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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations  
For the Review of the  
Development Loan Committee

NICARAGUA - Penetration Roads Betterment Loan

AID-DLC/P-977

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DEPARTMENT OF STATE  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
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June 2, 1971

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Nicaragua - Penetration Roads Betterment Loan

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$2,800,000 to the Government of Nicaragua to assist in the financing the foreign exchange costs associated with the construction of all-weather feeder roads to provide year-round access to markets and services for the population and products of certain remote areas of Nicaragua.

Please advise us as soon as possible but not later than the close of business on Thursday, June 10, 1971, if you have a basic policy issue arising out of this proposal.

Rachel R. Agee  
Secretary  
Development Loan Committee

Attachments:

Summary and Recommendations  
Project Analysis  
Annexes I - IV

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NICARAGUA - PENETRATION ROADS BETTERMENT

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NICARAGUA - PENETRATION ROADS BETTERMENT

PART ONE: SUMMARY AND RECOMMENDATIONS

1. BORROWER: The Government of Nicaragua

Executing Agency: Ministry of Public Works

2. AMOUNT: Up to \$ 2,800,000

3. LOAN TERMS:

Amortization in 40 years. Grace period 10 years

Interest: 2% during grace period and

3% thereafter on outstanding balance.

4. TOTAL COST OF THE PROJECT

The total cost of the project is estimated at \$4,000,000.

The following table indicates the sources and uses of funds:

(in thousands of US dollars or equivalent)

	Local Currency Expenditures	Foreign Cost * Expenditures	Total	%
A.I.D. Loan		2,800	2,800	70
Government of Nicaragua	<u>1,200</u>	<u>-</u>	<u>1,200</u>	<u>30</u>
TOTAL	1,200	2,800	4,000	100

\*AID Code 941, including procurement from CACM countries other than the borrowing country.

## 5. DESCRIPTION OF THE PROJECT:

Construction or reconstruction of seven (7) feeder roads totalling approximately 218 kilometers in various isolated areas of the country over a period of three years. The roads will be all-weather, but built to limited design standards and surfaced with locally available selected materials (not paved). The roads to be built under the project represent the first phase of a long range Feeder Roads Plan of the Government of Nicaragua aiming at the construction of a total of about 5000 kms of penetration roads in the country. The first roads selected will link the areas served by them to the main highways and roads of Nicaragua.

## 6. PURPOSE OF THE PROJECT:

To provide year-round access to markets and services for the population and products of rural areas that now lack such facilities. The project will benefit a population estimated at about 85,000 in areas totalling 2509 square kilometers. A corollary purpose of this project is to build the capacity of the Highway Department of the Ministry of Public Works to carry out a continuing program of feeder road betterment of some 300 kilometers per year.

## 7. BACKGROUND OF THE PROJECT

The Government of Nicaragua requested AID assistance in a project to bring up to minimum all-weather standards approximately 1,100 kilometers of roads, tracks and trails now passable only in the dry season (6 mos.). A study financed by the GON was submitted in support of the request. After long negotiations the Ministry of Public Works consented to strengthen the economic and technical data on some specific roads. Additional studies were made by qualified consultants on the roads included in this project. During the Intensive Review USAID/Nicaragua had the benefit of the expertise of the Chief Economist of the US Bureau of Transportation who made several site inspections to cross-check the data submitted as justification for this project. All the recommendations made by the US Bureau of Transportation were discussed with the Ministry of Public Works before their incorporation in this Capital Assistance Paper. Following review of the Intensive Review Request by the CAEC in October of 1969 USAID/Nicaragua was authorized to proceed with the Intensive Review. Minutes of the CAEC meeting established guidelines for the

preparation of the loan paper which have been carefully followed. Each specific point raised at the CAEC is treated in Section IV of the Loan Paper, Page 28.

8. OTHER SOURCES OF FINANCING:

Eximbank, IDB and IBRD have each indicated no interest in this project according to information on file in AID/W (see Annex II, Exhibit 2).

9. MISSION VIEWS:

The Country Team recommends authorization of this loan. The Government of Nicaragua has included the project in its recent submission to the CIAP among its highest priorities. The Project is an integral part of the Country Assistance Program whose priority goal is improving the productivity and welfare of the rural population of Nicaragua and integrating it into the national market. This project is considered by both the Government of Nicaragua and the Country Team as a necessary component of the total rural development program.

Mission review has confirmed a favorable benefit/cost ratio for the project and for each road selected.

10. STATUTORY CRITERIA:

Certification by the Director of USAID/Nicaragua in accordance with Section 611 E is attached hereto. All other statutory criteria have been met (see Annex I, Exh. 1 and 2).

11. ISSUES:

The Project Committee finds no major outstanding issue concerning this project. The conditions and covenants recommended are deemed adequate to assure implementation of the project within the time period and according to AID requirements. Financing for a related project for road maintenance and technical assistance is being negotiated between the IDB and the GON. Assurance of satisfactory maintenance is to be a condition precedent to disbursement of loan funds for this construction project.

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Justification for methods of implementation and analysis of the external loan pipeline are treated in Section IV of the Loan Paper, page 28 and Annex IV.

## 12. RECOMMENDATION

Authorization of a loan to the Government of Nicaragua for an amount not to exceed \$2,800,000 to cover foreign cost of the project, including procurement from CACM countries other than the Borrowing country. The loan would be subject to the following terms, conditions and covenants:

### a. Terms of Payment

- Amortization : 40 years from the date of first disbursement.
- Grace Period : 10 years on repayment of principal.
- Interest : 2% per annum on outstanding balance during grace period and 3% per annum thereafter.
- Currency of Repayment : U.S. Dollars.

### b. Conditions and Covenants

1. Prior to the first disbursement or issuance of disbursement documents the Borrower shall submit in form and substance satisfactory to AID:

(a) Evidence of arrangements for engineering services for certification of payment and construction supervision.

(b) A schedule indicating dates and amounts of annual contributions totalling not less than the equivalent of \$1,200,000 which the Borrower will contribute to the Project over a period of 3 years from the date of execution of the Loan Agreement;

(c) A national secondary road maintenance plan and evidence of arrangements for the procurement of equipment, organization, training and financing required to implement said plan, including the maintenance of the equipment;

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(d) Borrower's agreement to furnish AID all plans, specifications construction schedules, bid documents and contracts relating to the project and any modification therein, whether or not the goods and/or services to which they relate are financed under the loan.

2. Covenants

(a) Procurement of goods and services with loan funds will be made from AID Code 941 countries, including CACM countries other than the Borrowing country;

(b) The Borrower will provide the rural areas to be served by the penetration roads included in this project the government services required for the economic and social development of the areas;

(c) The Borrower shall maintain the roads included in the project and provide sufficient separately budgeted funds to assure maintenance of said roads for a period of 10 years after completion.

(d) All aspects of this project which may require changes to the natural environment of the project area will be considered for potential damage to this environment. Whenever necessary a plan for the minimizing and controlling of ecological damage will be drawn up for each project.

3. The loan shall be subject to such other conditions and covenants as AID may require.

13. PROJECT COMMITTEE

Capital Resources Development Officer:	Jean M.E.Artaud
General Engineer:	Carl M. Forsberg
Development Program Officer:	Allen Goldstein
Chief, Tech. Asst. Div., US.DOT:	Howard Lapin
LA/DR:	Ron Bobel
Controller:	Milton E. Eshleman

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Reviewed and Approved by:

Mission Director:  
Assistant Mission Director:

William R. Haynes *(in draft)*  
Charles B. Johnson *(in draft.)*

Drafted by:

*J.E.* *C.M.F.*  
Jean M.E. Artaud/Carl M. Forsberg

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## PART TWO - THE PROJECT

### Section I - NATURE OF THE PROJECT

#### A. Description and Objectives of the Project

The Government of Nicaragua has a long-term Plan of Penetration Roads Improvement. This project is the first phase of execution of such Plan for which the required technical and economic data have been completed and found acceptable by AID.

The AID loan funds will assist in (1) financing the betterment construction of seven feeder roads aggregating about 218 kilometers, including bridge construction on one segment, technical assistance and supervisory engineering services and (2) providing road construction equipment that will help build the capacity of the Highway Department to carry out a continuing program of road betterment construction.

##### 1. Betterment of Construction

The seven feeder roads are located in two areas which egress for social or commercial purpose is presently difficult or impossible. The areas affected by the project are the Esteli Region, Zone A, approximately 168 kilometers of road and the Chontales Region, Zone B, approximately 50 kilometers. See location map of sub-projects roads (Annex III, Exhibit 2). All of the roads proposed for betterment have existing beds but are usable only in the dry season. The proposed construction work over 1972 - 1974 is designed to raise these roads to all-weather transit standards.

The all-weather objective will permit construction according to limited design standards. The roads will be surfaced (not paved) with locally available selected materials, according to AID approved specifications prepared by the Ministry of Public Works. Plans provide for a crown road width of 5 meters and 3.5 meters width for the bridges and anticipate traffic of less than 100 vehicles per day.

