48 months)	82	-	82
Nicaraguan (309.5 months)	-	201	201
<u>Commodities and Related Costs</u>			
Vehicles (8) and Operating Costs	72	70	142
Office Furniture and Equipment	42	-	42
<u>Training Course</u>	<u>341</u>	<u>-</u>	<u>341</u>
TOTAL	976	376	1,352

2) Information Dissemination

The most important channel for the flow of applied research results is the director of CIERA who is a member of the highest level decision-making bodies of the Ministry of Agriculture. However, during the three years of the project, AID will finance four (4) seminars/workshops centered on both the results of CIERA's research and topics of concern to the GRN in the implementation of its agrarian reform. Experts on these agrarian reform issues will travel to Managua to participate in the programs. Two seminars are planned for the first year - one dealing with the requirements of establishing a data system; the other with the results of studies on the peasant economy. In the second year, a third seminar will be held focussing on labor management relations in the public and private sectors. In the third year, a final seminar will be held to review the agrarian reform from a global perspective.

Inputs for Information Dissemination

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
International travel, per-diem and local costs of seminars/workshops	<u>85</u>	<u>-</u>	<u>85</u>
Total	85	-	85

3) Data Storage and Analysis

To effectively evaluate Nicaragua's agrarian reform, CIERA needs to develop benchmark information for rural areas, gain access to a computerized data system, and improve its capability to utilize cadastral and land-use data being generated by other GRN agencies.

Currently CIERA is planning to utilize three basic data sources to establish a backdrop to gauge changes occurring in the rural sector. First, it is engaged in an effort to recover and revalidate the data that was collected in the last agricultural census in 1971. There are problems and inconsistencies with the 1971 data now available in Nicaragua, as most of the primary source materials were destroyed in the 1972 earthquake and/or the war. It is believed, however, that the 1971 data was computerized by the University of Missouri, and is available. The first task then, is to review the 1971 agricultural census, collecting and rationalizing available data. Second, CIERA plans to construct a data series documenting changes occurring between 1971 and 1977. This would utilize basically the same variables as the 1971 census. Estimates would be constructed based upon work by MIDA's planning office and other agencies and would yield a picture of the agriculture sector up to the war. Finally, CIERA is interested in establishing a data base for 1980. This would come from a survey that is currently being carried out in connection with the national Literacy Campaign in rural Nicaragua.

CIERA will obtain access to a large computer at the Government House (Casa del Gobierno) to be able to store, review and analyze these data.

Cadastral and land-use data are generated by other agencies of the GRN such as the National Geographic Institute. A plan for enhancing CIERA's capability to retrieve, coordinate and analyze

cadastral and land-use data will be an output of the project to be developed early in the first year of implementation. The plan will identify the required capacity both in terms of human resources and technical equipment required to effectively undertake land-use analysis, ensuring effective coordination of CIERA's analysis with other GRN entities working in this area. AID financial inputs are six months of experts in data banks, computers, and cadastral data, the necessary hardware (i.e. a terminal) and software to provide CIERA access to a GRN's computer and allow researchers to carry out statistical analysis of stored data, and foto interpretation and related cadastral equipment.

The GRN will provide the salaries of counterparts working with short-term experts to develop improved data systems and computer time.

INPUTS FOR DATA STORAGE AND ANALYSIS

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
Short-term technical assistance (6 months)	48	-	48
Computer terminal, installation, software, computer time, salaries, map reading equipment, etc.	<u>61</u>	<u>50</u>	<u>111</u>
	\$109	\$50	\$159

4) Improved Library Facilities

CIERA currently has a very limited access to books and other written materials which could provide information relevant to Nicaragua's land reform. AID will help CIERA build up a collection of materials, establish a functioning system of exchange with research centers and libraries in other countries, especially with the Land Tenure Center at the University of Wisconsin, train two staff members with a short-term program in library science and provide necessary equipment and furniture. The GRN will enlarge CIERA's library facilities to accommodate the expanded collection.

INPUTS FOR IMPROVED LIBRARY FACILITIES

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
Training (2 months x 2)	26	-	26
Equipment and furniture	34	-	34
Books and materials	5	2	7
Facilities expansion	—	<u>42</u>	<u>42</u>
	\$65	\$44	\$109

IV. PROJECT ANALYSES

The proposed project has been reviewed from institutional, technical, social and environmental points of view. The institutional and technical analyses are presented here in their entirety. The social analysis is summarized in this section; the complete analysis is included as an annex. The initial environmental examination (IEE) which recommends a negative determination is included as an annex.

A. Institutional Analysis

(1) Objectives of CIERA

The priority purpose of CIERA is to perform research work concerning Nicaragua's agrarian reform to provide MIDA and INRA authorities with the elements to: define the strategy of agrarian reform and agricultural development; prepare programs for government action and adapt the functioning of the institutions involved in the agricultural sector. To fulfill this general objective, CIERA has been organized in such a manner that:

- it is linked with the higher levels of MIDA, which in turn allows a fluid transmission of the results of studies and investigations,
- it is in close contact with the rural areas and the real situation of agriculture, which allows it to perform objective analysis and recommend solutions,
- it has sufficient autonomy to allow it to undertake a continuous medium term research program; and
- it has expeditious channels to disseminate research results to various users: government officials, rural organizations (campesinos), government technicians, academia and the general public, through publications, seminars, training courses and mass media.

(2) Institutional Role of CIERA

CIERA is a dependency of the Ministry of Agricultural Development (MIDA). Because of its research, evaluation, training and supporting functions regarding national agricultural programs, CIERA's Director is included at the highest level of MIDA's organizational structure in the Minister's Advisory Committee. Within MIDA itself, CIERA is located in the Planning Division.

CIERA's location in the Ministry's organizational chart (see following page), reflects the importance which the GRN has given to the activity of agrarian research and training.

(3) Organization, Structure and Functioning of CIERA

CIERA has a staff of 20 professionals engaged in three functional areas: administration, research and research support activities. (See page 23).

Administration includes the director and sub-director, as well as an administrative office, which is in charge of all matters pertaining to budget, cash, accounting, personnel, vehicles, office, work equipments and materials.

Research is sub-divided into three areas: applied research, basic research and specific projects. Each of these is headed by a professional and has a staff of researchers, assistants, aids and supporting personnel which are temporarily assigned to each study, according to the work program.

Applied Research refers to research oriented towards the study of the functioning of public institutions which intervene in the agricultural sector, the policies and actions which they develop and the results and impacts which they have at different levels. These are evaluation-type investigations.

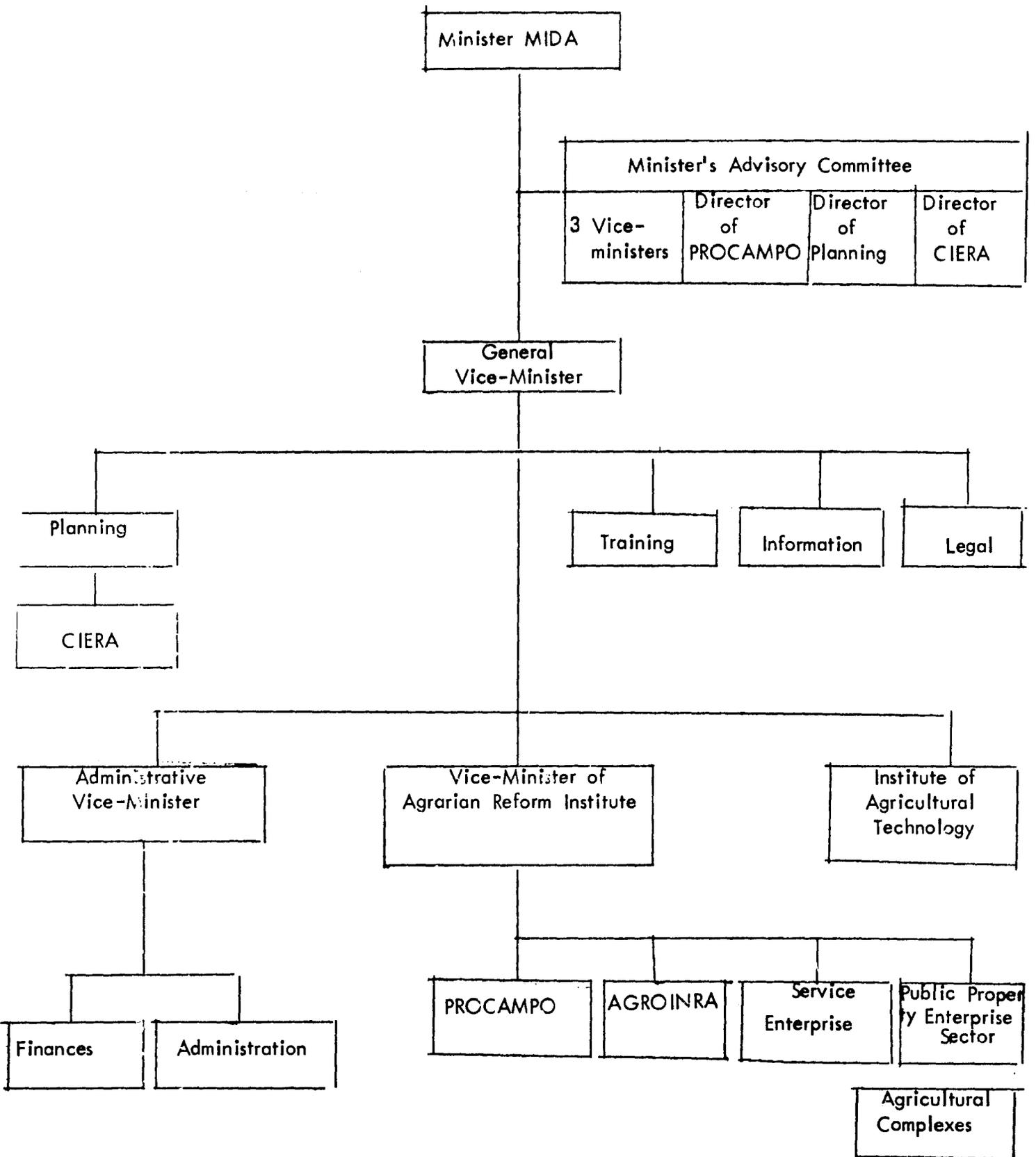
Basic Research is of a longer-term nature and addresses strategic themes to help in the development of agrarian reform policies.

