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Report 1122-01-79-CR

**Preliminary Appraisal of  
Requirements of  
The Nicaraguan Public Agricultural Sector**

FINAL REPORT

By:

Albert L. Brown

September 1979

OPERATIONS ANALYSIS GROUP

**GENERAL RESEARCH**  **CORPORATION**

A SUBSIDIARY OF FLOW GENERAL INC.

7655 Old Springhouse Road, McLean, Virginia 22102

An Equal Opportunity Employer M.F.H.

Submitted To:

Agency for International Development  
Attention: Project Manager  
LAC/DR  
Washington, D.C. 20523  
Under Contract: AID/LAC-C-1345

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## 1. INTRODUCTION

The USG is preparing to make an \$8-10 million emergency grant to the Government of Nicaragua (GON) and to request a supplemental budget authorization for additional support to cover reconstruction assistance for the 1980 and 1981 fiscal years. This report is an initial appraisal of the near-term requirements of the agricultural sector. These requirements are based on GON requests, modified as necessary to reflect historical operating levels and known assistance from other donors.

For seven days, I served as the agricultural member of a team of experts consisting of AID personnel and consultants and guided by the US AID Mission. This group was charged with making a preliminary assessment of the needs of the GON over the period covered by AID fiscal years 1980 and 1981. The intent of this assessment was to develop a rehabilitation program assistance strategy which would bridge the period between the current emergency assistance and more normal development assistance.

During this assignment, I participated in discussions with the leadership of the four institutions which make up the current public agricultural sector:

- The Ministerio de Desarrollo Agropecuario (MIDA)
- The Instituto de Comercio Exterior e Interior (INCEI)
- The Banco Nacional de Desarrollo (BND)
- The Instituto Nicaragüense de la Reforma Agraria (INRA)

This report is the result of these conversations.

It is clear that none of these institutions at this time has a firm idea of its future programs and requirements. Each institution is in the process of taking charge of the resources which have been assigned to it, organizing for action in a provisional fashion, and meeting the most immediate needs of the emergency. In most cases, they are still in the process of inventorying their resources and requesting emergency assistance. They are just initiating a more realistic appraisal of their long-term responsibilities, the creation of a more permanent

organizational and program structure, and the resolution of conflicts among and within their responsibilities.

In large measure, therefore, this appraisal is focused on the institution's immediate concerns--the reestablishment of an effective operating state, emphasizing budget support, operating capital, replacement and repair of equipment, and planning. Although the new government needs nearly everything, most immediate needs can be provided through a commodity import loan\* which will allow replenishment of capital stock as it generates needed local currency. In addition, two near-term agricultural project opportunities warrant consideration:

- (1) An agricultural credit loan (about \$10 million) to the BND which would complement the credit being provided by the Inter-American Development Bank, but be directed specifically at small farmers. This is a straightforward effort which could be prepared and disbursed with minimum lead time.
  
- (2) A technical assistance grant or loan with three components:
  - Sector planning, project design, and feasibility studies (about \$1.0 million\*\* to MIDA/DIPSA)
  - Planning assistance to INRA for its state farms (about \$2.0 million)
  - Operations advisory assistance to INRA to provide management advisors for these farms (about \$2.0 to \$5.0 million)

This technical assistance effort involves sensitive areas in a revolutionary government. The need is apparent, but has been discussed only in general terms. Considerable additional work would be required to define the areas of need, the terms of reference, and the qualifications of advisors.

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\* Described in the reports of other team members.

\*\* Currency units are US dollars (US\$) or Nicaraguan Córdobas (CS).  
C\$10.00 = \$1.00

## 2. OVERVIEW OF THE AGRICULTURAL SECTOR

### 2.1 NATURE OF NICARAGUAN AGRICULTURE

Nicaragua is extraordinarily dependent upon agriculture. In the absence of other natural resources, the agricultural sector, and particularly coffee, cotton and cattle, accounts for 60% of her exports. Of the economically active population, 46% work in the agricultural sector, and a high percentage of industrial investment is found in agricultural product transformation and agricultural service industry.