The betterment construction will benefit 2,509 square kilometers and an area population of about 85,000. The roads to be built to all-weather capacity under this project are as follows:

- 2 -

ZONE A

Esteli - San Rafael	43 kms (app.)
San Rafael - Yali	17 kms ( " )
Yali - Esteli	25 kms ( " )
Yali - Condega	38 kms ( " )
Esteli - San Nicholas	12 kms ( " )
Esteli - El Sauce	33 kms ( " )
Total km	<u>168 kms</u> (app.)

ZONE B

La Libertad - Santo Domingo - El Chile	<u>50 kms</u> (app.)
Total Zones A+B	218 kms (app.)

Betterment construction will be by force account. The Highway Department has sufficient experience in this type of work (see Section I.B.1, Page 4 ). The total local cost, estimated at the equivalent of \$1,200,000 will be contributed by the GON. New Equipment estimated at \$2,400,000 will be financed from the AID loan of \$2,800,000., which will include supervision, technical assistance, equipment maintenance, training and foreign cost of construction. The total project cost is estimated at \$4,000,000. A full description of each penetration road is given in Annex III, Exhibit I.

2. Building up the Capacity of the Highway Department

About 3/5 of the useful life of the equipment financed from the AID loan will be applied to this project. The balance of the serviceable life of the equipment will be applied (and costed) to carry out the Highway Department betterment construction schedule in 1975 and 1976 of about 300 kms per year. Thus an important feature of the project is that the Borrower must have adequate facilities to assure proper servicing, maintenance and repair of equipment (see Annex II, Exhibit 1).

During Intensive Review particular attention was given to the need for technical assistance in the maintenance of the equipment by the Specialized

Division of the Ministry of Public Works. On the basis of evidence gathered the Equipment Maintenance Section is well-staffed with skilled and experienced mechanics who have had the benefit of continuous supervision by the BPR in Nicaragua for the past 20 years. Since the equipment to be purchased under this loan will require additional services, the Loan Agreement will make specific provision for maintenance of the Equipment by the GON.

### 3. Purpose

This proposed loan, combined with specified local resources is to assist the GON to integrate into the national economy certain semi-isolated rural areas in Nicaragua by means of a penetration roads betterment project. It is now impossible for these areas to participate in economic and social commerce with the rest of the country on a year-round basis. The existing roads, little more than dirt tracks in many places, are passable only in the dry season, owing to the lack of proper drainage and surface design to prevent annual wash-outs. This weather pattern has restricted opportunities for marketing production of farm products from large areas, inhibited agricultural development of these areas and forced many farmers to accept subsistence farming as a way of life. The roads betterment proposed by this project will provide new conditions for farming as well as for other development activity in such areas as health and education. Opportunities for increasing and marketing farm production will be opened. A corollary purpose of this project is to build the capacity of the Highway Department of the Ministry of Public Works to carry out a continuing program of feeder roads betterment of some 300 kilometers per year.

### 4. Specific Project Objectives

This project is expected to result in the following:

- a) Bring up to all-weather standards approximately 218 kms of penetration roads.
- b) Capacitate the Highway Department to carry out a continuing program aiming at roads betterment of about 300 kms per year.
- c) Reduce transportation cost to the users.
- d) Provide egress to markets and agricultural services.

- e) Stimulate agricultural production.
- f) Facilitate other social and commercial services to the area population.

In addition the revenues of the Government of Nicaragua will increase through new receipts from taxes on vehicles, fuel and property.

## B. Project Background

### 1. Brief History of Roads and Highways Construction in Nicaragua

The present highway network was started in the 1930's when a route between Managua and Tipitapa was completed and a route leading south from Managua was started. The Highway Department (Departamento de Carreteras) was organized in 1940 under the impetus of the Interamerican Highway Program and with the guidance of the EXIMBANK of Washington. The first chief of the Highway Department was an engineer from the Bureau of Public Roads. Since that time highway construction and expansion in Nicaragua has been continuous.

Annex III, Exhibits 3, 4 and 5 show three stages of growth of the Nicaraguan highway network in 1945, 1955 and 1970.

The Interamerican Highway in Nicaragua was completed in 1965 and paved throughout its entire length of 384 kilometers. This highway was financed on a cooperative basis: the United States financed 2/3 of the cost and the Nicaraguan Government 1/3 of the cost. Maintenance of the Interamerican Highway is the responsibility of the Nicaraguan Government.

Construction of the RAMA Road began in 1955 under an agreement between the Governments of Nicaragua and the United States. Construction was completed in 1967. The cost of construction was borne by the United States. The right-of-way was provided by the Government of Nicaragua. The Rama Road begins at San Benito, 35 kilometers north of Managua on the Interamerican Highway and proceeds 256 kilometers eastward to RAMA, an inland port on the Escondido River. The RAMA Road is the only road connection from the Atlantic Coast to the population centers on the Pacific side.

In 1961 and 1962 AID loans 524-A-003 and 524-L-005 aggregating \$7,995,000 were obtained by the GON to assist financing 268 kms of road construction (paved). That project resulted in linking some of Nicaragua's best agricultural zones, isolated all or part of each year, to the main urban markets and to Corinto, the principal seaport on the Pacific coast. Formerly many of the affected areas had been restricted to subsistence farming. This construction was accomplished by the Highway Department and the success of the project has demonstrated the effectiveness of "force" account work in Nicaragua. The force account construction method is discussed in Section V, Issues, Page 28.

Bureau of Public Works (BPR) specifications are used for all highway construction financed by loans, including BID, CABEL, EXIMBANK and AID. The BPR has also acted as consultant on specifications, plans, and construction.

## 2. Current Highway Construction Program

At the present time the Highway Department has four active highway projects in various stages of construction, as follows:

### Portezuelo - Las Mercedes

This project, which is financed by a CABEL loan, consists of 7.0 kilometers of 4-lane paved highway from the eastern city limits of Managua to a short distance beyond Las Mercedes International Airport, with a marginal road along the south side. Work is now 99 percent complete. Total cost will be approximately \$1,700,000., with project completion in July 1971.

### CA-6

As indicated by the title this 24 kilometers project is a section of the Central American highway network, also being financed by a CABEL loan. It connects the town of Ocotol with Las Manos on the Honduran border. Work is now 73 percent complete. Termination is scheduled for October 1971 at a total cost of \$3,143,000.

Rama Road

The two final sections of this road comprising 130 kilometers are under contract for the placement of an asphalt surface. The value of these contracts is \$6,044,000., the work being financed by a CABEL loan. Work on the section Las Palomas - El Cacao is 48 percent complete. Completion of the second section El Cacao - Rama is scheduled for 1974.

PROLACSA

This project, also known as the Nicaragua Access Road Program, being financed under BID Loan 63/SF-NI, provides for the construction of 460 kilometers of access type roads. The majority (392 kms) will be in north-central Nicaragua in the general vicinity of the city of Matagalpa and are referred to locally as the Camabocho Project Roads. The Camabocho roads are in direct support of a newly constructed powdered milk plant located in Matagalpa. They serve 21 towns and the livestock and general farming area to the east and south of Matagalpa by providing all-weather access routes where none existed before.

To date 162 kilometers have been completed and 171 kilometers are in various stages of construction, ranging from 40 to 95 percent complete. BID has recently granted permission for the balance of the project to be completed by force account. Total cost of the project is set at US\$ 17,600,000 and completion scheduled for the second quarter of CY 1973.

3. Evaluation of Previous AID Road Loans

Loans 524-A-003 (DLF-209) and 524-A-005 for a total of US\$8.0 million were signed on September 25, 1961 and November 21, 1962 respectively. During the period 1962-1967 a total of 268 kilometers of highways in eight sections were constructed. Also, approximately \$0.5 million was used for rehabilitation work on two major highways.

All eight sections were either National second class or Departmental first class and of the 268 kms, 215 kms received an asphalt treated surface with the

other 53 kms having a gravel surface. All construction was done by the Highway Department on a force account basis. Engineering supervision was by the U.S. Bureau of Public Roads. BPR standards were followed, using FP-61 specifications with adaptations and special provisions to cover local conditions.

These highways were well constructed, have received satisfactory maintenance, and all are in good condition at this time. According to Highway Department traffic counts all sections are handling a greater volume of traffic than anticipated, with one exception. The Telica-San Isidro road, which connects the Interamerican Highway in north central Nicaragua to the west coast near the Port of Corinto, is carrying less traffic on its eastern section than anticipated. However, the western section which opened up a good agricultural area does have a high volume of traffic.

4. CAEC Comments on IRR

The Project Committee has treated all the questions raised at the IRR stage. For full comments see Part IV, Issues and Annex I, Exhibit 4.