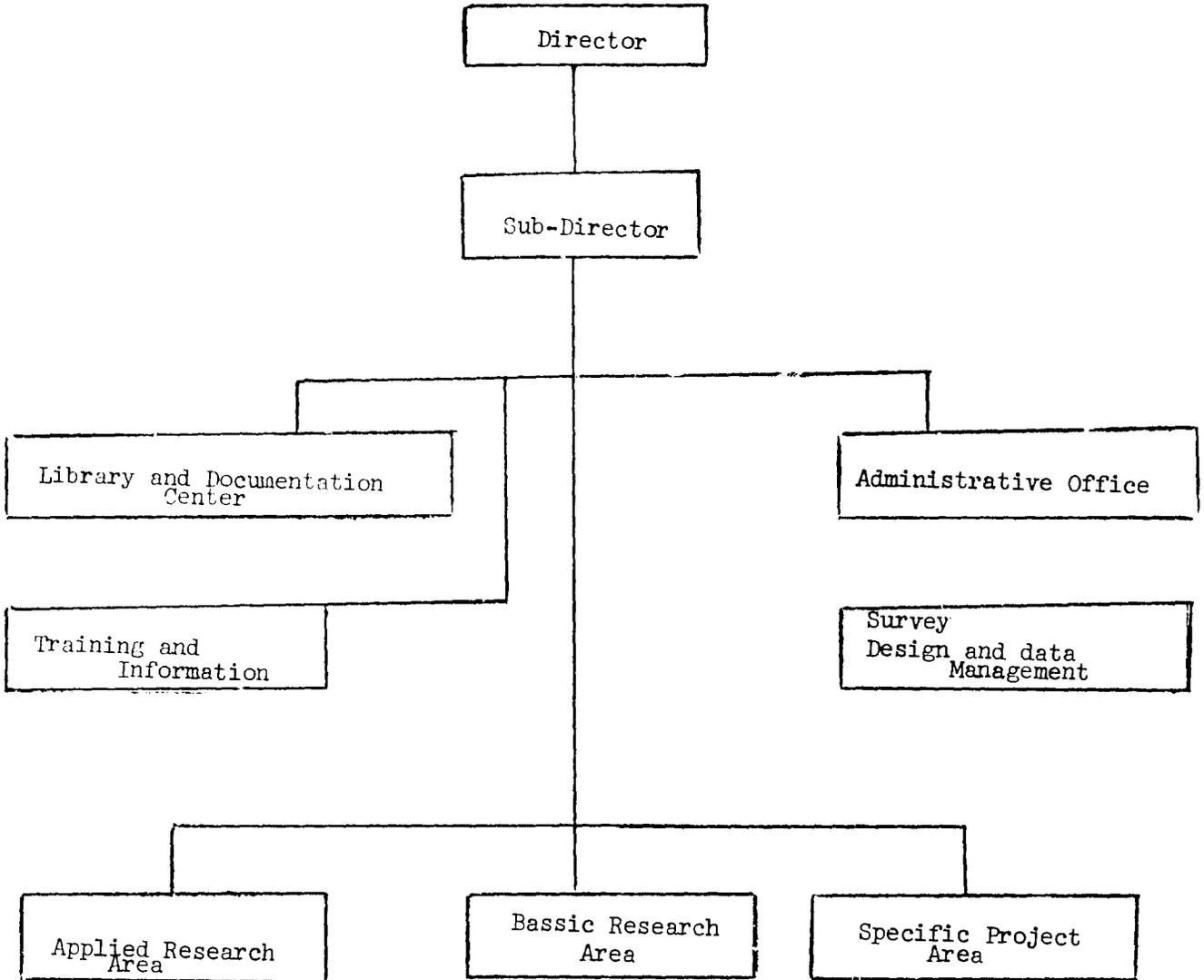
Specific Projects are implemented in response to direct requests from MIDA authorities. Its function is to meet urgent demands and thus avoid disruption of the continuous programs of applied and basic research.

Research is supported by three units: training and information, library and documentation center, and survey design and data management.

The Training and Information Unit is responsible for publishing and distributing research reports, technical notebooks, statistical and reports, and for organizing training events such as short courses, workshops and seminars.

ORGANIZATION CHART - MINISTRY OF AGRICULTURE





The Library Unit and Documentation Center is in charge of exchanging, compiling and classifying books and documents.

The Design and Data Unit is responsible for designing data gathering instruments, as well as data processing and storage systems. It is a support research unit and will be responsible for the data bank to be developed by the project.

(4) Institutional Linkages

MIDA, INRA, PROCAMPO and other entities charged with implementing the agrarian reform are all very new. As their organizational structure and programs have evolved during the first year of reconstruction, they have experienced urgent needs for relevant and timely information that, if it exists at all, is scattered and disorganized. Consequently, they have turned with increasing frequency to CIERA (formerly the Department of Studies of INRA) for analysis and interpretation of existing data and for short-term research to answer specific policy related questions. Unlike many research entities whose work is seen as esoteric or "academic" by policy makers, CIERA has emerged as an integral part of the decision-making structure in the Ministry of Agriculture. Indeed, the demand for program relevant analysis has become so great that the issue is not so much one of whether CIERA's work will have programmatic relevance as one of how to increase its response capability as quickly as possible. The present project is designed for meeting this need.

CIERA has also established or intends to establish inter-institutional cooperation, not only with the agricultural departments, but also with other Nicaraguan research, training and teaching centers, so as to take advantage of their experience. CIERA has already established support agreements with the universities to facilitate the participation in CIERA of agricultural and social science students in tasks which help them gain experience and professional knowledge. It is envisaged that the 12 participants in the long-term training program will be recruited through these agreements with Nicaraguan universities and government agencies.

B. Technical Analysis

CIERA uses both participant observation and survey methods in its research program. These methods appear to be both appropriate and adequate, but there is an urgent need for more trained people. CIERA's staff now includes one full-time specialist in sampling and survey research design, and a professional trained in anthropological

research techniques. The present project calls for both formal and in-service training in research design and method to help meet this need. The services of a data systems consultant and a cadaster expert will also be provided during the first year and a computer expert during the second year of the project.

In-service training is an integral part of the project, and has significant feasibility implications. A major purpose of the project is to increase the research competence of present and prospective staff. To this end, each research project will be a training effort. That is, young professionals will be contracted as research assistants who will be fully involved in all aspects of design and execution. The training will be a collaborative effort by senior CIERA staff members already in place, and consultants.

Since the project calls for a considerable increase in the level of effort and expenditure of CIERA, it will accordingly place large demands on its administrative and management unit. At present, the administrative staff consists of one controller and four secretaries. To meet the new demands, the project calls for two additional administrative assistants and a bilingual secretary. They will work closely with the administrative unit and assist in processing vouchers and maintaining financial records and reports associated with the project.

The project design calls for improving CIERA's access to the large computer located at the Government House (Casa del Gobierno). Prior to the purchase of any data processing equipment or materials, expert advice will be provided and plans will be submitted to SER/DM for approval. An initial review of needs by the GRN's computer center indicates that a computer terminal, statistical software and miscellaneous materials should be purchased.

C. Social Analysis

The social soundness analysis included in its entirety in annex four searches for answers to the following questions:

1. What groups will be affected in the chain from research designers to the ultimate hypothesized client or target population (s) and what are the characteristics of those groups and their sociocultural and socioeconomic setting which are most germane to the project and its goals? (The Concerned Populations and Their Characteristics).

2. In what ways have these characteristics been taken into account in project design and to what degree have the relevant groups participated in that design? (Involvement in Project Design).

3. How will these groups participate in the carrying out of the research and the benefits of research findings, and what impact and spread effect might reasonably be anticipated? (Participation in the Project and Its Benefits).

4. What are possible problem areas or untested assumptions which could constrain project success? (Problems and Constraints).

1. THE CONCERNED POPULATIONS AND THEIR CHARACTERISTICS

This section focusses on the vast changes which have been taking place within the rural areas of Nicaragua. The government now controls 20-25 percent of nation's crop land; farmers are encouraged to form communal cooperatives, but are also joining credit and service cooperatives in large numbers. A rural worker's association, (the ATC), is organizing landless laborers and cooperative members. The result has been a bewildering increase in rural organizational forms.

Whereas in 1977, less than 25 percent of Nicaraguan small farmers had access to short-term credit, and still fewer to medium and long-term credit, the GRN is expanding its services nationwide as fast as possible. PROCAMPO is providing technical assistance in over 1,000 rural communities. The National Development Bank has 130 of its 204 offices located in rural areas.