Nicaragua's food production cycle begins in April or May with the onset of the rainy season. In all but the drier parts of the country, two crops--a primera and a postrera--are possible. The primera is usually corn or dryland rice, followed by corn, beans, or sorghum, depending on the expected length of the rainy season. Sizable quantities of rice are produced under irrigation.

The civil war found stocks of basic grains severely depleted. INCEI's total storage, including client-owned grains, was only 11,380 metric tons:

Corn	9250
Beans	340
Rice	850
Sorghum	<u>940</u>
Total	11,380

Further, the war had disrupted the April-May land preparation and planting season, reducing the primera and/or delaying it so that the postrera will be largely limited to short season sorghum. In addition, some farmers may have eaten part or all of their stocks of seed and will require the sorghum seed currently being imported.

A brief reconnaissance revealed enough food crops in the ground to discount any probability of famine, but future food supplies and price levels are uncertain. Much of the irrigated riceland was expropriated and only part has been planted.

The principal industrial crops of cotton and sesame are normally planted in July and August to ripen in the dry season. Of these, cotton (250,000 manzanas = 175,000 hectares) is far more important than sesame (10,000 manzanas = 7,000 hectares). The former is traditionally a large farm crop, the latter a small farm enterprise.

The war interrupted land preparation and importation of inputs, and its attendant uncertainty has prevented the return of many cotton producers whose land was not expropriated. As a result, plantings are expected to amount to only 75,000 manzanas--about 1/4 to 1/3 of normal. Besides the immediate impact on foreign exchange earnings, this will reduce agricultural labor requirements in the dry season. The scarcity of cottonseed will require importation of oilseed or cooking oil as well.

Coffee production may be off by up to 20% because of interruption in the coffee rust control spraying program.

## 2.2 STRUCTURE OF THE PUBLIC AGRICULTURAL SECTOR

The public agricultural sector consists of four essentially coequal units:

- Ministerio de Desarrollo Agropecuario (MIDA) formerly the Ministerio de Agricultura
- Instituto Nicaraguense de la Reforma Agraria (INRA), consisting of the former Instituto Agrario Nacional and the Instituto de Bienestar Campesino (INVIERNO)
- Instituto de Comercio Exterior e Interior (INCEI), now seeking a new name
- Banco Nacional de Desarrollo (BND), consolidating the formerly autonomous Banco Nacional de Nicaragua (BNN), Instituto de Fomento Nacional (INFONAC), and Fondo Especial de Desarrollo (FED).

The heads of two of these institutions (MIDA and INRA) have ministerial rank, INCEI expects to become a cabinet level institution, and the former BNN, BND's major component, had sufficient autonomy and resources in the past to act independently from other sector influences. Each of these agencies operates under a provisional structure (see below). The four agencies currently function independently of each other, on the basis of their defined areas of responsibility, and all report directly to the Junta. Alfonso Robello is the member of the Junta with principal responsibility for agriculture. As potential conflicts arise among these institutions, the issues are resolved at that level.

The four institutions have certain characteristics in common. Each is headed by an apparently able individual without prior experience in or deep knowledge of the institution(s) he directs. The leader's span of management control is expanded by an assistant, but he also has the assistance of provisional department heads who were members of the staff of the former organizational components and consequently understand their characteristics and resources.

All appear to be dedicated to the intent of the Revolution and see their initial responsibilities to be making their institutions function effectively to the benefit of Nicaraguans of the less favored classes. Immediately, they are more concerned with production than with equity issues but will seek equity in the process.

This production emphasis will be crucial over the next year or two. Nicaragua is virtually without foreign exchange reserves and is deeply in debt. Agriculture, and particularly coffee, cotton, and beef exports provide three-fifths of the nation's foreign exchange earnings. Much of these export products were produced efficiently on a number of large farms. Many of these farms which were owned by Somoza or his colleagues have been expropriated. Many others are owned by farmers who left the

country during the Civil War and whose return is uncertain. Most have suffered some decapitalization. The potential for maintaining productivity is further limited by the lack of foreign exchange to import seed, fertilizer, agricultural chemicals, equipment, and spare parts.