5. Justification for AID Financing

Other international and regional lending institutions showed no interest in financing this particular project. They stated that their funds were already earmarked for other projects in Nicaragua: CABEL is already funding the Nicaraguan part of the Central American Highway network; IDB is financing the PROLACSA roads and is ready to finance a Secondary Roads Maintenance Program. When approached as a possible source of financing, the IBRD did not encourage the GON. At the time the first inquiry was made, AID, which has always shown a deep interest in the development of the rural areas in Nicaragua, encouraged the Ministry of Public Works to prepare a plan for the betterment of the penetration roads which could be used throughout the year. The plan was prepared by personnel of the Ministry and refined by private consultants. The cost of implementation of this program with its own funds is beyond the financial capacity of the GON. The financing of the equipment which might have been obtained from the EXIMBANK would be a heavier burden than the GON could carry in its present financial situation. ( See Annex II, Exhibit 2 - Answers from other lending institutions.)

AID is at present the only source of funds for this type of project in Nicaragua because it can offer a reasonable interest rate and longer terms for repayment.

6. Place of the Project in the AID Program

This project has a high priority in the AID program because it aims at the social and economic development of two remote rural areas in Nicaragua which show a good potential for agricultural production. The small farmers will have an incentive to produce beyond the subsistence level because of easier access to markets. This project will also foster the coordination of other AID financed projects and programs in the fields of agriculture, education, health, all aiming at the integration of the rural areas in the national economy.

At the recent CIAP review meeting held in Washington, D.C. this project, which is only the first phase of a long-range program, was given a very high priority by the Nicaraguan representatives.

Section II - PROJECT ANALYSISA. General Scope

The general scope of the project is far-reaching. This is so because in its nature the betterment road project is transportation infrastructure and, consequently, communication also. The project will result in new conditions for all-weather contact between semi-isolated rural areas and the urban and commercial centers. The project scope defines itself within the purview of social, economic, and political integration. Thus it is a major instrument conjoined to other GON and AID financed programs affecting these same areas in north east Nicaragua. These other programs include the Rural Electrification Project (AID Loan \$10,200,000), Health Center Construction (AID Loan \$2,200,000) and Primary School Construction (AID Loan \$1,500,000).

The project intent is to facilitate the application of these social programs and the Ministry of Agriculture's extension service to the remote project area populations. Thus this project is integral to the wide-ranging scope of which it is a part. In the general view the project is an initial step toward the integration of the rural areas into the national economy.

Furthermore, the scope goes beyond the immediate construction of 218 kilometers of rural roads and commits the Ministry of Public Works to a continuing program of secondary road construction in other areas. The GON road construction program is ambitious and long-range and it is also necessary if the rural population is to benefit from the numerous AID and GON ongoing programs aimed at these areas. Finally the scope of the project includes the commitment of the GON to a program designed and financed (by the IDB) to maintain the existing and future secondary roads.

B. Project Components

The project consists of two main components: the betterment construction of about 218 kilometers of penetration roads in two separate zones and the building up of the capacity of the Ministry of Public Works to carry out a continuous program of penetration roads betterment construction.

The seven roads chosen by the Ministry of Public Roads of Nicaragua are part of the long range Feeder Roads Plan aiming at the betterment construction of about 5000 kms of penetration roads in the country. The application of the GON for the financing of the first phase (1100 kms) was studied by the USAID, and at the IRR stage the Ministry of Public Works was requested to refine the economic and engineering data. The Zones chosen were those where the Government is already engaged in basic agricultural and social development. Other AID financed projects such as rural electrification and supervised agricultural credit are reaching the two Zones to be served by the roads. The project committee took into consideration the social economic and political factors involved in the selection of the two Zones and came to the conclusion that the selected projects are prototypes of the development activities envisioned in the total penetration roads program.

In the betterment construction component, first priority under the loan will be given to Zone A as recommended by the consultant and the representative of the US Department of Transportation. Within Zone A, the project will start with the following roads which constitute a loop around the Esteli rural area: Esteli - San Rafael - Yali - Condega.

For more details on the individual roads included in the betterment construction component see Annex III, Exhibit 1.

The Project Committee has recommended a substantial amount of technical assistance and training in order to achieve the goals of the second main component of this project. It became obvious that the provision of equipment alone would not bring up the capacity of the Highway Department to carry out a continuous penetration roads betterment program. The technical assistance sub-component and the corollary on-the-job training will be concentrated on techniques of vehicle data control, equipment inventory, preventive equipment maintenance, emergency repairs all of which will add to the useful life of the equipment purchased under the loan.

The Borrower shall submit a detailed plan for the use of the funds destined to technical assistance and training. This will be a condition precedent to the disbursement of funds for those purposes.

## C. Economic and Financial Analysis

### 1. Economic Analysis and Justification

#### a. Analysis

##### i) The Role of the Rural Sector in the Economy

Despite the rapid growth of the industrial sector of the economy, and some movement into the urban areas from the country-side, Nicaragua remains predominantly a rural economy. According to the Central Bank and the Ministry of Economy, 53 per cent of its population (or 1,074 thousands inhabitants) was classified as rural and 47% (901,172) was classified as urban, as of June 30, 1970. The majority of the rural population was situated in the Northern and Central zones, somewhat less in the Pacific, and a considerably smaller portion in the Atlantic zone. Although there has been a reduction in the rural population (59 per cent in 1963 to 53% in 1970), the increase in the absolute numbers of the rural population indicates that it will remain the predominant sector for some time to come. Although there is no official data, it is estimated that 60 per cent of the economically active population is involved in rural activities, i.e., agriculture, forestry, fishing and livestock. Of course, to the extent that the industrial sector depends on the rural sector for its raw materials, the importance of the latter sector is even more evident.

The relative economic position of the rural sector has been reduced over the past five years, but it still plays the single most important role in the economy. In fact, the recent slowdown in agricultural economic activity has been, to some degree, compensated for by an increase in industrial and other non-agricultural activities. This compensation has been only partial, however, and economic growth indeed has been stunted by the slowdown in the agricultural sector during the past few years.

While the growth of the Gross Domestic Product rose by 3.7 per cent in 1970, the output of the primary sector (agriculture, forestry, fishing and livestock) actually declined by 0.3 per cent. The value of agricultural crop output actually declined 4 per cent in 1970 while the fishing sector fell by 7.4 per cent. The livestock and forestry sectors continued to grow.

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In terms of contribution to GDP, the primary sector also declined, amounting to about 27 percent of GDP from an average of about 30 percent in previous years. However, since a portion of agricultural products is processed by the industrial sector, and much of commerce consists of trade in agricultural commodities, the direct and indirect participation of the rural sector in the economy's total output of goods and services is greater than that shown by the above data. The total value of agricultural production did increase in 1970 to a value of \$211,630,000 but production of the major crop, cotton (\$47,020,000), actually fell by 19 percent. Although the value of production of most other crops also increased in 1970, it was the 47 percent growth in the value of coffee production that prevented a serious decline in the total value of agricultural output.

Although the position of the rural sector, as exemplified in export statistics, did deteriorate in 1970, its contribution still remained high. In 1970, cotton exports fell to 19 percent of total exports from 29 percent the previous year (and peaks of 45 percent in years prior to 1966) but coffee exports rose to 18 percent of total exports. Other non-traditional agricultural crops, particularly meat and fish, increased. (It should be noted that in Nicaraguan statistical data, fresh meat exports are considered industrial exports; in the above narrative, they are attributed to the rural sector). In general then, no matter how one cuts up the economy, and despite the poor showing of certain agricultural products, the output of the rural sector continues to play a major role in the economy. In fact, it is because of the slowdown in the rural sector that overall economic growth has slowed to a point where it just exceeds the rate of population growth. The industrial sector has just about taken up the slack, but it has not been able to affect as many economic indicators or as many people as can be affected by developments in the rural sector. It is this situation that is one justification for a U.S. input into the rural sector in the form of loans such as this one.

Programs by the GON and USAID to improve and diversify agricultural development so as to improve the welfare of rural population are discussed below.

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ii) Rural Development of the GON and AID

There are several GON agencies involved in improving the economic condition of the rural sector. Those directly related to improving agriculture include the Ministry of Agriculture, the National Bank (BNN), the National Development Institute (INFONAC), the Institute for Internal and External Commerce (INCEI) and the Agrarian Reform Institute (IAN). Following is a brief resumé of some of the rural development projects being undertaken by these agencies:

Ministry of Agriculture:

The Ministry is a policy and regulatory agency primarily, with much of the actual work being undertaken by the various autonomous agencies such as BNN, INCEI, etc. Agricultural education, research and extension are responsibilities of the Ministry. With USAID assistance, the MAG has undertaken applied research projects in rice, animal nutrition and forage crops, and has an extension service that provides technical assistance to small farmers. The Ministry is participating in the development of rural youth clubs, and cooperates with other Ministries in promoting school garden programs throughout Nicaragua. The USAID is continuing to support an irrigation demonstration project to determine the economic application of irrigation on selected crops.