The need for, response to, and effects of the rapid changes taking place in rural areas is the primary focus of research under this project.

2. INVOLVEMENT IN PROJECT DESIGN

There is evidence of a substantial amount of feedback from local level institutions such as PROCAMPO offices, ATC workers, and cooperative groups. The issues thus identified have been examined for their prevalence and relative importance and have formed the rationale for the research problems and sequences of the CIERA work plan.

3. PARTICIPATION IN THE PROJECT AND ITS BENEFITS

The movement of research findings into the decision-making process seems to be assured by CIERA's placement in the Ministry of Agriculture's administrative structure. The effects of constant research and tinkering with policies and programs to adjust and respond to both rural reality and national priorities should touch to some degree all rural Nicaraguans.

4. PROBLEMS AND CONSTRAINTS

CIERA appears to be asking the right questions, to have a good research methodology, and to be able to get research findings into the decision-making process. Political considerations do not appear at this time to be forcing decisions at great variance with conclusions resulting from analysis.

D. ECONOMIC ANALYSES

There is ample evidence from studies done for recent A.I.D. projects that Nicaragua should realize substantial benefits from programs of applied research in the agricultural sector. The agricultural sector is of primary economic importance for the development of Nicaragua. More than 70% of the country's foreign exchange comes from agricultural output and 45% of the economically active population depends upon this sector for its livelihood. The sluggishness of the sector has adversely affected the overall economy of the country.

During the height of political violence in 1979, agricultural production dropped by approximately 37%. It is likely that immediately after this phase, production increased to 75% of its pre-revolutionary level and will reach a plateau of 80% of previous levels during the first post-revolutionary year. It is expected that the outputs of the Project will shorten the process of economic recuperation in the agricultural sector.

However, given the dearth of statistics, it is difficult to quantify this effect at this time. Many of the new programs of the GRN have been formulated with inadequate data on production, marketing, employment, migration patterns and other aspects of the agricultural sector. Nevertheless, the benefits of the applied research programs carried out by CIERA, the implementing agency, are assumed to outweigh the costs of the Project. It is also assumed that strengthening the institutional capacity of CIERA is the most cost-effective approach. Reasons supporting this approach are discussed in the Institutional Analysis and section IV of Annex 4.

V. FINANCIAL PLAN

The total cost of the project is estimated to be \$1.92 million. AID's contribution is expected to be \$1.39 million in grant assistance. The GRN's counterpart is estimated at \$.53 million.

In summary form, the budget provides for the following items:

Summary Budget

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
Administrative Support	120	105	225
Long-Term Advisor/Coordinator (36 months)	131	-	131
U.S. and Nicaraguan Research Assistants	82	201	283
Short-Term Technical Assistance and Counterparts	236	40	276
Commodities and Related Costs	214	124	338
Training	367	-	367
Seminars	85	-	85
Sub-Total	<u>1,235</u>	<u>470</u>	<u>1,705</u>
Inflation and Contingencies	<u>155</u>	<u>60</u>	<u>215</u>
Total	\$1,390	\$530	\$1,920

The following financial plan (Table I) provides a detailed picture of inputs earmarked by fiscal year. Expenditures for short-term technical assistance, GRN research assistants, and U.S. training will lag slightly behind these projections. Expenditures for long-term technical assistance, U.S. research assistants, commodities and other costs should be incurred during the fiscal year in which they are earmarked.

Table II, Costing of Project Outputs/Inputs, consolidates information given in section III, the Project Description.

TABLE 1 : FINANCIAL PLAN
(\$ 000)

	YEAR 1/ FY 81			YEAR 2/FY 82			YEAR 3/FY 83			T O T A L S		
	AID	GRN	TOTAL AID GRN	AID	GRN	TOTAL AID GRN	AID	GRN	TOTAL AID GRN	AID	GRN	AID GRN
<u>Administrative Support</u>										(120)	(105)	(225)
U.S. Assistant (36 p/m)	26.5	-0-	26.5	26.5	-0-	26.5	26.5	-0-	26.5	79.5	-0-	79.5
Local Administrative unit and Office Support	13.5	35	48.5	13.5	35	48.5	13.5	35	48.5	40.5	105	145.5
<u>Technical Assistance and Counterparts</u>										(449)	(241)	(690)
Advisor/Coordinator (36 p/m)	43.7	-0-	43.7	43.7	-0-	43.7	43.7	-0-	43.7	131.1	-0-	131.1
U.S. Research Assistants (48 p/m)	-0-	-0-	-0-	41.1	-0-	41.1	41.1	-0-	41.1	82.2	-0-	82.2
Credit and Marketing (6.5 p/m; 66 p/m) ^{1/}	28	23.4	51.4	24	19.5	43.5	-0-	-0-	-0-	52.0	42.9	94.9
Labor Markets (4 p/m; 66 p/m) ^{1/}	16	21.5	37.5	8	11.7	19.7	8	9.8	17.8	32	43	75
Individual v.s. Group Farms (8 p/m; 110 p/m) ^{1/}	32	32.5	64.5	12	17.5	29.5	20	21.4	41.4	64	71.4	135.4
Labor/Management (5 p/m; 67.5 p/m) ^{1/}	28	16.6	44.6	8	24.4	32.4	4	2.9	6.9	40	43.9	83.9
Data Management (6 p/m; 80 p/m) ^{1/}	32	22.7	54.7	16	11.3	27.3	-0-	6	6	48	40	88
<u>Commodities and Related Costs</u>										(214)	(124)	(338)
Vehicles (8), gasoline and maintenance	72	23.3	95.3	-0-	23.3	23.3	-0-	23.4	23.4	72	70	142
Office furniture and equipment	42.1	-0-	42.1	-0-	-0-	-0-	-0-	-0-	-0-	42.1	-0-	42.1
Data Management equipment, computer time	61.4	2	63.4	-0-	4	4	-0-	4	4	61.5	10	71.5
Library furniture and equipment and facilities expansion	-0-	-0-	-0-	33.7	42	75.7	-0-	-0-	-0-	33.7	42	75.7
Library books, publications and materials	-0-	-0-	-0-	4.7	1	5.7	-0-	1	1	4.7	2	6.7
<u>Training</u>										(367)		(367)
Research Assistants (12)	963	-0-	963	134.3	-0-	134.3	110.7	-0-	110.7	341.3	-0-	341.3
Librarians (2)	26	-0-	26	-0-	-0-	-0-	-0-	-0-	-0-	26	-0-	26
<u>Seminars</u>	30	-0-	30	15	-0-	15	40	-0-	40	85	-0-	85
Totals	<u>547.5</u>	<u>177</u>	<u>724.5</u>	<u>380.5</u>	<u>189.7</u>	<u>570.2</u>	<u>307.5</u>	<u>103.5</u>	<u>411</u>	<u>1235</u>	<u>470</u>	<u>1705</u>
Total with inflation (10% in years two and three) and contingencies.										<u>1,390</u>	<u>530</u>	<u>1,920</u>

1/ (U.S.T.A.; counterparts)

TABLE II
COSTING OF PROJECT OUTPUTS / INPUTS

(US\$ 000's)

PROJECT OUTPUTS

	<u>Applied Research</u>	<u>Information Dissemination</u>	<u>Data Storage and Analysis</u>	<u>Improved Library</u>	<u>Totals</u>	<u>Total with Inflation/Contingencies</u>
<u>Inputs by Source</u>						
<u>AID</u>						
Administrative Support Technical Assistance	120	-0-	-0-	-0-	120	
Advisor/Coordinator	131	-0-	-0-	-0-	131	
Research Assistants	82	-0-	-0-	-0-	82	
Short-term Advisors	188	-0-	48	-0-	236	
Commodities	114	-0-	61	39	214	
Training	341	-0-	-0-	26	367	
Seminars	-0-	85	-0-	-0-	85	
Sub-Total	976	85	109	65	1235	1,390
<u>GRN</u>						
Administrative Support	105	-0-	-0-	-0-	105	
T.A. Counterparts	201	-0-	40	-0-	241	
Gasoline, Computertime, books, etc.	70	-0-	10	44	124	
Sub- Total	376	-0-	50	44	470	530
Total AID/GRN	1352	85	159	109	1,705	1,920

VI. IMPLEMENTATION

A. Implementation Arrangements

The project proposes a cooperative program between the Land Tenure Center (LTC) of the University of Wisconsin and CIERA which builds upon a relationship initiated soon after the overthrow of the Somoza regime. In August of 1979, two senior LTC associates traveled to Nicaragua at the request of MIDA to discuss the possibility of providing assistance to the agrarian reform process. In December of 1979, the Minister of MIDA, Comandante Jaime Wheelock visited the LTC to continue the discussions concerning the establishment of a joint program of activities.

The first collaborative effort consisted of a week-long seminar held in Managua during February, 1980, funded by USAID/Nicaragua. During the seminar LTC professors, MIDA personnel, and former ministers, agrarian reform officials and scholars from other Latin American countries reviewed the problems in planning and implementing the agrarian reform programs in such countries as Chile, China, Mexico, Peru and Syria, and discussed the implications of these experiences for Nicaragua.

Subsequent visits to Nicaragua by LTC associates and a trip in July, 1980 to the LTC by five MIDA officials, including the directors of CIERA and the planning department, culminated in a general agreement to work toward a program for strengthening the institutional structure and research capacity of CIERA.

In view of the close working relationship that has developed between CIERA and the LTC, and given the LTC's comparative advantage in dealing with issues relating to land reform, the principal long and short-term technical assistance will be procured from that institution.