Except for BND, the financial, human, and material resources of these institutions were never strong. Now they are dispersed, damaged, or destroyed by the civil war. The income of the national government is currently well below past budget levels, many of the top technicians and managers are no longer available, and 50 to 80% of the vehicle fleet is unserviceable.

### 3. STRUCTURE AND NEEDS OF MAJOR INSTITUTIONS

#### 3.1 MINISTERIO DE DESARROLLO AGROPECUARIO (MIDA)

The Ministry of Agriculture is headed by a Minister, Manuel José Torres, with two Assistants, Pedro Blandón and Luis Pereira, and two Vice-Ministers, Noel Zúñiga and Sebastián González. Besides their offices of legal and fiscal control, these gentlemen manage some ten programs, staff offices and departments:

- Regulación y Control Agropecuario
- Promoción de Café y Programa Roya
- Recursos Naturales Renovables
- Implementación Agropecuaria (formerly Instituto Nacional de Transformación Agraria)
- Planificación Agropecuaria (formerly Dirección de Planificación del Sector Agropecuario)
- Promoción Agropecuaria
- Colaboración Internacional
- Educación Agrícola
- Administración General
- Personal y Promoción Humana

This organization is provisional, as are the heads of each unit. It is expected that the functions of some of these offices will be consolidated or otherwise reorganized.

The most urgent needs of MIDA over the next two years are:

- (1) Budget Support
- (2) Planning Assistance
- (3) Vehicle Replacement

### 3.1.1 Budget Support

The Ministry is a heavy user of direct hire personnel, a high percentage of whom are direct contact agents or support for such agents. In 1978, the Ministry of Agriculture's budget was CS35.2 million distributed as follows:

Personnel	CS16.3 million	46%
Operations	<u>18.9</u>	<u>54%</u>
TOTAL	35.2	100%

Government finances are currently seriously limited by income. Any reduction in budget to MIDA will almost certainly be absorbed in the "operations" category, and will be reflected in ineffective and inefficient performance.

### 3.1.2 Planning Assistance

The institutions of the public agricultural sector are receiving generous technical assistance from inter-american agencies in the reorganization and initial policy and program orientation of the new government. However, once the emergency period has passed, the government will be faced with intransigent policy and program issues requiring detailed studies, with the need to design programs for international financing, with the need to perform feasibility studies, and to monitor and evaluate operations. These needs will far exceed the capabilities of ad hoc assistance from the multinational technical assistance donors.

The former Dirección de Planificación del Sector Agropecuario is the office which is most experienced in management of planning resources used in this kind of planning. A sizable fund could be used to contract

the resources required by all four major sector institutions. It is estimated that US\$1 million will provide 125 professional person months of international expertise.

### 3.1.3 Vehicle Replacement

Approximately \*% of MIDA's fleet is considered to be unserviceable. This is intolerable in an agency whose major functions require mobility in rural areas (see 3.1.1, above). Replenishment of this fleet will require approximately \* vehicles costing \$ \*.

## 3.2 INSTITUTO DE COMERCIO EXTERIOR E INTERIOR (INCEI)

INCEI's primary responsibility is the regulation of commerce in agricultural products by intervention in the internal and export/import markets. In addition to its former functions, which were concentrated on basic grains, it has been given responsibility for all agricultural exports, including cotton, coffee, and meat, and for the importation of agricultural inputs.

INCEI is in the process of reorganization into a cabinet-level agency, and will acquire a new name. It is headed by Alejandro Martínez Cuenca, assisted by Alfredo Delgado. It has major staff offices of Estudios y Planificación and Política Comercial, and plans to implement its programs through a series of Empresas, one for each major export crop, e.g., cotton, basic grains, coffee, meat, or import category, e.g., inputs.

At this point, the way in which INCEI will manage the empresas dealing with the export crops is still uncertain. Their immediate problem is the continuing management of the Empresa de Productos Básicos, essentially basic grains for domestic consumption.

INCEI deals with basic grains on four levels: (1) Producer. INCEI fixes prices at its reception centers and buys grain during the harvest

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\* MIDA will provide these figures to USAID/RDO.

season to clear the market and stabilize producer prices. (2) Storage. In addition to storage of its own purchases, INCEI rents storage and provides grain handling services to the public. (3) Consumer. As market prices rise, INCEI sells grain to wholesalers or directly to consumers through its outlets, in order to stabilize consumer prices. (4) Export/Import. INCEI can go to the international market to buy or sell grains in order to maintain its stocks in condition to stabilize prices.