The National Bank:

The BNN, under a \$9.4 million U.S. loan, is financing the U.S. dollar costs of agrochemicals to be used for the production of rice, corn, sorghum, beans, sesame, forage, peanuts and some other crops. To date, this program has involved 4,000 clients and 110,000 acres of crop land. The BNN has a program of rural credit providing financial resources and technical advice to the medium and small sized farmers to assist them in financing crop inputs. (The BNN provides 80-90 percent of all credit provided to the agricultural sector by the banking system). The BNN has a contract with TAHAL, an Israeli concern for irrigation assistance primarily on cotton. It has a rice irrigation project and a cattle improvement project, supported by funds from the Inter-American Development Bank. The BNN

also administers a supervised agricultural credit program for which AID supplied one million dollars of capital. (AID Loan No.524-L-015).

The National Development Institute. (INFONAC):

INFONAC is involved in a number of projects directly related to the rural sector. It has concluded an agreement with Standard Fruit Company for the cultivation of Bananas; has invested in a tobacco program for export of Havana-type leaf and cigars; has a cattle improvement project and has invested resources in a modern meat packing plant (IFAGAN). With IDB assistance, it is carrying out the PROLACSA project which involves the development of a milk production area (roads and a processing plant) in the North-Central region of Nicaragua. Assisted by the U.N., INFONAC conducted a forest resource inventory of 300,000 hectares of land on the North Atlantic Coast and is presently improving the forested area. Primarily, however, the majority of INFONAC's resources are allocated to industrial-type projects rather than agricultural projects per se.

The Institute for Interior and Exterior Commerce. (INCEI):

INCEI is the Government agency in charge of the price stabilization of basic grains. It is now receiving assistance, under a USAID-funded borrower-grantee contract, for the development of a price stabilization, storage and marketing program for agricultural products. INCEI is terminating the construction of 100 small drying and storage units with a 1,000 tons capacity each, distributed throughout the country. Two regional grain terminals each with 10,000 MT capacity are scheduled for completion in 1972.

Agrarian Reform Institute. (IAN):

IAN is involved in the distribution of titles to national lands and the development and settlement of new colonies. Under the former project land titles have been issued to more than 12,000 families affecting more than 80,000 people. There are more than 30 colonies under IAN's direct supervision, covering an area of 41,700 hectares and benefiting almost 3,000 families.

The above do not represent all of the programs to improve the welfare of the rural population. There are other programs in health, education, roads, electric power, etc., that are currently active in the rural sector supported by AID and international agencies. In general, this rural sector remains a major priority concern of the GON and the International Financial agencies and continues to receive aid in a number of programs and projects.

iii) General Economic Panorama

Economic growth as measured by the Gross Domestic Product (GDP) continued to stagnate. In 1970, GDP rose by only 3.7 per cent as measured against a population increase of about 3.2 per cent. There were several factors that caused this low rate of increase. The value of agricultural output declined by 5.0 per cent in 1970 compared to a minus 0.2 per cent in 1969. In addition, while the output of the fishing sector grew by 14.5 per cent in 1969, it actually fell by 7.4 per cent in 1970. Thus the output value of the primary sector actually declined slightly (0.7) in 1970, compared to an increase of 2.9% the previous year. The secondary sector rose 5.1 per cent in 1970 thereby compensating in part for the decline in the primary sector, but even this increase was less than in 1969. Two reasons account for this: (1) a decline (8.7%) in the construction sector compared to a 7.8 per cent increase in 1969 and (2) a sharp fall in mining output (-24.0%) compared to a decline of "only" 9.3 per cent the previous year. Manufacturing output continued to grow (9.5%) but at a much smaller rate than in the previous year (15.0%). The tertiary sector (commerce, transportation and communication, etc.) continued to rise and in 1970 increased by 4.1 per cent.

Despite the poor general growth, other economic factors were favorable in 1970. Central government revenue reached a peak of \$81.5 million in 1970, an increase of more than \$10 million over the previous year. The GON projects an additional \$10 million increase in 1971. Government savings and capital expenditures also rose and are expected to increase further in 1971.

Loans from the banking sector to the private sector rose at 6.5 per cent, approximately at the previous year's rate of growth. This was a relatively tight credit ceiling as measured by rates of growth in 1968 and 1967

(9.4% and 13.7 percent respectively). Meanwhile banking claims on the government and official entities declined somewhat, with the result that total domestic credit of the banking system increased by only 5.2 percent, compared to rates of growth of 8.6 per cent and 6.3 per cent in 1969 and 1968 respectively. Savings and time deposits rose by 18.8 per cent, considerably higher than rates of growth prevailing in the last several years. The money supply (currency in circulation and demand deposits) also continued their upward trend, after declining in 1967 and 1968. The monetary situation remains stable in Nicaragua. The Government has not had to resort to inflationary financing to cover the budgetary deficit, and the control over credit has prevented a surge of inflation.

The Balance of Payments also has improved in 1970. Total exports rose to \$178.7 million, an increase of \$21.2 over the previous year. Imports increased to \$177.9 million (f.o.b.) from \$158.4 in 1969. Including services, the balances on current account did remain at a high deficit level, i.e., minus \$36.8 million. The large inflow of capital, both private and public, exceeded the current account deficit and permitted the GON to increase its reserves by \$12.5 million in 1970 after a decline of \$6.5 million the previous year.

b. Justification

The economic justification for the project appears in Annex II, Exhibit 3.

Satisfactory cost benefit ratios have been verified at rates of 10, 12 and 14 per cent. For more details see the above mentioned Annex.

2. Financial Analysis

a. Total Cost of the Project

The total cost of the project is estimated at \$4 million, of which \$2,800,000, or seventy per cent (70%) are foreign costs and the equivalent of \$1,200,000 or thirty per cent (30%) are local currency costs mainly for construction. In the event that some materials are procured from Central American countries other than Nicaragua, AID funds will be used to pay the cost of these imported materials.

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Cost estimates are based on the Feasibility Studies submitted by the Borrower as revised by the U.S. Bureau of Transportation both in the field and in Washington, D.C. Calculations are made using the experience of the Highway Department of Nicaragua in similar projects predicated on recent quotations and normally accepted engineering costs calculated as a percentage of total direct cost and applying a 5 to 10 percent contingency on all direct construction costs. The Project Committee has reviewed the costs and finds them a reasonably firm estimate of the cost to complete the project as planned.

This project consists of two main components, i.e. (1) Betterment Construction of about 218 kms. of penetration roads over a period of 3 years and (2) Bringing up the Capacity of the Highway Department to carry out a continuous program of penetration roads betterment of an average of 300 kms. per year. A breakdown of the estimated project costs by components and source of funding follows:

Components	Local Currency (GON)	Foreign Costs (AID)	TOTAL
1. Betterment construction 3 years	1.100	1.440 (Equipment)	2.540
Foreign construction materials	---	100	100
Supervision	50	100	150
Technical Assistance	---	100	100
Sub-Total 1st Component:	<u>1.150</u>	<u>1.740</u>	<u>2.890</u>
2. Capacitation of Highway Dept.	---	960 (Equipment)	960
Technical assistance & training	50	100	150
Sub-Total 2nd Component:	<u>50</u>	<u>1.060</u>	<u>1.110</u>
Total Estimated Project Cost:	<u><u>1.200</u></u>	<u><u>2.800</u></u>	<u><u>4.000</u></u>

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The cost estimates of \$15,741 per kilometer in Zone A and \$19,600 in Zone B were adopted by the U.S. Department of Transportation who revised the consultant's report. For the purpose of analysis this project is divided into two main components, betterment construction of 218 kms of roads and the building up of the capacity of the Highway Department to carry out a continuous program of secondary road betterment. To the first component only sixty percent (60%) of the total cost of equipment is applied. The other 40 percent is considered a part of the second component.

The list of equipment was compiled on the basis of the betterment construction of 218 kms and the need to capacitate the Highway Department to carry out a continuous program of secondary roads betterment with a goal of 300 kms per year. The list which appears in Annex III, Exhibit 6, was prepared by the Ministry of Public Works and carefully revised by the consultants and the USAID engineers who concluded that such equipment was needed to complete the betterment construction component within the time framework and to build up the capacity of the Highway Department. It is anticipated that, based on a useful life of five years, at least two years of equipment life will be available to carry out the second goal of building a capacity within the highway department for continuous secondary road betterment operations. This will be accomplished by assigning the equipment to the Department for this purpose once the 218 kilometers of roads included in the initial phase are completed.