The Mission plans to use DS/RAD's cooperative agreement with the LTC entitled "Access to Land, Water and Natural Resources" to obtain their services and would provide the required funding for the level of effort needed as an add-on to the cooperative agreement.

B. Schedule of Activities

The following list highlights the timing of major project activities. A more complete schedule (a bar chart presentation) is available in annex six.

<u>Activity</u>	<u>Timing</u>
1. Applied Research	(See Annex I)
2. Data Bank	
(a) Technical assistance data systems	Nov. 80 - Jan. 81
(b) Technical assistance for computerizing data bank	Feb. 81 - Apr. 81
3. Cadastral Analysis	
(a) Technical assistance	Feb. 81 - Mar. 81
4. Seminars	
(a) Data Systems	Feb. 81 - Mar. 81
(b) Peasant Economy	July 81
(c) Labor-Mgt. Issues Private and Public Sectors	July 82
(d) Global Analysis of Agrarian Reform	August 83
5. Training	
(a) LTC course (Group I, 6 trainees)	Jan. 81 - Dec. 81
(b) LTC course (Group II, 6 trainees)	Jan. 82 - Dec. 82

C. Evaluation

An annual evaluation will be undertaken jointly by CIERA and AID. These evaluations will focus on the progress of studies, procurement, data collection and storage and the improvement of library facilities.

In addition, an end-of-project evaluation is scheduled following the final seminar which is to be held in August 1983. The seminar will bring together a group of foreign land reform experts to review progress of the agrarian reform. At that time it will be possible to take stock of how relevant CIERA's program of applied research has been in light of the successes and short comings identified by the outside experts.

Also to be evaluated is the effectiveness of the program designed by the LTC to prepare Nicaraguans technicians to undertake field research.

Illustrative List of Applied Research Projects and their Descriptions

<u>Title</u>	<u>Subject</u>	<u>Timing</u>
(A) Analysis of Rural Credit and Marketing Programs		
1. A.1	Analysis of Bean Marketing	11/80 - 3/81
2. A.2	Corn Marketing	8/81 - 11/81
3. A.3(a)	Input and Distribution Analysis	3/81 - 8/81
4. A.5(b)	Input and Distribution Analysis	11/81 - 7/82
(B) Analysis of Seasonal Labor Markets		
5. B.1	Analysis of Labor Usage	11/80 - 3/81
6. B.2	Design National Labor System	4/81 - 3/82
7. B.3	Evaluate National Labor System	12/82 - 4/83
(C) Analysis of Individual and Group Farms Private Sector		
8. C.1	Evaluation of PROCAMPO	1/81 - 8/81
9. C.3	Campesino Production Systems	1/81 - 7/81
10. C.4(a)	Migration to the Frontier	12/81 - 5/81
11. C.4(b)	Land Tenure in the Frontier	7/82 - 12/82
12. C.7	Role of Women/Nutrition	1/83 - 8/83
(D) Analysis of Labor - Management Relations		
13. D. 1/2	Productivities	3/81 - 8/81
14. D.3	Occupational Patterns	7/81 - 6/82
15. D.4	Investment Patterns State and Private Farms	6/82 - 11/82
16. D.5	Legal Aspects State and Private Farms	11/80 - 11/80

A. Rural Credit and Marketing Programs

Four sub-projects are contemplated under this general rubric. In essence they are addressed to the program of the BND and ENABAS. Two deal with credit and marketing problems encountered by these agencies during the current agricultural cycle in basic grains.

Sub-project A.1 deals with second crop beans (Nov. 80 - March 81) and A.2 is concerned with first crop corn (Aug. 81 - Nov. 81). In both studies, the focus will be on small producers individuals, and members of coops who have received credit to produce basic grains. The major concerns are:

1. Recuperation rates on loans;
2. Market channels (formal and informal);
3. Prices ;
4. Production costs;
5. On-farm consumption;
6. Volumes obtained by ENABAS.

A major concern of government officials is that many small producers who have received credit are producing basic grains in the agricultural frontier, and that a large percentage of these crops may be lost for lack of adequate roads, transport and storage facilities, etc. Consequently, the recuperation rates of credits are expected to be low. The major objective of these studies is to assess such problematic situations, and develop recommendations for improving current credit and marketing programs, especially on the frontier.

The other two studies in this area address distributional issues, again with respect to basic grains. Sub-project A.3 (a) deals with the distribution of the bean harvest through ENABAS and other channels among regions of the country, sectors of the rural economy (State and Private) and strata of the population. Sub-project A.3 (b) will analyse the distribution of the corn crop across these same regions, sectors and social groups. These two studies will also examine inputs markets for these two crops. What inputs have small producers used? Where did they get them? At what price? How were they transported, etc? These studies will produce specific recommendations for changes in the delivery system for inputs and the distribution of the outputs of small private producer

B. Seasonal Labor Markets

This project contemplates two studies during 1980-81 and a third in 1983. The first (B.1) will consist of an analysis of problems encountered in the harvest of coffee and sugar cane, and will be coordinated with an ILO study of the cotton harvest. This will be a five month effort, beginning in November of 1980. Case studies will be carried out in Matagalpa and Jinotega, the central pacific zone, Nueva Segovia and Madriz. The problem here is that labor has been scarce in both state and private sectors during seasons of peak demand. The objectives of the research is to identify the probable causes of this labor shortage.

The second seasonal labor study will begin March of 1981 and continue for a full year. Hypotheses developed in the earlier diagnostic

study (B.1) will be tested through both survey and participant observation techniques and recommendations will be developed for a National System of Seasonal Labor (NSTE), designed to motivate and facilitate the movement of workers to areas of peak demand in both public and private sectors. The third project (B.3) will consist of an evaluation of NSTE, after it is in operation.

C. Individual and Group Farms in the Private Sector

Five studies are subsumed under this general heading. Each is addressed to a specific programmatic concern about how campesino enterprises are performing in economic and/or social terms, and how effectively they are linked to government service agencies.

The first study (C.1) is an evaluation of PROCAMPO, the agency charged with providing training and technical assistance to small producers. PROCAMPO is different from its predecessor (INVIERNO) in several aspects. INVIERNO's activities were confined to the northcentral region of the country while those of PROCAMPO are nationwide. INVIERNO also administered a small farmer credit program which has since been formally absorbed by the National Development Bank (BND).

PROCAMPO retains a significant role, however, in both the design and implementation of credit programs for small producers. A major function is helping establish credit and service cooperatives and production cooperatives, and assessing the credit worthiness of various potential borrowers. PROCAMPO also has major responsibility for providing technical assistance and training to small producers.

This study will assess PROCAMPO's effectiveness in performing these activities.

The second study under this heading (C.3) will consist of a micro level analysis of campesinos production enterprises. At issue is the economic rationality and overall viability of the campesino economy. How do enterprises of various types (renters, small holders, production cooperatives,

pre-cooperativas) compare in terms of production, productivity, labor utilization, land use, technology, capitalization, etc. The study will yield recommendations for adapting programs of credit, technical assistance, cooperative organization and training and other services. The attempt will also be made to derive a manual of technical coefficients concerning the campesino economy. This will include such categories as average seeding and fertilization rates, yields, marketed surplus, potential and actual land use, etc.

These coefficients will be published in a brief manual for use in planning and implementing service programs.

The third sub-project in the small private sector (C.4 a) deals with migration and settlement in the agricultural frontier. It is now believed that large numbers of previously landless workers have opened up new lands in relatively inaccessible areas. The first objective of this study is to provide an empirical basis for estimating the magnitude of the migration phenomena, and to analyze its impact on both "sending" and "receiving" areas. Major programmatic concerns include: (1) implications for labor availability in other sectors; (2) economic performance of the new units (3) environ-

levels in rural households. Programmatic concerns include training and service programs for female workers and producers, and for young children, and food distribution in rural areas.

D. Management and Labor Issues in the Reformed and Private Sectors.

The first study here (D.1/2) will analyze relationships between various management schemes and such dependent variables as productivity, differentiation among workers (permanent and temporary; state and private sector), wage structures and incentive systems, etc.

The central concern is with relationships between management and labor, and the objective is to develop recommendations for advancing the GRNs policy of increasing worker participation in management decisions.

Sub project D.3 addresses the issue of labor flows between regions, crops and sectors. This will be a year long effort, employing both survey and participant observation techniques. The idea is to chart the occupational history of a sample of workers; to follow their movement from job to job, region to region, farm to farm. The major concern here is labor availability at seasons of peak demand in both public and private sectors. The study will provide a basis for facilitating labor mobility on the one hand, and, on the other, for making production and investment plans in accordance with labor availability. One immediate programmatic concern is mechanization of the cotton harvest. How can this process be balanced with labor availability so as to minimize crop losses without creating unemployment?

Sub-project D.4 explores what investment patterns are in the public and private sectors, whether incentives are sufficient to guide and promote investments in priority production areas, and what constraints exist which impede investment, especially labor/management relations.