INCEI's most urgent needs over the next two years are:

1. Operating Capital
2. Budget Support
3. Repairs and Reequipment of Storage Facilities
4. Replacement of Heavy and Light Vehicles

#### 3.2.1 Operating Capital

At 11,000 metric tons, basic grain stocks stored in INCEI facilities are at an all time low, representing only 6% of capacity. One-fourth of these stocks are privately owned, so that INCEI has only 9000 metric tons of basic grains with which to control consumer prices. INCEI feels that it should acquire 61,000 tons of basic grains (28,000 tons of corn, 17,000 tons of sorghum, 10,000 tons of rice, and 6000 tons of beans) during the remainder of this harvest season (September 1979-February 1980) in order to be able to control consumer prices during the period of scarcity from March through July. Procurement of these amounts will require approximately C\$85 million (US\$8.5 million). This amount will occupy approximately one-third of their storage capacity, and they expect that private stocks will use another third.

#### 3.2.2 Budget Support

While it is possible for a price stabilization program to break even or operate at a profit, most basic grains programs regularly lose money, and INCEI has been no exception. Unwise price fixing, underestimation of the costs of services, and political considerations are continuing factors. Even more important in the current context, the new INCEI must start with the acquisition part of the cycle, so that all operating costs

must come from budget and not from gross transaction margins. INCEI cannot expect significant sales before March, and should try to maintain a buffer stock even through the next harvest. In essence, it will run a budgetary deficit of C\$7.0 million (US\$0.7 million) for the last half of CY79, and up to C\$10.0 million (US\$1.0 million) in CY80. Transaction margins should catch up and become fully available in CY81.

### 3.2.3 Repairs and Equipment of Storage Facilities

Reports from more than 80 of INCEI's Centros Agrícolas Cantonales (24,000 qq. storage capacity each) and from the two terminals (1,400,000 qq. total) indicate an immediate requirement of some C\$14 million (US\$1.4 million) in equipment replacement, repairs, and deferred maintenance. Some of these repairs will have to be made in the September-December period in order to permit operations, but most can probably be deferred into 1980. However, all should be completed by September 1980 in order for INCEI to achieve full operational integrity.

### 3.2.4 Vehicle Replacement

INCEI estimates that approximately \*% of its truck fleet and \*% of its passenger fleet is unserviceable. The dispersed nature of producing and consuming areas requires close field supervision and frequent interchange of grain among the collecting and storage points. Equivalent deterioration of the commercial truck fleet (which INCEI uses in addition to its own) will also hamper grain redistribution. Replacement of INCEI's unserviceable vehicles is estimated at C\$ \* million (US\$ \* millions):

	<u>Units</u>	<u>Value</u>
Truck		
Passenger		
Total	<u>*</u>	<u>*</u>

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\* Information to be supplied by INCEI to USAID/RDD.

### 3.3 BANCO NACIONAL DE DESARROLLO (BND)

The Banco Nacional de Desarrollo was created out of three earlier institutions. The Banco Nacional de Nicaragua (BNN) was the major agricultural lender in the country, with lending in 1977/78 of CS565 million for crops and CS224 millions for livestock. These amounts were 58% and 45%, respectively, of the totals lent by the entire national banking system. In addition, the BNN handled a special small farmer credit program (Crédito Rural) which lent CS82 millions for crops and CS95 millions for livestock in 1977/78. BNN also lent significant amounts for commerce and industry. The Instituto de Fomento Nacional (INFONAC) was the former state development bank. The Fondo Especial de Desarrollo (FED), a special rediscounting agency of the Central Bank for several lines of small agricultural and industrial credit, completes the BND. Note: The Instituto de Bienestar Campesino (INVIERNO), which also provides agricultural credit to small farmers is now a part of INRA and is expected to retain its banking functions.