It is pertinent to mention at this point that the GON is expected to have inputs additional to the \$1,200,000 in order to maintain the equipment purchased with loan funds throughout the period of its useful life. This will be part of the national maintenance plan acceptable to AID which will be a condition precedent to disbursement of loan funds.

b. Disbursement Projections

Assuming authorization in June 1971 and completion of detailed loan negotiations, execution of Loan Agreement, meeting of Conditions Precedent by the end of the year the project funds are expected to move as follows:

---

Estimated Flow of Project Fund  
(In thousands of U.S. dollars or equivalent)

	<u>CY 1972</u>		<u>CY 1973</u>		<u>CY 1974</u>		<u>TOTAL</u>
	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	<u>Local</u>	<u>Foreign</u>	
GON	300		600		300		1,200
AID		800		1,200		800	2,800
TOTAL:	<u>300</u>	<u>800</u>	<u>600</u>	<u>1,200</u>	<u>300</u>	<u>800</u>	<u>4,000</u>

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c. Capacity of GON to Use Project Funds During Disbursement Period

The Minister of Public Works of Nicaragua has indicated to members of the Project Committee that the GON will provide on a timely basis the funds necessary to cover all the local costs of the project. This requirement will be translated into a covenant of the Loan Agreement.

With reference to the capacity of the GON to utilize all the project funds during the disbursement period, the Project Committee analyzed the performance of the Highway Department in our previous loans, the in-service training carried out by the Ministry with the assistance of U.S. Engineers of the Bureau of Public Roads during the past decade and the results obtained from such a program and reached the conclusion that the Executing Agency has the capacity to use, on a planned basis, the project funds within the 3-year disbursement period contemplated. There is no reason to believe that with the additional technical assistance and training the Executing Agency will have any difficulty in obtaining a high capacity to continue a penetration roads betterment program for years to come.

d. Impact of Project on U.S. Balance of Payments

Since the GON has agreed to finance all local costs of the project, A.I.D. funds will be used exclusively for eligible foreign costs.

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Most of the loan funds will be used to cover the costs of goods and services from the United States. The list of equipment is based on specifications of U.S. standards which have been used for the past 25 years in Nicaragua. In this case it is expected that procurement will be made from the United States.

During the years 1967-68-69-1970, Nicaragua's propensity to buy U. S. exports with foreign exchange earnings was in the range of .40.

The U.S. balance of payments with Nicaragua should, with this project, receive additional compensation through the increased purchases of capital goods and spare parts to be used in the project, offering opportunities for the export of U.S. products.

e. Prospects of Repayment

Repayment of the Loan will be an obligation of the Republic of Nicaragua. The Government of Nicaragua is current in meeting its external debt service. Nicaragua's medium and long-term external public debt is approaching US\$177 million. The USAID expects it to increase over the next decade. The annual debt service obligation is currently about \$25 million and in this decade it is expected to increase as drawdowns accelerate, grace periods expire and the effects of higher interest rates are felt. However, this increase is expected to be more than offset by increases in the foreign exchange earnings.

Foreign exchange earnings now approximate \$178 million annually. Even allowing for fluctuations in returns from cotton, coffee, meat production and fishing which represent 54% of the total, the foreign exchange earnings are expected to rise gradually in the future.

Consequently it appears that the ratio of debt service to export earnings may stabilize at around 15% throughout the amortization term of this loan, providing ample foreign exchange cover.

It therefore appears that there are reasonable prospects of repayment. For more detailed information on the Economic Panorama of Nicaragua see Annex IV.

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f. Conclusion

In consideration of the fundamental importance of this project which will stimulate a more rapid development of some rural areas of Nicaragua and in view of the evidence of self-help on the part of the GON which is willing to take up the total amount of the local costs, and the fact that this project has a high priority in the GON plans, as recently submitted to the CIAP and the expressed desire of A.I.D. to help in the development of agricultural production in Nicaragua the USAID concludes that the A.I.D. financing requested is fully justified.

D. Engineering and Technical Analysis1. Engineeringa. Planning and Layout

All engineering will be done by the staff of the Highway Department, and will consist of the following operations:

- (i) Field survey of road location, including collection of horizontal and vertical alignment, soils, construction materials, and drainage data. Aerial photos and topog maps are used to assist where changes in location are required.
- (ii) Plotting centerline in plan and profile.
- (iii) Establishment of gradeline.
- (iv) Location and designation of culverts, bridges and lines channels.
- (v) Staking of road centerline and drainage structures.

b. Direction of Construction Activities

All construction work will be under the direction of a Department resident engineer.

c. Supervision

In the event that the services of BPR are not available (see P. 27) a consulting engineering firm will be employed for supervision of construction and will be responsible for approval of the engineering plans and layout and work actually performed, and will certify to its adequacy prior to disbursement of project funds.

2. Method of Construction

The work will be performed by the forces of the Highway Department under the direction of Department engineers and under the general supervision of a consulting engineer.

The work to be undertaken includes earthwork, installation of drainage structures, construction of bridges, and placement of a granular surface course as required to bring the roads to all-weather status. There will be considerable difference in the amount of work needed from section to section, varying from merely reshaping the road crown, cleaning drainage ditches and applying a surface course, to complete reconstruction where needed to eliminate sharp curves and steep grades. Disbursement of funds will be on a price per kilometer approved by AID for each section before construction starts on that section.

3. Analysis of Cost Estimate

The estimated cost of the project is based on preliminary plans and studies made during the feasibility study. Detailed studies of each road section were made in which various types of treatment were considered. Cost estimates were then developed for the work necessary to bring each section to a satisfactory all-weather condition. An excellent check on these costs has just become available.

On the Camabocho Project being financed by BID Loan 63/SF-NI the Highway Department recently completed a 20 kilometers pilot project of all new construction with gravel surface and a 6 meter roadway. Work was done by force account, and under the supervision of the BPR and guidance of BID accurate cost records were kept. The total cost for the 20 kms section was \$430,816, or an average cost of \$21,541 per km.

In Zone A the average cost per kilometer for the betterment work proposed is estimated at \$15,741, and in Zone B at \$19,530. Specifications are similar except that the Camabocho Roads have a crown width one meter wider than proposed for this project.

On the basis of the preliminary plans as prepared for the type of betterment proposed and the estimated costs as given, the requirements of Section 611 have been met. (See Annex III, Exhibits 7 and 8)

#### 4. Highway Maintenance

All maintenance of highways and roads is performed by the Highway Department under the Division of Maintenance and Production Roads. The country is now divided into four (4) regions, each under the direction of a maintenance engineer and with a maintenance yard and repair shop. The GON expects to receive a road maintenance loan of \$3.2 million from BID during the fourth quarter of 1972.

This loan project will be for the purpose of generally upgrading the maintenance capability of the Highway Department, particularly for secondary roads. Under this project four new main and ten auxiliary camps will be established, maintenance equipment will be purchased, and technical assistance provided in the fields of equipment maintenance, field maintenance operations and financial administration.

It is a recognized fact throughout Central America that Nicaragua has done an outstanding job of highway maintenance. It is expected that with the expanded facilities and new equipment the new as well as existing roads will receive adequate maintenance.

5. Equipment Maintenance and Repair

Each maintenance division headquarters has a shop which takes care of preventative maintenance and minor repairs. Major repair and overhaul work is done in the Department's main shop in Managua.

Some new shop tools and equipment will be purchased in this and the BID loan for the division and main shops and technical assistance training will be provided in the BID loan. With this additional training and equipment the Department shops will be adequately stocked and staffed to provide satisfactory service to both maintenance and construction equipment.

6. Technical Feasibility of Project

Traditionally, the Maintenance Division of the Highway Department has constructed and improved the penetration class roads on a time available basis. Also, the Department has done a considerable amount of force account construction over the last ten years. Outstanding examples are the two A.I.D. road loans for a total of \$8 million which resulted in the construction of 268 kms of departmental roads. Since 1966 the Department has placed more emphasis on feeder roads, using budgetary funds supplemented by user contributions. This work has also been done by force account. Thus, the Department has built up a construction capability in the engineering, construction superintendent and foreman, and equipment operator fields which is no doubt unique in Latin America.

Recently, the Ministry of Public Works received approval from BID for the completion of the Camabocho Project by force account. This approval was granted after the Highway Department demonstrated that it could carry out construction of a satisfactory quality at a considerable saving in cost when compared to contract construction.

The Mission is convinced that the Highway Department has the capacity and capability to satisfactorily carry out the project as proposed, and that the construction of the lower standard penetration roads by force account is the cheapest and most efficient method for Nicaragua.

Section III - LOAN IMPLEMENTATIONA. Execution Plan and Schedule

Assuming loan authorization by June 30, 1971, the Loan Agreement can be negotiated and signed by September 30, 1971. Satisfaction of conditions precedent may be completed by November 15, 1971. The following tentative schedule was discussed during preliminary negotiations with the Minister of Public Works:

- |  |                    |
|--|--------------------|
| 1. Contracting of consultants acceptable to AID  | September 30, 1971 |
| 2. Bid documents for equipment approved by USAID | November 15, 1971  |
| 3. Award is made and L/Comm opened               | February 15, 1972  |
| 4. Initial equipment delivery                    | July 15, 1972      |
| 5. Betterment construction scheduled to start    | August 1, 1972     |

B. Execution and Monitoring Responsibilities1. The Ministry of Public Works

The Highway Department of the Ministry of Public Works will be responsible for the execution of the project. It will be responsible for consultant selection, contracts negotiations and contract administration throughout the execution period, including the approval of the progress reports and certification of payments. It will also prepare and submit for AID approval a final list of the equipment to be purchased with loan funds.