The fourth and final study (D.5) deals with legal aspects of labor/management issues in both reformed and private sectors. This will consist of a one month consultancy by an international specialist in agrarian reform who will work with professionals in INRA's legal department. The objective is to review existing laws and decrees under which the new production units have been created, to clarify the role and status of various groups and entities associated with those units, and formulate recommendations for normalizing the legal structure of the agrarian sector.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project
From FY 80 to FY 84
Total U.S. Funding \$ 1.3 million
Date Prepared: August, 1980

Project Title & Number: Land Reform 524-0180

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>Sector Goal: To improve the standard of living of small-scale farmers and agricultural laborers through increasing the productive resource base of the target group and increasing the efficiency of the target group in the use of its productive resources.</p> <p>Project Goal: To enhance the effectiveness of GRN rural development policies and programs.</p>	<p>Measures of Goal Achievement:</p> <p>GRN adopts policies and programs which are responsive to needs of the target group and provide the incentives, capital and services necessary to generate sustained increases in income and employment.</p>	<p>Review of policies</p> <p>Future comparison against 1980 baseline data</p>	<p>Assumptions for achieving goal targets:</p> <p>Political considerations do not require decisions at variance with conclusions resulting from analysis.</p>
<p>Project Purpose:</p> <p>To strengthen the institutional infrastructure of CIERA and improve its capacity to design and carry out a program of applied research responsive to the problems arising from the implementation of the agrarian reform.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>1. CIERA is able to identify and rank order operational problems and design and carry out research addressing these problems.</p> <p>2. Professional staff is increased from 10 to approximately 22 trained researchers.</p> <p>3. Research program providing accurate and useful information to decision-makers.</p> <p>4. CIERA able to generate, store and analyze data; utilize cadastral data; and to research problems using secondary sources.</p>	<p>Progress reports and evaluations</p>	<p>Assumptions for achieving purpose:</p> <p>CIERA remains "plugged in" to decision making apparatus of Ministry of Agriculture.</p>
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Applied Research Studies 2. Information Dissemination 3. Computerized Data Bank 4. Plan for improving capacity to utilize cadastral and land-use data 5. Improved library facilities 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 1. 16 studies completed over three years 2. Four seminars/workshops 3. a. Computerized data series developed for years 1971, 1977, and 1980. b. System established for storing, reviewing and analyzing data. 4. Plan completed in first year 5. Equipment, furniture and materials in place. 	<p>Progress reports</p>	<p>Assumptions for achieving outputs:</p> <p>CIERA is given access to computer system.</p>
<p>Inputs:</p> <p>TA</p> <p>Training</p> <p>Commodities</p>	<p>Implementation Target (Type and Quantity)</p> <ol style="list-style-type: none"> 1. Admin. Assistants 72 months 2. LT - TA 36 months 3. ST - TA 29 months 4. Research Assistants 48 months 5. Commodities \$214,000 6. Training of 12 research assistants and 2 librarians. 7. Four seminars. 		<p>Assumptions for providing inputs:</p>

ANNEX 3

5C(2) - PROJECT CHECKLIST

Listed Below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual fund sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? YES
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PRODUCT? YES

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 654. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?

Advice of changes and Activity Data Sheet for this project will be forwarded to Congress prior to obligation of funds.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

YES

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

No further legislative action is required.

4. FAA Sec. 611(h); FY 79 App. Act Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?

N/A

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?

N/A

6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.

NO

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

Project will help define the role of private sector cooperatives and individual farmers in the agricultural sector, and rationalize agricultural policies to provide proper incentives and promote efficiency.

8. FAA Sec. 601(h). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

N/A

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

N/A

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

NO

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

YES

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar, or competing commodity?

N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(h); 111; 113; 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained

Project will carry out socio-economic research to learn more about the rural poor and help modify Government policies and programs to meet the needs of the rural poor.

to be, under the appropriate U.S. institutions;
 (f) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise to encourage democratic private and local governmental institutions; (g) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106, 107.
 Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

The project should help the Government to adopt policies and programs which provide the incentives, capital and services necessary to generate sustained increases in income and employment.

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

N/A

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

N/A

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

N/A

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

v.1 b.(1).

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. [107] Is appropriate effort placed on use of appropriate technology?

YES

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

YES

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

NO

f. FAA Sec. 231(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental and political processes essential to self-government.

Project will help determine the needs, desires and capacities of rural Nicaraguans. It will also train Nicaraguans to carry out similar research in the future.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

YES

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

3. Project Criteria Solely for Economic Support Fund

a. IAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

b. IAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

5C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? YES
2. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? YES
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the United States on commodities financed? YES
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? N/A
5. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? YES
6. FAA Sec. 603. (a) Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. YES
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the YES

A.7.

for titles of other federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport, Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available?

YES

9. FY 79 App. Act Sec. 105. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States?

YES

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

N/A

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the United States not exceed \$100 million?

N/A

C. Other Restrictions

1. FAA Sec. 122 (c). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

N/A

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-bloc countries, contrary to the best interests of the United States?

YES

4. FAA Sec. 636(f). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States, or guaranty of such transaction?

YES

- 5. Will arrangements preclude use of financing:
 - a. FAA Sec. 104(f). To pay for performance of abortions or to motivate or coerce persons to practice abortions, to pay for performance of involuntary sterilization, or to coerce or provide financial incentive to any person to undergo sterilization? YES
 - b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? YES
 - c. FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? YES
 - d. FAA Sec. 662. For CIA activities? YES
 - e. FY 79 App. Act. Sec. 104. To pay pensions, etc., for military personnel? YES
 - f. FY 79 App. Act Sec. 106. To pay U.N. assessments? YES
 - g. FY 79 App. Act Sec. 107. To carry out provisions of FAA sections 209(d) and 251(h)? (Transfer of FAA funds to multilateral organizations for lending.) YES
 - h. FY 79 App. Act Sec. 112. To finance the export of nuclear equipment, fuel, or technology or to train foreign nations in nuclear fields? YES
 - i. FY 79 App. Act Sec. 601. To be used for publicity on propaganda purposes within United States not authorized by the Congress? YES

SOCIAL SOUNDNESS ANALYSIS

A project which has at its heart the purpose of research (with subsidiary components of institution building and technology transfer) presents special problems for social soundness analysis. The questions that are raised slide somewhat out of the foci such analyses customarily have and must be refocused, that is, articulated in different ways.

For this project, the core questions become the following:

I. What groups will be affected in the chain from research designers to the ultimate hypothesized client or target population(s) and what are the characteristics of those groups and their socio-cultural and socio-economic setting which are most germane to the project and its goals? (The Concerned Populations and Their Characteristics).

II. In what ways have these characteristics been taken into account in project design and to what degree have the relevant groups participated in that design? (Involvement in Project Design)

III. How will these groups participate in the carrying out of the research and in the benefits of research findings, and what impact and spread effect might reasonably be anticipated? (Participation in the Project and Its Benefits).

IV. What are possible problem areas of untested assumptions which could constrain project success? (Problems and Constraints).

I. The Concerned Populations and Their Characteristics. A brief recapitulation of the principal, most urgent research areas and related sub-issues (dealt with in detail in the Project Description and related Annexes) provided the quickest picture of the variety of populations affected by the Project. These are:

A. Rural Credit and Marketing

1. Evaluation of commercialization of basic grains.
2. Analysis of formal and informal distribution circuits for inputs and marketing of products.
3. Analysis of current credit programs.
4. Issues of outreach to frontier areas.

B. Seasonal Labor Market

1. Size and characteristics, mobility (seasonal and sectoral), participation, labor/private sector/public sector relations, issues of labor scarcity.

C. Individual and Group Farms in the Private Sector

1. Impact of structural change and services delivery.
2. Levels of technology, world views and economic rationales of small producers.
3. Frontier settlements, migration, access to services.
4. Land tenure on the frontier.
5. Distribution of production for internal consumption, on-farm consumption.
6. Role of women in the rural economy and integration into systems of production and role changes.
7. Rural income and nutritional levels.
8. Impact of new policies on agrarian social structure, land tenure, access to services, numbers in different strata and production groups.

D. Labor-Management Issues in the Reformed and Private Sector

1. Traditional patron-client systems, incentive systems, worker participation, conflicts and problem resolution, labor flows.
2. Legal status of reform units and institutions.

While some of these areas and sub-issues obviously overlap and may eventually be collapsed for research purposes, the overall dimensions of the research make clear that it will cover the totality of rural socio-economic strata. The research will also embrace the several clusters which coincide with or cut across those strata, clusters formed by the forces of man-land relationship (land tenure, holding size, and landlessness); the organization of production (individual, cooperative, or state-managed); and the fusion of those forces which generate the major categories of wage laborer and direct producer. To these populations must be added the institutional categories, which include: the research entity itself (CIERA); the command levels in central, regional, and local MIDA offices; the outreach workers belonging to those offices; and the numerous public and private sector organizations and individuals servicing rural Nicaragua.

To summarize the main populations which are the concern of this Project are: 1) the research community; 2) agricultural sector institutions; and 3) the rural population. The first two populations are described, analyzed, and to some extent quantified elsewhere

in this document (see sections on Applied Research and Institutional Analysis). The rural population can only be represented with any degree of detail by pre-Revolutionary data; the changes in that population can only be suggested by the broad strokes which outline alterations in patterns of access to land in service and organizational structure.

The Rural Population

According to the 1971 Census, close to one million people, or 52 percent of Nicaragua's total population, lived in rural areas. Recent projections by the University of Chicago^{1/} estimate that by the year 2,000, of a total project population of 4,718,000, 1,722,000 or 36.5% will be rural. These projections do not account for mortality due directly to civil strife or its corollary impact on morbidity, for the post war increase in birth rates currently hypothesized by the Ministry of Education, or for war-induced changes in migration flows or shifts in residence due to increased availability of land and alterations in the labor-force profile. One of the underlying assumptions of the Chicago projections was the well-documented diminution over the last 15 years in the absorptive capacity of the agricultural sector for the greater growth of the rural labor force. New GRN policies are directed at redressing this imbalance; their success and any resulting change in rural labor force structure constitute one of this Project's main areas of investigation, as do the patterns of seasonal mobility, historically of substantial dimensions.