BND is directed by Leonel Arguello Ramírez, President, assisted by Alvaro Porta. Alejandro Rodríguez, former BNN Vice-President, Edmundo Astorga, former BNN Vice President and Director Técnico, and Julio Mayorga, formerly Director of the FED, are principal supporting officers.

The major immediate problems of the BND are related to how it is to meet its responsibilities in line with a major restructuring of agricultural credit now in process. This restructuring implies a much greater state responsibility for all types of agricultural credit and will strain the considerable resources of the bank. To meet these responsibilities, the bank will absorb some of the future deposits and personnel from the rest of the banking system. However, until these build up, the BND will need much higher funding to meet the anticipated credit demand. These conditions and the bank's near-term requirements are discussed in Sec. 4, below.

### 3.4 INSTITUTO NICARAGUENSE DE LA REFORMA AGRARIA (INRA)

INRA was created by the combination of the Instituto Agrario Nacional (IAN), which was principally responsible for the management of colonization projects, and the Instituto de Bienestar Campesino (INVIERNO), which provides a complex of rural development services to small farmer communities in two agricultural regions of Nicaragua. INRA is destined to become one of the most important factors in the social transformation of rural Nicaragua.

INRA is directed by Minister Jaime Wheelock, whose deputy is Ricardo Coronel Kutze. Their primary concerns at present are (1) to absorb the lands expropriated from Somoza and colleagues and (2) to extend INVIERNO's operations to the rest of the country.

The expropriated farms amount to almost half the better agricultural property of the nation. Most have been decapitalized through removal or destruction of machinery, livestock, and buildings. None has operating capital, and reestablishing management will be a difficult problem. The total extent of needs is as yet unassessed, but will be staggering. INRA expects to obtain both investment and production credit through the Banco Nacional de Desarrollo. Farm operations will continue to be performed by the existing labor force, who will receive wages at competitive levels, but who will now participate in the profits. Management may arise from the same population perhaps with technical assistance, or be provided directly by INRA.

INVIERNO, which is now headed by Comandante Antenor Ferreye, will continue to serve the smallfarmer in much the same manner as at present. There will be increased emphasis on access roads, cooperative endeavors, and an expansion of its area of action, initially to the southeast. A decision is expected shortly on the distribution of small farm credit responsibility between INVIERNO and BND. It is expected that the BND program of Crédito Rural will pass to INVIERNO, or that the two programs will parallel each other, perhaps with a geographical separation.

INRA's requirements boggle the imagination. The immensity of their task of absorbing such an extended land area (reputed to be half of the good agricultural and grazing area of Nicaragua), and returning it to effective production could occupy all of the planning, management, and operating talent in the country, even without the overriding concern for building a new social order. The latter is clearly the orienting feature of the revolutionary government, but that government is just as clearly concerned with the production imperative. Keeping in mind that INRA will make its decisions based on its vision of a new social order, the following are the elements which might be provided most effectively by external assistance:

- (1) Planning Advisors
- (2) Credit (production and investment, channeled through BND)
- (3) Operations Advisors
- (4) Budget Support

#### 3.4.1 Planning Assistance

There exists a tremendous need for inventorying the resources which INRA has suddenly acquired, laying out farm plans, determining operating requirements (equipment, supplies, buildings, facilities, budgets, manpower, etc.), acquiring the needed resources, and planning specific operations. Some of this planning is essentially mechanical, but most will be participatory, requiring great sensitivity to national orientation and local involvement. A renewable grant to INRA of \$2.0 million would provide for its contracting such assistance.

#### 3.4.2 Credit

The needs for operating credit are already included in the credit projections for BND. Some investment dollars and local currency may be derived from a commodity import loan and the proposed World Bank program loan. The major problem here is not to provide such credits direct to INRA (although this could be a viable alternative), but to assure that INRA has access to them as its plans develop.

INVIERNO currently has an undisbursed balance in the AID loan of between \$5 and \$6 million, and at least \$3 million of this could be reprogrammed for credit, if needed. In addition INVIERNO has several million (dollar equivalent) in national bonds. Even with expansion of its zone of influence, it will probably not need additional credit inputs before 1981 or 1982.