2. The USAID

The USAID Chief Engineer will have the monitoring responsibility of this project. His office will approve all contracts related to this project whether or not financed with loan funds. Specific approval of the Chief Engineer will be required for consultants and consultant contracts, invitation for bids, procurement contracts, detailed scopes of work and cost breakdown, progress reports and final reports. The Offices of the USAID Controller and Capital Resources Development will backstop the Chief Engineer in matters within their expertise.

C. Major Implementation Steps

1. Betterment Construction

- a. Engineering data, including construction schedule, are submitted to USAID for approval.
- b. USAID approves data and schedules.

2. Technical Assistance and Training

- a. Ministry of Public Works submits to USAID detailed plan for technical assistance and training.
- b. USAID approves detailed plan for technical assistance and training and establishes disbursement procedures.

3. Reporting

- a. Monthly progress reports by consultant received by USAID through the Ministry of Public Works. The initial report on each road should indicate the type of equipment at a given site and its projected use.
- b. The final report shall be prepared by the consultant and submitted to USAID through the Ministry of Public Works.

4. Joint Evaluation

USAID with the Ministry of Public Works will make a joint evaluation of the progress of the Project every six months from the start of the betterment construction.

5. Measures to be taken by GON for the Continuation of the Program

The GON shall submit its plans for the continuation of the program including the priorities based on additional feasibility studies for the second phase within 18 months after the date of execution of the Loan Agreement.

D. Implementation Procedures

1. Supervision

Considering that the Minister of Public Works has requested that personnel of the "Bureau of Public Roads" (BPR) currently engaged in providing technical assistance to the Ministry, be retained to approve engineering plans, supervise construction and certify payments, the Project Committee did not have any objection to such procedure which had given satisfactory results in previous AID loans. A waiver in accordance with M.O. 1425.1 will be requested to permit use of BPR personnel on this project.

During preliminary negotiations the Minister was advised however, that if such services could not be obtained under an expansion of the existing agreement with the BPR, provision would have to be made for the contracting of an A & E firm satisfactory to AID.

2. Procurement

The professional services to be included in this project and financed under the loan will be procured by the Borrower in a manner consistent with AID Manual Order 1425.1 or the Capital Projects Guidelines (M.O. 1442.1). Appropriate attachments to the First Implementation Letter will be provided to assure compliance by the Borrower, particularly in the use of dollar funds for procurement from eligible countries.

3. Disbursement

Disbursement of loan funds for project dollar cost will be effected through the AID Letter of Commitment procedure or through other customary AID procedures, as appropriate.

4. Reporting

The USAID does not intend to request other types of reports directly from the Executing Agency except for a Global Evaluation Report and Shipping Reports when the importation of commodities is included in a Consultant's contract. However, the USAID will insist upon receiving the Consultant's reports through the Executing Agency and with the comments of such agency.

E. Terms, Conditions, and Covenants

1. Terms

The following terms are recommended for a loan to the Government of Nicaragua not to exceed \$2,800,000:

Repayment in 40 years including a grace period of 10 years. Interest 2% during grace period and 3% thereafter.

Currency of Repayment: U.S. Dollars

2. Conditions:

Prior to the first disbursement or issuance of disbursement documents the Borrower shall submit in form and substance satisfactory to AID:

(a) Evidence of arrangement for engineering services for certification of payment, & construction supervision;

(b) A schedule indicating dates and amounts of annual contributions totalling not less than the equivalent of \$1,200,000 which the Borrower will contribute to the Project over a period of 3 years from the date of execution of the Loan Agreement;

(c) A national secondary road maintenance plan and evidence of arrangements for the procurement of equipment organization, training and financing required to implement said plan, including the maintenance of the equipment;

(d) Borrower's agreement to furnish AID all plans, specifications, construction schedules, bid documents and contracts relating to the project and any modification therein whether or not the goods and/or services to which they relate are financed under the loan.

3. Covenants:

(a) Procurement of goods and services with loan funds will be made from AID Code 941 countries including CACM countries other than the Borrowing country;

(b) The Borrower will provide the rural areas to be served by the penetration roads included in this project the government services required for the economic and social development of the areas;

(c) the Borrower shall maintain the roads included in the project and provide sufficient separately budgeted funds to assure maintenance of said roads for a period of ten years after completion;

(d) All aspects of this project which require changes to the natural environment of the project areas will be considered for potential damage to this environment. Whenever necessary, a plan for the minimizing and controlling of ecological damage will be drawn up for each project area.

4. The loan shall be subject to such other conditions and covenants as AID may require.

Section IV - ISSUES

All the issues raised at the CAEC meeting have been treated during the Intensive Review and the answers of the Project Committee appear in Annex II, Exhibit 2.

Of all the issues which required detailed treatment the Project Committee has retained the following:

A. Force Account Construction

Over a 20-year period Nicaragua has gained considerable experience in highway construction by both contract and force account methods. One difficulty with contract work has been in getting a sufficient number of qualified firms to bid so that competition would be assured. Some local contractor capability in road construction has been developed but this element usually joint ventures with foreign firms, or works as sub-contractors.

From this experience a policy has evolved which the Ministry of Public Works proposes to follow for the next several years. This would be that construction of major highway projects would be carried out by private contractors while the lower class penetration roads would be improved and/or built by the forces of the Highway Department. The basic reason for the use of force account is economics and the Highway Department has clearly demonstrated that it can construct the lower class roads at a considerable saving in cost.

On the Camabocho Project access roads in north central Nicaragua, being financed by BID, the first six sections totalling 104 kms were constructed by contract at an average cost of \$50,765 per km. A 20 kilometer pilot project in the same area was recently completed by force account at an average cost of \$21,541 per km. With the exception of an increase in the crown width from 5 to 6 meters the specifications were the same.

Under ordinary circumstances highway and road construction is done by contract with private firms, and construction by force account usually carried out only in special situations. The usual stated objections to force account construction are that it offers no incentive, and that there is a tendency to maintain too large an organization.

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On the part of the Nicaraguan labor force, skilled and unskilled, the scarcity of jobs is such that productivity is equal, whether the employer be private or Government. Over the years a pride in accomplishment has developed in the supervisory staff of the Highway Department which represents as strong a factor as the profit motive in contract work. As to the size of the organization, budgetary limitations along with careful monitoring by the supervising engineer have been effective in maintaining a proper balance.

In any case of force account construction, the specific situation must be evaluated in country and not on the basis of experiences elsewhere. When this was done in the case of the first two A.I.D. Highway Loans to Nicaragua the result was the successful force account construction of 268 kms of highway.

With respect to this particular loan AID is helping the GON build up the capacity of the Highway Department to carry out a continuous program of penetration roads betterment. In its physical nature and its financial plan this project is more apt to be successfully implemented by the force account method.

B. Agricultural Extension Services

In addition, during Intensive Review, the question of agricultural extension services was raised. It was deemed important to analyze the present services and the need for additional services required by the new areas. The following is a summary of the findings and recommendations of the Project Committee:

Various types of agricultural extension services are provided in the zones of influence of the project roads. The Ministry of Agriculture has the county agent type service as well as regional veterinarians. The National Bank through its rural credit programs also maintains agricultural technicians who provide advice and guidance to its borrowers. While not an extension type service, The National Institute for External and Internal Commerce (INCEI) maintains grain storage centers where farmers sell and/or store various grains.

Betterment of the project roads will make it possible for the extension type technicians to cover a larger area in the zone of influence as well as provide yearround service. Farmers will also be able to reach the grain storage centers at all times of the year instead of only during the dry season.

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Following is a tabulation showing the locations of the various offices described above:

<u>Zone "A"</u>	<u>Zone "B"</u>
<u>Ministry of Agriculture</u>	
<u>Extension Offices</u>	
Esteli Jinotega (20 kms from San Rafael)	Santo Tomás (21 kms from La Libertad)
<u>Regional Veterinarians</u>	
Esteli	Santo Tomás
<u>Zone "A"</u>	<u>Zone "B"</u>
<u>National Bank</u>	
<u>Agricultural Credit Offices</u>	
Esteli Yali La Concordia El Sauce	Santo Domingo
<u>INCEI</u>	
<u>Grain Storage Centers</u>	
Esteli Condega Yali El Sauce	Santo Domingo La Libertad

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The Loan Agreement will provide that the GON shall give adequate agricultural extension services to the rural areas included in the project.

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CHECKLIST OF STATUTORY CRITERIA

(Alliance for Progress)

In the right-hand margin, for each item write answer or, as appropriate, a summary of required discussion. As necessary, reference the section (s) of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed. This form may be made a part of the Capital Assistance Paper.

The following abbreviations are used:

FAA - Foreign Assistance Act of 1961, as amended.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1971.

MMA - Merchant Marine Act of 1936, as amended.