Of this population, in 1971 close to 70 percent were illiterate, compared to a 25 percent illiteracy rate in urban areas (settlements of 2,500 and up). The rural illiteracy rate was just ^{2/}calculated at 74.9%, certainly indicating that, whatever the suspected flaws in the 1971 Census, not much has changed. The rate should, however, drop notably in the wake of the present GRN National Literacy Campaign.

The 1976 Nutrition Sector Assessment (INCAP/UNASEC/AID) data pointed to serious nutritional problems and constraints in the rural area. Nationwide, 57% of children under five suffered from some grade of protein-calorie malnutrition (PCM). Thirty-six percent of the rural population displayed low to deficient blood iron levels, and the following percentages of rural households showed nutrient consumption levels below 75% of Recommended Daily Allowances (RDA): retinol (Vitamin A), 88%; riboflavin, 57%; niacin, 52%; and Vitamin C, 48%. There have been traditionally

1/ Community and Family Study Center. Illustrative Functional Projections 1975-2000, Nicaragua. University of Chicago. 1979.

2/ Instituto Nacional de Estadísticas y Censos (INEC). Censo de La Cruzada Nacional de Alfabetización. Managua. 1980.

wide regional variations in food distribution, production, income and, consequently, consumption, which in turn implies that parts of rural Nicaragua are worse off than the global figures indicate. These inequities will be, again, one of the research foci subsumed under this Project.

Of the approximately 86,000 farms on which virtually all of this population lived in 1971, or to which it was tied by bonds of wage labor, 37,000 (44%) were under ten manzanas in size (1 mz. = 1.74 acres), a size generally accepted as unviable for traditional subsistence farming.

Ninty percent of all the farms in Nicaragua were concentrated on 29% of its land and 10% of all farms occupied the balance, or 71%. Thus Nicaragua's most important capital resource has been until now concentrated in the hands of a very few producers. The large majority of the rural population has as a result been relegated to small parcels of marginally productive land whose dispersion has compounded problems of credit, extension, and marketing, and perpetuated the technological limitations of small farms. The skew created by this concentration and parcelization widen during the 1963-1971 inter-censal period with a 208% increase in plots under one mz., and expansion in farms over 2,500 mzs. accounted for 43% of all total increase. The most reasonable explanations for the shift are: close to rampant parcelization, some absorption of smaller farms by larger ones and development of large farms in new uncultivated areas.

Definitions of "small farms" reflect the quality of the land and other factors as well as farm size. For example, small farms in INVIERNO's Region V ranged from one to 50 mzs. (average farm size, 4.5 mzs.), in Region II from one to 20 mzs. (average farm size, 4.7 mzs.). Land concentration, use of inputs, cropping patterns and intensity, marketable surplus, farm income, labor absorptive capacity, and proportions of the population in the several strata of the Agricultural Economically Active Population (A/EAP) varied accordingly.

The distribution of the rural marginal population defined in terms of access to adequate amounts of land follows (1971 Census data and UNASEC calculations):

TABLE 1 NICARAGUA: DISTRIBUTION OF RURAL MARGINAL POPULATION

<u>Landholding Category</u>	No. of ^{1/} <u>Farms/Families</u>	Total Agri- ^{2/} <u>cultural Population</u>	Economically ^{3/} <u>Active Population</u>
Without land	37,181	266,804	69,900
0-1 mz.	4,979	30,372	9,360
1-5 mz.	22,147	135,097	41,637
5-10 mz.	<u>10,395</u>	<u>63,410</u>	<u>19,543</u>
Total	74,702	435,682	140,440

1/ Numbers of farms are based on production units managed by one family head per unit. In the case of the landless, the figure refers to family units.

2/ Figures derived by using a factor of 6.1, considered the average rural family size. The figure may be low.

3/ These figures are based on a factor of 1.88, considered the average number of working-age members in an average farm unit.

The 10 mzs. limit was chosen as the upper edge of marginality according to two linked criteria: of the farmers in the 0 to 10 mzs. group, almost 60% were non-owners and by far the most numerous renters of land. Needless to say, their income levels and tenuous hold on land have not inspired capital improvements. In 1971, 22% (19,301) of all farms were rented and 27% were untitled or in some undefined status (7%). Thus only about half of all farms were titled in 1971. While this was an improvement over the 1963 percentage (38% of farms titled), the land-area data indicate that the emphasis on titling over the decade was on large, new tracts, leaving the large number of small farmers still without title. The National Agrarian Institute (IAN), created in 1963 to implement the Agrarian Reform Law of that year, chose to act within only the most narrow interpretation of a rather ample law and between 1966 and 1977 settled only 5,206 families on 177,466 mzs., only 1,765 of whom had received title as of that date to a total of 45,089 mzs. A 1977 IAN report noted that the percentage of the rural population affected by agrarian reform had been only 1.94 percent.

Grouping the landless EAP (69,900) with the essentially landless stratum of landholders with under one mz (EAP=9,350), there was as of 1971 a minimum rural work force (EAP) of 79,260 whose only chance for survival was wage labor and who supported 177,916 dependents. If to these are added the one to 5 mzs. stratum (EAP=19,543), at least some of whom have had to enter the wage sector seasonally to satisfy cash needs, the pressure on the rural wage sector becomes even more intense.

A little under half of the national EAP was employed in the agricultural sector. According to the 1971 Census, of the 189,000 in the national EAP who were unemployed, 63% (119,000) were in rural areas. In all regions but the Northern Pacific, rural unemployment was higher than the national average, running as high as 50% in the Central Interior Region. One of the results was increased rural-to-urban migration, not only in the wage laborer category, but in the category of unpaid family labor as well. About half the rural work force was either self-employed on farms or in nonremunerated family labor. Virtually all the rest of the work force were empleados (landless laborers employed by others for agricultural work). An estimated 50% of these were unemployed. When employed, they drew salaries of under C\$7/day, which amounted to a theoretical annual per capita income of C\$845 and 7.5% of the nation's agricultural income. The next largest group, self-employed and family-farm labor, earned an average of C\$3,731 per year and accounted for 29% of gross agricultural income. The smallest group, employers (patronos) accounted for 3.5% of the EAP, got 63% of the gross agricultural income, and averaged over C\$100,000 annually. The average per capita income from agriculture in 1971 was C\$1,849 (see Table 2).

TABLE No. 2

NICARAGUA: RURAL WORK FORCE 1963 AND 1971 BY OCCUPATIONAL TYPE: 1/

PERCENTAGE OF TOTAL ACTIVE POPULATION AND DISTRIBUTION OF VALUE OF AGRICULTURAL PRODUCTION 2/

	<u>1963</u>	<u>1971</u>	<u>Difference 1963-71</u>		<u>Percent of Total Active Population</u>	<u>Percent of Total Production Value</u>	<u>Per Capita Production Value (1971, in cordobas)</u>
			<u>Absolute</u>	<u>Percent</u>			
Employers (Patronos)	8,380	7,831	519	6.6	3.5	63.1	103,158
<u>Self-Employed</u>							
Self-employed	81,067	76,778	4,289	5.3	45.5	29.4	3,731
Unpaid Family	57,561	40,868	16,693	29.0			
<u>Workers</u> (Empleados)	136,091	108,574	27,517	20.2	51.0	7.5	845
Other	7	3,276	-o-	-o-			
<u>Total</u>	<u>283,106</u>	<u>237,327</u>	<u>45,779</u>	<u>16.2</u>		<u>100.0</u>	

1/ Source: Censo Población Nacional de Nicaragua, 1971, presented in P.F. Wamken, An Analysis of Agricultural Production in Nicaragua, Columbia; University of Missouri, June 1974.

2/ Source: UNASEC, cited in Wamken.

The revolution has already brought some major changes to this rural picture. The land-area figures for IAN compare dramatically with what is now available to INRA: 1, 152,000 expropriated manzanas of land originally owned by Somoza and his supporters (50,000 mz. of which were not subject to expropriation and were compensated), of which approximately 800,000 are suitable for cultivation. There are another 948,000 manzanas of privately-owned land in holdings of 1,000 mzs. and up, which will largely come under new modes of management, a total of 2,100,000 manzanas. Large farm units previously held by private owners have been transferred to state ownership (known as the "reform" or "state sector"). These lands are glossed as "areas of the people's property" (areas de propiedad del pueblo). These large farm units comprise about 20% of the arable land in the country and are destined for use as "State Production Units" (Unidades de Producción Estatal/UPE).

In the case of UPE production enterprises for sugar cane, tobacco, and rice, the state will continue to manage and operate these with hired labor, through an entity of MIDA called AGOINRA. Other UPEs are managed by administrators designated by INRA. A workers' organization, the Asociación de Trabajadores del Campo/ATC (Rural Workers' Organization) will become increasingly involved in the management of the UPEs. Profits, after expenses and reserves for reinvestment, are to be distributed to the workers.

GRN policy strongly encourages the organization of all farmers into groups. The Cooperativa Agropecuaria Sandinista (CAS) is the preferred organizational structure. When farmers are organized into a CAS, they farm the land communally. Other forms of group organization are also recognized under GRN policy. Credit and Service Cooperatives (CES) are farmer-owned cooperatives that provide credit, inputs, marketing, and other services to members who farm individually. Informal farmer groups, sometimes described as pre-cooperativas, may also be organized.