#### 3.4.3 Operations Advisors

Most of the large farms which have been expropriated were in excellent operating condition and efficiently managed. Although severely decapitalized, they can be put back into shape very quickly with adequate capital and know-how. In some cases, existing personnel may be sufficiently competent in the technical and managerial functions to be able to operate these farms without external assistance. In most cases, INRA will have to provide operations advisors to work with the cooperative leadership now responsible for operations. Such experienced personnel are scarce in Nicaragua and probably already fully occupied on other properties. A credit to INRA of \$5.0 million, or a grant of \$2.0 million would permit it to contract such individuals from other countries.

#### 3.4.4 Budget Support

INRA starts with the resources of two competent organizations of limited size. Neither IAN nor INVIERNO have the personnel, equipment, or budget needed to take on the management of the expropriated lands and to expand into a larger area of operations. The clear implication is that INRA will have to acquire many more people and provide them with much greater operating resources, including office space, furniture, vehicles, and budget for salaries and operations.

#### 4. AGRICULTURAL CREDIT

A radical restructuration of agricultural credit is under way in Nicaragua as a result of the Revolution. These changes are the resultant of the following interrelated events:

(1) Nationalization of the Commercial Banking System. This system financed many of the intermediaries in the agricultural sector, e.g., coffee beneficios and input suppliers, who were prominent providers of production credit to their clients. Commercial banks also financed directly much of the production of export commodities. These commercial banks will have considerable difficulty in recovering their outstanding debts, much of which left the country with their clients. They may be expected to finance little agriculture in the near future because of a lack of resources and the uncertainty which affects their clients' production plans and credit demands. The agricultural financing burden which formerly was absorbed by commercial banks will have to be met by the Banco Nacional de Desarrollo.

(2) Expropriation of Agricultural Holdings. A very large acreage of large commercial farms formerly owned by Somoza and his partners and cronies has been expropriated. The GON, through the Instituto Nicaragüense de la Reforma Agraria (INRA), proposed to maintain the former productivity of these estates by creating Unidades de Producción Agrícola (UPAs), each composed of a dozen to a hundred or more families, to operate the farms collectively under effective technology and efficient management. These UPAs will require significant production and investment credit from public sources, since the new owners lack any financial resources, the farms were decapitalized by their former owners, and commercial credit will not be available.

(3) National Control of Agricultural Exports and Input Imports. INCEI has been given the responsibility for the management of all agricultural exports and importation of agricultural inputs. The way in which INCEI intends to exercise this responsibility is not yet clear, and its actions may range from licencing private exporters and importers to performing the function directly. However, this uncertainty combined with the probability of severely reduced margins may effectively curtail

the flow of production credit for cotton, coffee and sugar formerly provided by these intermediaries to their clients. This production credit requirement must also be absorbed by the nationalized banking system.

(4) Creation of the Banco Nacional de Desarrollo (BND). This superdevelopment bank absorbs the resources of the Banco Nacional de Nicaragua (BNN), the Instituto de Fomento Nacional (INFONAC), and the Fondo Especial de Desarrollo (FED). Individual smallholder credits are expected to continue to flow through INRA's INVIERNO and the BNN's Programa de Crédito Rural, but the bulk of lending to large and medium sized farms and to the UPAs must come from BND.

The ultimate impact of these interrelated events is uncertain. In its projections, the BND is planning to almost double the acreage formerly financed by the entire national banking system. Both BND and INCEI are proposing to import agricultural inputs in quantities exceeding prior year totals.

#### 4.1 DEMAND FOR AGRICULTURAL CREDIT

##### 4.1.1 Crop Production Credit

These changes in the structure of credit make it very difficult to predict demand, since there is no reliable information available on the extent of commercial credit to agriculture. It is reasonable to think that the BND will be expected to provide all of the credit formerly provided by the national banking system. That system financed about 35% of the planted acreage. Conservatively, the BND will also be required to finance another 15% to 25% of the commercial crop acreage in the future to offset the loss of commercial production credit and to supplement the more limited resources of those who now own expropriated property.