COUNTRY PERFORMANCE

Progress Towards Country Goals

1. FAA Sec. 208; Sec. 251 (b)

A. Describe extent to which country is:

(1) Making appropriate efforts to increase food production and improve means for food storage and distribution.

(1) The GON is continuing to make substantial efforts to increase food production and improve food storage and distribution facilities. AID Loan No. 524-L-022 (Basic Crops) required that the GON match the amount of \$9 million with its own funds. The GON is complying beyond the requirement. In addition the GON has received and is using Funds from the EXIMBANK to increase storage capacity. The GON has also signed a grant agreement with the USAID for a TC Program in marketing and distribution to improve food storage and distribution system.

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ANNEX 1, Exhibit 1

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- (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
  - (3) Increasing the public's role in the development process.
  - (4) (a) Allocating available budgetary resources to development.
  - (4) (b) Diverting such resources for unnecessary military expenditure (See also Item No. 16) and intervention in affairs of other free and independent nations. (See also Item No. 14).
- (2) The GON has created a favorable climate for foreign and domestic private enterprise and investment. Only the size of the markets and the scarcity of skilled human resources can be considered as limiting the participation of the foreign and domestic private investors.
  - (3) The public's role in the development process has been considerable in Nicaragua and the GON is actively attempting to stimulate further participation therein the GON is contributing cash to this project that will reach about 100,000 people in the rural area to be served.
  - (4) (a) The GON allocates a significant portion of its National Budget to activities related to Development. Twenty-five percent of total budgetary expenditures was allocated to investment.
  - (4) (b) Nicaragua does not appear to be making unnecessary military expenditures nor preparing to intervene in the affairs of any other free and independent nation.

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- (5) Willing to contribute funds to the project or programs.
  - (6) Making economic, social and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprises.
  - (7) Adhering to the principles of the Act of Bogotá and Charter of Punta del Este.
  - (8) Attempting to repatriate capital invested in other countries by its own citizens.
- (5) The GON is investing the total amount of local costs estimated at the equivalent of \$1.2 million.
  - (6) Nicaragua has initiated various programs tending to social and political reforms, tax collection improvement, additional taxes, changes in land tenure, reliability on property records. AID Loan No. 524-L-012 (Tax Improvement) has been a great help. Nicaragua recognizes the value of freedom of expression and of the press as well as the importance of individual freedom, initiative and private enterprise. See CFS for 1969 for additional information in this respect.
  - (7) Account has been taken of the Borrower's adherence to the principles of the Act of Bogotá and the Charter of Punta del Este.
  - (8) In following a course of political stability and in its efforts to promote economic development, Nicaragua gives an incentive to its own citizens, to repatriate capital.

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(9) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

(9) Account has been taken of the Borrower's responsiveness to the vital economic, political and social concerns of its people. Nicaragua is improving its educational system and its public health service.

B. Are above factors taken into account in the furnishing of the subject assistance?

Yes.

Treatment of U.S. Citizens

2. FAA Sec. 620 (c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?

(2) The Borrower is not known to be indebted to any U.S. Citizen in any such manner.

3. FAA Sec. 620 (e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

3. The GON has not taken any such action.

4. FAA Sec. 620 (c); Fishermen's Protective Act. Sec. 5. If country has seized, or imposed any penalty or sanction against any U.S. fishing vessel or account of its fishing activities in international waters.

4. The GON has not seized or imposed any penalty or sanction against any U.S. fishing vessel on account of its fishing activities in international waters.

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- a. Has any deduction required by Fishermen's Protective Act been made?
- b. Has complete denial of assistance been considered by A.I.D. Administrator?

- a. N.A.
- b. N.A.

Relations with U.S. Government and Other Nations.

- 5. 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?  
5. No productive enterprise which will compete with U.S. private enterprise in the U.S. is being financed by this project.
- 6. FAA Sec. 620 (i). Has the country permitted or failed to take adequate measures to prevent, the damage or destruction by mob action, of U.S. property?  
6. Nicaragua has not permitted this and has taken adequate measures to prevent such damage or destruction.
- 7. FAA Sec. 620 (j). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, in convertibility or confiscation, has the A.I.D. Administration within the past year considered denying assistance to such government for this reason?  
7. The GON has instituted the investment guaranty program in which guaranties were issued for operations amounting to more than \$25 million by the end of CY 1970.
- 8. FAA Sec 620 (q). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country?  
8. No.

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|---|---|
| 9. <u>FAA Sec. 620 (t)</u> . Has the country severed diplomatic relations with U.S.? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?                               | 9. Nicaragua maintains diplomatic relations with the U.S.   |
| 10. <u>FAA Sec. 620 (u)</u> . What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearage taken into account by the A.I.D. Administrator in determining the current A.I.D. Operating Year Budget? | 10. Nicaragua is not delinquent on its U.N. obligations.  |
| 11. <u>FAA Sec. 620 (a)</u> . Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?  | 11. Nicaragua does not furnish assistance to Cuba and has taken appropriate steps to prevent trade with Cuba. |
| 12. <u>FAA Sec. 620 (b)</u> . If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?  | 12. The Secretary has so determined.  |
| 13. <u>FAA Sec. 620 (f)</u> . Is recipient country a Communist country?   | 13. No  |
| 14. <u>FAA Sec. 620 (i)</u> . Is recipient country in any way involved in (a) subversion of, or military aggression against, the U.S. or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression?                 | 14. No  |

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15. FAA Sec. 620 (n). Does recipient country furnish goods to North Viet-Nam or permit ships or aircraft under its flag to carry cargoes to or from Viet-Nam?

15. Available information reveals no case of trafficking or permitting trafficking with North Viet-Nam.

#### Military Expenditures

16. FAA Sec. 620 (s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points to be coordinated with PPC/MAS.)

16. Approximately 11% of the budget goes for military expenditures. Foreign exchange resources spent on military equipment is minimal. No expenditure is made for the purchase of sophisticated weapons systems.

#### CONDITIONS OF THE LOAN

##### General Soundness

17. FAA Sec. 201 (d). Information and conclusion on reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

17. The proposed loan is legal under the laws of Nicaragua and the U.S. and its terms are considered reasonable for Nicaragua at this time.

18. FAA Sec. 251 (b) (2); Sec. 251 (e). Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multi-lateral plan, and the amount of the loan exceeds \$100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

18. A detailed feasibility study has been prepared for this project. The USAID has reviewed this study and finds the project to be economically and technically sound.

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19. FAA Sec. 251 (b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.
  20. FAA Sec. 611 (a) (1). Prior to signing of loan 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?
  21. 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 purposes of loan?
  22. FAA Sec. 611 (e). If loan is for capital assistance, and all U.S. assistance to project now exceeds \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?
19. Nicaragua is current in meeting its external debt service obligations. It appears reasonably certain that Nicaragua will repay the loan. The country's foreign exchange position warrants the conclusion that dollars will be available as needed for repayment.
  20. Preliminary engineering plans, specifications and cost estimates and detailed financial projections have been prepared and were the basis of the data in this paper. Estimates on which loan is based reasonably represent maximum level of U.S. assistance.
  21. Additional legislation is not required in order to execute this project as planned. The Loan Agreement will require congressional ratification but this is not expected to interfere with timely execution.
  22. Yes (See Annex 1, Exhibit 2)

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23. FAA Sec. 251 (b). Information and conclusion on availability of financing from other free-world sources, including private sources within the United States.

23. At the time authorization for this loan was requested, none of the international agencies expressed any interest in participating.

Loan's Relationship to Achievement of Country and Regional Goals.

24. FAA Sec. 207; Sec. 251 (a). Extent to which assistance reflects appropriate emphasis on; (a) encouraging development of democratic economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs, or (e) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and voluntary agencies; transportation and communication; planning and public administration; urban development; and modernization of existing laws.

24. (a) The betterment of the penetration roads will definitely encourage the development of economical, political and social institutions by giving to the rural population access to markets and centers of culture.
- (b) This project is aimed at reaching about 85,000 of the rural population. The small farmers to be reached primarily produce food crops, so that a benefit of the project should be increased food production.
- (c) The technical assistance and training aspects of the project will increase the availability of trained manpower.
- (d) By improving the penetration roads the Government will be able to give more adequate health services to the rural areas.
- (e) This project will have direct positive effects on the development of agriculture, transportation and communications.

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25. FAA Sec. 209. Is project susceptible of execution as part of regional project? If so why is project not so executed?  
25. No
26. FAA Sec. 251 (b) (3). Information and conclusion on activity's relationship to, and consistency with, other development activities, and its contribution to realizable long-range objectives.  
26. This activity is an integral part of the USAID and the GON rural development programs and is aimed at raising the standard of living in the countryside and the development of the agricultural sector.
27. FAA Sec. 251 (b) (7). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.  
27. Through assisting in the development and modernization of the rural sector the activity to be financed will contribute to the achievement of self-sustaining growth.
28. FAA Sec. 281 (a). Describe extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic, private and local governmental institutions.  
28. The nature of this project will assure maximum participation on the part of the people in the economic development of Nicaragua.
29. FAA Sec. 281 (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 civic education and training in skills required for effective participation in governmental and political processes essential to self-government.  
29. The project is in response to a demonstrated need and desire of the people of rural Nicaragua, utilizes the country's intellectual resources to encourage institutional development and supports civic education.