The implications of the quantum increase in sheer land area and variety of organizational forms for the nascent land reform, extension, research, and credit institutions are obvious. In a very short period of time, PROCAMPO has found itself giving services directly to over 1,000 rural communities and the BND has opened 11 new agencies in rural areas, for a total of 130 of its 204 offices. As of 1977, less than 25% of Nicaraguan small farmers had access to short-term credit, still fewer to medium-and long-term credit. The evident need to expand that access substantially has led to a major program emphasis for INRA; the effect of the rapidity of that expansion will be assessed under this Project.

The female component of the rural population is of special concern to INRA. This is partly due to the major role played by women in the revolution and partly to the special characteristics of the rural female population. First of all, it is large and growing,

estimated to reach 852,000 by the year 2000, 49.5% of the projected rural total compared to 46.4% calculated for 1975 (University of Chicago, 1979). Secondly, a high rural fertility rate (average number of births per mother, 8.2) has produced a dependency rate of 117, as of 1972, the second highest in the world after Bangladesh. Thirdly, a number of cultural, economic, and even physiological phenomena--for example, attitudes toward sexual responsibility, the necessity for temporary or permanent rural out-migration, and substantially higher female life-expectancy rates--have conspired to produce great numbers of fragmented families and women-headed households, with consensus on a figure of around 20% in rural areas. Thus, although national labor force participation figures have not reflected the reality, rural women are forced to be economically active in some way in large numbers: at least 34% of campesinas were estimated in 1976 to be engaged in at least one activity for remuneration. The same study found that 10% of all salaried agricultural day workers, 54% of non-agricultural day workers, 4% of farmers, 80% of non-agricultural producers, 16% merchants, and 22% of those with more than one job were women. Finally, the percentage of female participation in the agriculture labor force has been projected to better than triple by the year 2000, even without the explicit integration of women into the rural productive sphere contemplated in GRN and INRA policy.

11. Involvement in Project Design. While there has been no direct involvement of the mass of the rural population in project design, the issues of change which affect it have been identified through a variety of outreach mechanisms. There is evidence of a substantial amount of feedback from local-level institutions such as PROCAMPO offices, CAS and CES memberships, and ATC workers, as well as from neighborhood and community committees (Comités de Defensa Sandinista/CDS) and from literacy trainers (brigadistas) working in the National Campaign. The issues thus identified have been examined for their prevalence and relative importance and have formed the rationale for the research problems and sequencing of the CIERA work plan, which seems singularly free of top-down hypothesizing.

Beyond this, well-designed, well-supervised research is already being carried out by the brigadistas, each of whom will carry out in-depth interviews after a month's field residence, with farmers who cultivated land during the 1979 crop year. The basic sample is 80,000 and data gathered include land tenure and land use, crop yields and utilization, income, livestock holdings, technology and means of production, family size and labor force, off-farm employment, and hopes from the revolution. This field research should be completed by October 1980 and will be processed as quickly as possible as part of this Project, in order to feed findings into policy determinations in the shortest possible time. While these data are being processed, the individual studies described elsewhere in this document will be undertaken, using a range of research

modalities, to answer priority questions which have emerged in the rural context. Similarly, the 1971 Census data will be recaptured and cleaned and other sources examined and utilized as appropriate, to provide some sort of baseline against which subsequent research, e.g., the forthcoming Agricultural Census and the National Census, can be projected.

III. Participation in the Project and Its Benefits. The core of this Project is operational research. It is CIERA's explicit intent to avoid common pattern of circulating a mass of reports through desk drawers and file cabinets. A set of procedures is already being established and will be refined during the life of the Project, to move the research findings through a series of institutional linkages decision-making levels. As noted in the Institutional Analysis, this is to be accomplished through systematized meetings, discussion groups, workshops, and seminars, some of the last with outside groups and institutions with special expertise in selected subject matters. The flow of data and decisions will pass through the several outreach and local-level administrative and participatory entities. The organization of CIERA will subsume the formalization of these procedures.

Any calculus of spread effect and impact would be unreasonable, if not impossible, at this point in time. No single set of research findings can be expected to produce massive change. The cumulative effect of constant research and tinkering with policies and programs to adjust and respond to both rural reality and national priorities can, however, have wide-ranging effect that reflects needs and desires, instead of imposing even the most elegant models.

IV. Problems and Constraints. Any research endeavor is, by definition, faced with four potential constraints: 1) the wrong questions may be asked 2) in the wrong way; 3) data may be unreliable for a multitude of reasons, and 4) research findings may not be used because they are mismanaged or frankly unpalatable.

The matter of relevance of the questions has already been addressed. The risk of CIERA asking the wrong questions is diminished by the fact of their origin: the client population itself. The issue of methodology does not yet appear to be a problem: the one available sample of research technique, the brigadista survey, appears solid and thoughtful, yet there seems to be no mindless adherence to the survey as the sole research tool. The research contemplated will employ case studies, economic analysis, indepth interviews and participant observation, macro-level statistics, ethnohistorical sources, singly or in combination. With this orientation, strengthened by the additional training, and technical assistance to be provided under the Project, there is good reason to expect high-quality research design, data, and data analysis.

The final constraint, which confronts policy-makers everywhere, is the possibility that findings will go unheeded. CIERAs relationship with policymakers and implementers appears to be strong enough to minimize this risk. However, there is no final answer but time and circumstances.

Annex 5

Initial Environment Examination

Project Location: Nicaragua
Project Title: Land Reform
Funding: FY80 \$1.3 million grant
Life of Project: FY80 - FY84
IEE Prepared by: Kenneth G. Schofield,
Program Officer

Date: August 20, 1980

Environmental Action Recommended: This IEE has determined that no reasonable foreseeable significant adverse environmental impacts will result from the project's activities. Therefore, a negative determination is recommended.

Concurrence:



Lawrence Harrison
Director, USAID/N

8/29/80
Date

A. Description of the Project

The project will help strengthen the capacity of the Center for Research on Agrarian Reform (CIERA) to design and carry out a program of applied research addressing short and long-range problems associated with the implementation of the Government's agrarian reform and agricultural development programs. The principal outputs expected from the project are applied research, information dissemination, a computerized data bank, a plan for improving CIERA's capacity to utilize cadastral and land-use data, and improved library facilities.

B. Consideration of Environmental Concerns

This project will not directly affect the natural or physical environment of Nicaragua. The project seeks to provide the Government a better understanding of the socio-economic changes which are taking place in rural areas in order to define strategies, develop action programs and adapt their policies and programs to meet the needs of Nicaragua's rural populace. In other words, the project will help the Government develop or adopt policies and programs which are appropriate for the socio-economic environment of the target group.

C. Environmental Action Recommendation

A negative determination is recommended for this project.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-areas 1/

Impact
Identification
and
Evaluation 2/

A. LAND USE

1. Changing the character of the land through:

a. Increasing the population _____ N

b. Extracting natural resources _____ N

c. Land clearing _____ N

d. Changing soil character _____ N

2. Altering natural defenses _____ N

3. Foreclosing important uses _____ N

4. Jeopardizing man or his works _____ N

5. Other factors

_____ N

B. WATER QUALITY

1. Physical state of water _____ N

2. Chemical and biological states _____ N

3. Ecological balance _____ N

4. Other factors

_____ N

1/ See Explanatory notes for this form.

2/ Definition of symbols: N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- 1. Air additives ----- N
- 2. Air pollution ----- N
- 3. Noise pollution ----- N
- 4. Other factors
- _____ N
- _____

D. NATURAL RESOURCES

- 1. Diversion, altered use of water ----- N
- 2. Irreversible, inefficient commitments ----- N
- 3. Other factors
- _____ N
- _____

E. CULTURAL

- 1. Altering physical symbols ----- N
- 2. Dilution of cultural traditions ----- N
- 3. Other factors
- _____ N
- _____

F. SOCIOECONOMIC

- 1. Changes in economic/employment patterns ----- N
- 2. Changes in population ----- N
- 3. Changes in cultural patterns ----- N
- 4. Other factors
- _____ N
- _____

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- 1. Changing a natural environment _____ N
- 2. Eliminating an ecosystem element _____ N
- 3. Other factors

_____ N

H. GENERAL

- 1. International impacts _____ N
- 2. Controversial impacts _____ N
- 3. Larger program impacts _____ N
- 4. Other factors

_____ N

I. OTHER POSSIBLE IMPACTS (not listed above)

- _____
_____ N
- _____
- _____

ANNEX 6

Applied Research

Analysis of Rural Credit and Marketing Programs

- A.1 Analysis of Bean Marketing
- A.2 Corn Marketing
- A.3(a) Input and Distribution Analysis
- A.3(b) Input and Distribution Analysis