At the same time, the recuperability of the current portfolio of the national banking system is suspect, because many large borrowers have left the country and may not return. The BND estimates that at least one-fourth of their portfolio may be lost from this cause alone. It is

improbable that the private banking system will make any agricultural loans from any recoveries of current portfolio. Therefore, availability from the existing portfolio may well be limited to about 40%.

Using these assumptions, the calculations summarized in Table I yield an unmet credit requirement of C\$840 million (US\$84.0 million).

#### 4.1.2 Livestock Credit

Livestock credit requirements are much more difficult to predict. Nicaragua has excellent natural pasturage resources for beef production, has traditionally exported livestock to other Central American countries, and has shipped a full quota of boneless beef to the US in recent years. The war has had a devastating and lasting impact on Nicaragua's herd. Out of a national herd of 2 million, some 450,000 were slaughtered in Nicaragua for export and another 44,000 were slaughtered in Honduras. BND conservatively estimates a loss of 25,000 breeding cows and 150,000 heifers. Other estimates are higher.

This is not a favorable time for herd replenishment. The US cattle cycle is on the build, so female stock is scarce and expensive. Therefore, it is probable that Nicaragua will have to rebuild its herd from natural increase, and must rely on improved herd management to achieve a surplus for internal consumption and export.

The fewer head of livestock imply a lower level of financing; the need for better management and the prospect of higher prices in the near term will not fully offset this. Livestock lending by the national banking system in 1977 was C\$495.3 million. Adjusted for devaluation this would amount to a historical demand projection of C\$707.6 million. Reducing this historic demand by 20% for fewer stock would yield a gross requirement of C\$566.1 million. If 40% of the 1977 livestock credit becomes available for relending (C\$198.1 million) the net requirements would amount to C\$368 million (\$36.8 million).

Table 1

Estimate of Requirements for Crop Production Credit 1980/81

<u>Crop</u>	<u>Unit Financing <u>1/</u> CS/Mz.</u>	<u>Estimated Acreage <u>2/</u> Mz. 000</u>	<u>Acreage to Finance <u>3/</u> Mz. 000</u>	<u>Gross Requirements CS Million</u>
Sesame	1070	20	10	10.7
Cotton	4500	250	150	675.0
Rice	2930	25	13	38.1
Sugar	4500	60	30	135.0
Beans	820	120	25	20.5
Corn	740	300	54	40.0
Sorghum	1200	90	20	24.0
Coffee	3100	140	34	260.4
Others	1800	<u>25</u>	<u>13</u>	<u>23.4</u>
		1030	399	1227.1
Less 40% of banking system portfolio (estimated credit recovery)				<u>387.0</u>
				840.1

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1/ Calculated from BNN Informe Anual 1977 adjusted for devaluation.

2/ BND projections of August 3, 1979.

3/ 60% of cotton and coffee, BND projections for basic grains and 50% for rice and all others.

#### 4.1.3 Credit Demand Summary

Net Credit Requirement for Crops	US\$ 84.0
Net Credit Requirement for Livestock	US\$ <u>36.8</u>
Total	US\$120.8

The Inter-American Development Bank is making \$35 million available to BND for agricultural credit, and some part of the deficit will be made up by new deposits. However, it is evident even from these crude estimates, that credit demand will exceed supply for some time.

#### 4.2 AREAS PROPOSED FOR FINANCING

Two major options (and their combination) are available for AID financing of agricultural credit:

(1) AID funds may be used to finance the small farmer end of the agricultural credit continuum in the traditional AID manner, leaving the IDB and BND funds available to cover medium and larger operations. If this option is followed, AID funds should be made available for any small farm production enterprise, including livestock, cotton, coffee, sesame, sugar and other lucrative export crops as well as for basic grains and other food crop. In aggregate, the total small farm output of these products will not loom large in the national production but it will provide high returns to individual smallholder beneficiaries when compared with traditional crops.

(2) AID funds might be dedicated exclusively to finance the Unidades de Producción Agrícola (UPAs). These UPA loans will be large, easily defined, and directed to a deprived class of rural residents who the GON clearly wishes to benefit. However, UPA financing implies the large scale financing of export crops, principally cotton, sugar, sesame, rice, coffee, and tobacco, since a major reason for the UPA configuration is to maintain the historic output of these foreign exchange earners.