Analysis of Seasonal Labor Markets

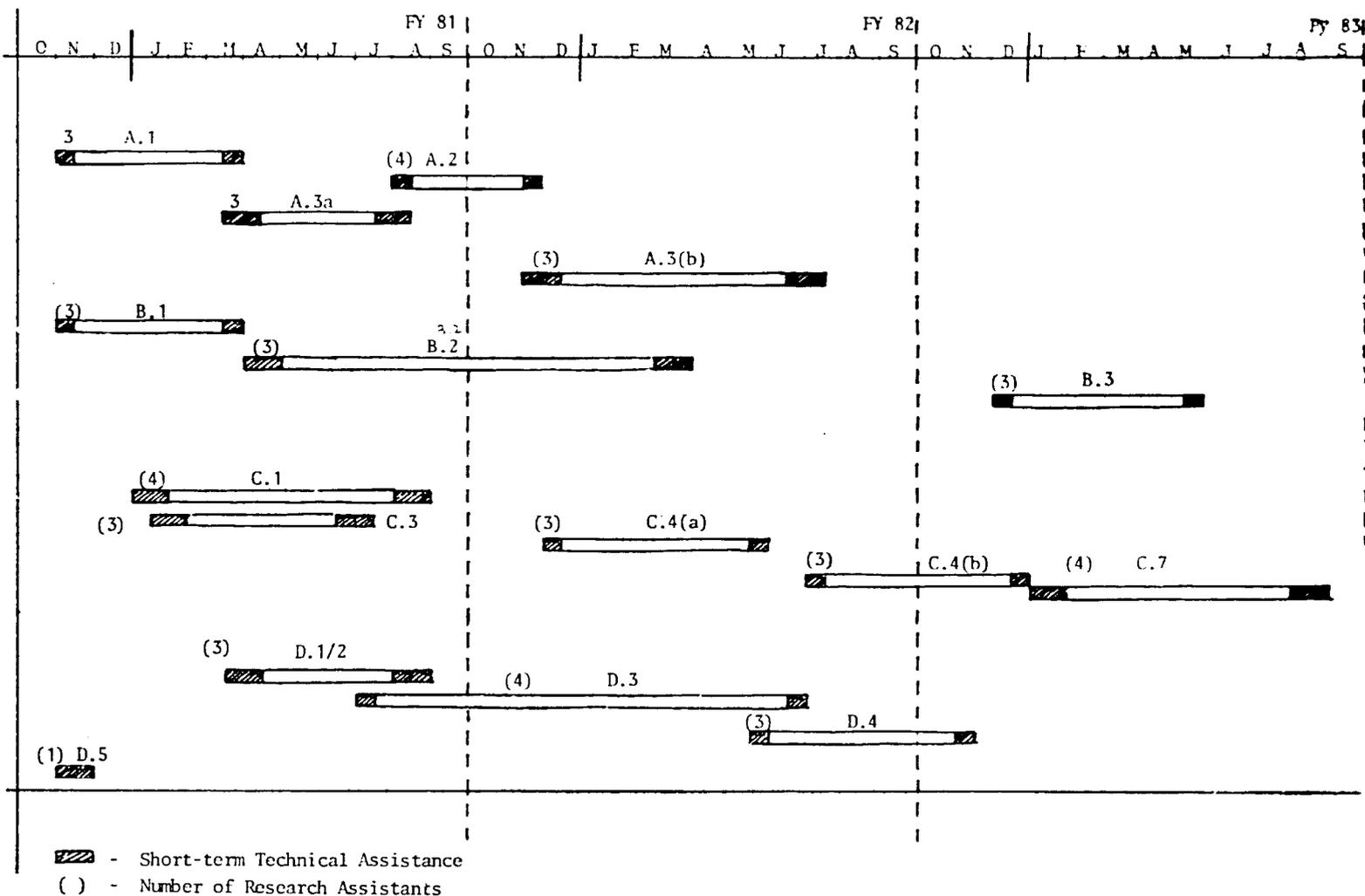
- B.1 Analysis of Labor Usage
- B.2 Design National Labor System
- B.3 Evaluate National Labor System

Analysis of Individual and Group Farms Private Sector

- C.1 Evaluation of PROCAMPO
- C.2 Campesino Production Systems
- C.4(a) Migration to the Frontier
- C.4(b) Land Tenure in the Frontier
- C.7 Role of Women/Nutrition

Analysis of Labor/Management Relations

- D.1/2 Productivities
- D.3 Occupational Patterns
- D.4 Investment Patterns State and Private Farms
- D.5 Legal Aspects State and Private Farms





GOBIERNO DE RECONSTRUCCION NACIONAL

MINISTERIO DE DESARROLLO AGROPECUARIO

Managua, Nicaragua, C. A.

Agosto 30 de 1980

Received: Sept. 2, 1980

LOG No. 652038

ACTION: RDO DIR

INFO: CDO ADP

POFFICE

CHRON

RF

Sr. Lawrence Harrison
Director AID en Nicaragua
su Despacho

Estimado Señor Harrison:

Por este medio, el MINISTERIO DE DESARROLLO AGROPECUARIO (MIDA), solicita la asistencia técnica de la Agencia Internacional para el Desarrollo (AID), con el objeto de desarrollar los Proyectos de Investigación que el "Centro de Investigación y Estudios de la Reforma Agraria" (CIERA) está realizando.

Adjunto el presupuesto de las investigaciones así como la contrapartida de nuestro Gobierno de Reconstrucción Nacional, para hacer efectivo el Convenio AID-LTC-CIERA.

Seguros de que esta asistencia contribuirá al desarrollo agropecuario de nuestra nación, me suscribo de usted,

Atentamente

MINISTERIO DE DESARROLLO AGROPECUARIO

JAIME WHEELOCK ROMAN
Ministro



JWR/mmg

cc: Archivo

Inc: Presupuesto adjunto.

Presupuesto del Proyecto LTC

(\$000)

	<u>AID</u>	<u>GRN</u>	<u>TOTAL</u>
1. <u>Administración y Apoyo</u>			
Asistentes, Secretarias, Choferes, Apoyo de oficina	120 ^{a/}	105 ^{b/}	225
2. <u>Asistencia Técnica</u>			
2.1. Coordinador (36 meses)	131	-	131
2.2. Investigadores Norteamericanos (48 meses)	82	-	82
2.3. Investigadores Nicas (309 meses)		201 ^{c/}	201
2.4. Corto Plazo y Contrapartes	236	40 ^{d/}	276
3. Equipos y Gastos Relacionados	214	124 ^{e/}	338
4. Capacitación	367 ^{f/}		367
5. Seminarios	85		85
Sub-total	1,235	470	1,705
Inflación e Imprevistos	155	60	215
Total	1,390	530	1,920

a/ 2 asistentes (1 norteamericano, 1 nica)
 1 secretaria bilingue

b/ 3 secretarias, 6 choferes, materiales de oficina

c/ reducido de 396 a 309 meses

d/ contrapartes - banco de datos

e/ incluye:

Gasolina y mantenimiento de vehculos	\$70
Uso de computadora	10
Expansión biblioteca	42
Compra de libros, etc.	2

f/ 12 becarios y entrenamiento en servicio; 2 becarios biblioteca.

AID COMMODITY LIST

		<u>Unit Costs</u>	<u>Total Costs</u>
1. <u>Applied Research</u>			<u>114,020.00</u>
1.1 <u>Vehicles</u>			
4-wheel drive vehicles	8	9,000.00	72,000.00
1.2 <u>Equipment</u>			
IBM typewriters	3	2,000.00	6,000.00
Tape recorders	5	200.00	1,000.00
Calculators	5	450.00	2,250.00
Mimeograph	1	3,000.00	3,000.00
Stencil	1	1,000.00	1,000.00
Dictaphones-secretaries	2	1,000.00	2,000.00
Telephone Switchboard	1	4,000.00	4,000.00
Typewriters	3	900.00	2,700.00
Air Conditioners	8	1,000.00	8,000.00
1.3 <u>Office Furniture</u>			
Tables for Typewriters	6	45.00	270.00
Executive Desks	10	400.00	4,000.00
Chairs for Executive Desks	10	180.00	1,800.00
Desks for Secretaries	5	320.00	1,600.00
Secretarial Chairs	5	120.00	600.00
Vertical Filing Cabinets	10	300.00	3,000.00
In and Out-going boxes	15	10.00	150.00
Chairs for visitors	10	65.00	650.00
2. <u>Cadaster</u>			<u>29,200.00</u>
2.1 <u>Equipment and Materials</u>			
Heliographic Paper	200R		500.00
Film 20 x 24	20T		2,000.00
Developer	100G		2,500.00
Fixer	70G		1,400.00
Blue print paper 10x10	20T		4,000.00
Stereoscopes	5		300.00
Equipment and Draw. Tables	2		6,000.00
Photo ...	4		10,000.00
Interpretation Equip.			2,500.00

		<u>Unit Costs</u>	<u>Total Costs</u>
3.	<u>Data Bank</u>		<u>32,340.00</u>
	3.1 <u>Equipment</u>		
	Card Boxes 10,000 each	80	6,000.00
	Computer Paper		3,000.00
	Flexi-Disc.	500	7,000.00
	Disk Pack 5445	4	1,000.00
	Tapes 7,200		330.00
	Computer Terminal	1	8,000.00
	Computer Equipment		7,010.00
4.	<u>Library</u>		<u>38,405.00</u>
	4.1 <u>Equipment</u>		
	Photocopy machine	1	6,500.00
	Air Conditioners	2	1,000.00
	Microfilm Equip. & Readers	1	13,000.00
	Mini-graph Equip.	1	600.00
	Labeler	1	195.00
	4.2 <u>Books and Publications</u>		
	English-Spanish Ag. Dict.	1	200.00
	Fund for Pub.of Info. Bull.		500.00/year
	Fund for Subs.mag.& Pub.		1,000.00/year
	4.3 <u>Furniture</u>		
	Bookshelves	10	1,000.00
	Map Cabinet	1	200.00
	Boxes for Magazines	5 doz.	150.00
	Book holders	30	6.00
	Desks and Chairs	2	440.00
	Total		<u>213,965.00</u>