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30. FAA Sec. 601 (a). Information and conclusions whether loan 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.
  31. FAA Sec. 619. If assistance is for newly independent country; is it furnished through multilateral organizations or plans to the maximum extent appropriate?
  32. FAA Sec. d 251 (h). Information and conclusion on whether the activity is consistent with the findings and recommendations of Inter-American Committee for the Alliance for Progress in its annual review of national development activities.
  33. FAA Sec. 251 (g). Information and conclusion on use of loan to assist in promoting the cooperative movement in Latin America.
30. The project will contribute favorably to each of these goals with the exception of (c) savings and loan associations and (f) labor unions, which are not applicable to this sector of the population in Nicaragua.
  31. Nicaragua is not a newly independent country.
  32. This activity is consistent with the findings and recommendations of the recent CIAP reviews held in March 1971, in Washington, D.C., which called for better planning and project preparation.
  33. This loan will be used directly in the betterment of penetration roads in Nicaragua. It will assist indirectly in promoting the success of agricultural crops in the areas served.

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34. FAA Sec. 209; Sec. 251 (b) (8). Information and conclusion whether assistance will encourage regional development programs, and contribute to the economic and political integration of Latin America.
34. The improvement which are expected to result from this loan should have a favorable impact on the regional development program particularly in the field of marketing and distribution of agricultural commodities. The incorporation of the rural population into the development process will contribute to the economic and political integration of Latin America.

Loan's Effect on U.S. and A.I.D.  
Program

35. FAA Sec. 251 (b) (4); Sec. 102 Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving the U.S. balance of payments position.
35. This loan project will have a favorable impact on the U. S. economy in that a large part of the goods and materials financed thereunder will be from the U.S. and will be in addition to regular purchases in past years. (See Section V.E.).
36. FAA Sec. 601 (b). Information and conclusion on how the loan will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
36. Loan funds will be used to purchase goods, materials and services through U.S. private enterprise.
37. FAA Sec. 601 (d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?
37. Yes, procurement of engineering and professional services will be made according to the new guidelines of the U.S. policy as announced by President Nixon.

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38. FAA Sec. 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and services financed by the loan.
38. U.S. small business will have a chance to participate in the furnishing of goods and services financed by the loan because all proposed procurement will be published in the Commerce Business Daily and AID Small Business Circular as specified in the AID Capital Guidelines.
39. FAA Sec. 620 (h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Block countries?
39. The Loan Agreement will provide that the assistance provided by this loan will not be used in a manner which promotes or assists foreign aid project of Communist-Block countries.
40. FAA Sec. 621. If technical assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.
40. This loan will finance the procurement of goods and services from private enterprises on a contract basis. The GON has requested that supervision of the Project be entrusted to "Bureau of Public Roads" of the U.S. Government\*. The BPR has a long experience in Nicaragua with the Highway Department and the specific conditions of the country. In the opinion of the GON this is the best possible service for a project of that kind.

\* The GON still refers to the Federal Highway Administration as the "BPR"

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41. FAA Sec. 252 (a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.

41. All of the loan funds will go directly to private enterprise with the possible exception of loan funded supervisory services which could be obtained from the "BPR" as mentioned in No. 40 above.

Loan's Compliance with Specific Requirements.

42. FAA Sec. 201 (d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter.

42. Yes.

43. FAA Sec. 603 (a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

43. Procurement of U.S. Government excess personal property is not contemplated.

44. FAA Sec. 604 (a). Will all commodity procurement financed under the loan be from U.S. except as otherwise determined by the President?

44. Procurement under the loan will be from the U.S. and other eligible countries as determined by the President of the United States.

45. FAA Sec. 604 (b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?

45. No bulk commodity procurement is contemplated under this loan.

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46. FAA Sec. 604 (d). If the host country discriminates against U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the U.S. on commodities financed by the loan?
46. Nicaragua does not so discriminate. The Loan Agreement will so provide.
47. FAA Sec. 604 (e). If off-shore 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?
47. No agricultural commodities or products will be procured with this loan.
48. FAA Sec. 611 (b); App. Sec. 101. If loan finances water or water-related land resource construction project or program is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962?
48. Not applicable.
49. FAA Sec. 611 (c). If contracts for construction are to be financed what provision will be made that they be on a competitive basis to maximum practicable?
49. The nature of the work to be done is more easily achieved by force account. One of the purpose of this loan is to improve the capacity of the Ministry of Public Works to carry on a continuous and progressive basis the program of betterment of penetration roads in Nicaragua.

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50. FAA Sec. 620 (g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property?
50. Assistance provided by this loan will not be used to compensate owners for expropriated or nationalized property and the loan agreement shall so specify.
51. 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.
51. Nicaragua will contribute funds to meet all of the local currency costs of the project. There are no U.S. owned foreign currencies available for the project.
52. App. Sec. 104. Will any loan funds be used to pay pensions, etc., for military personnel.
52. No.
53. App. Sec. 106. If loan is for capital project, is there provision for A.I.D. approval of all contractors and contract terms?
53. Yes. (See Summary and Recommendations.)
54. App. Sec. 108. Will any loan funds be used to pay U.N. assessments?
54. No.
55. App. Sec. 109. Compliance with regulations on employment of U.S. and local personnel for funds obligated after April 30, 1964 (Regulation 7).
55. Regulation 7 will be complied with.

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56. FAA Sec. 636 (i). Will any loan funds be used to finance purchase, long-terms, or exchange of motor vehicle manufactured outside the United States, or any guaranty of such a transaction? 56. No.
57. App. Sec. 401. Will any loan funds be used for publicity or propaganda purposes within U.S. not authorized by the Congress? 57. No.
58. FAA Sec. 620 (k). If construction of productive enterprise, will aggregate value of assistance to be furnished by U.S. exceed \$100 million? 58. No.
59. FAA Sec. 612 (d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release? 59. No.
60. MMA Sec. 901 (b). Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and takers) financed with funds made available under this loan shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. 60. All such requirements will be complied with and the loan agreement shall so require.

CERTIFICATION PURSUANT TO SECTION 611 (e)  
OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

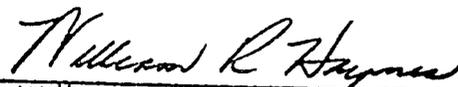
I, William R. Haynes, the principal officer of the Agency for International Development in Nicaragua, having taken into consideration, among other things, the maintenance and utilization of projects in Nicaragua previously financed or assisted by the United States, do hereby certify that in my judgment Nicaragua has the technical and human resource capabilities to effectively maintain and utilize the Capital Assistance Project, "Penetration Roads Betterment".

I base this certification, in part, on the evidence of successful utilization and maintenance of projects already completed such as the Rio Tuma Hydroelectric Project, the First Highway Construction Program, the Las Mercedes Airport, and on the successful experience of the Highway Department of the Ministry of Public Works under the guidance and training of the US Bureau of Public Roads.

The planning and studies for the subject loan were financed through Loan for Feasibility Studies No. 524-L-011 and the final data were verified in the field by technicians of the US Bureau of Transportation. During the Intensive Review for the projects, officials of the Ministry of Public Works were made fully aware of their responsibilities for maintenance of the project and full concurrence from the Coordinating Committee was received in support of the project.

In addition efforts were coordinated for the timing of this loan to coincide with the approval of a loan from the Inter American Development Bank to finance the purchase of road maintenance equipment for the Ministry of Public Works.

The Borrower can be expected to provide the financial, technical and human resources required to maintain and fully utilize the penetration roads improved with the help of this Loan.



William R. Haynes  
Director, USAID/Nicaragua

May 1971

DRAFT CAPITAL ASSISTANCE LOAN AUTHORIZATION

Provided from: Alliance for Progress  
NICARAGUA: Penetration Roads Betterment

Pursuant to the authority vested in the Deputy U.S. Coordinator, Alliance for Progress by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan, pursuant to Part 1, Chapter 2, Title VI, Alliance for Progress of said Act, to the Government of Nicaragua ("Borrower") of not to exceed two million eight hundred thousand United States Dollars (\$2,800,000) to assist in financing the United States dollar and other eligible foreign costs of equipment, materials, technical assistance and cost of supervision of the first phase of a project of penetration roads betterment in Nicaragua covering approximately 218 kms and the building up of the capacity of the Borrower to carry out a continuing program of penetration road improvement. This loan shall be subject to the following terms and conditions:

1. Interests and Terms of Repayment

- (a) The Borrower shall repay the loan in U.S. dollars within 40 years from the date of the first disbursement under the loan, including a grace period of not to exceed 10 years.
- (b) During the grace period the Borrower shall pay an interest of two percent (2%) per annum on the outstanding balance and three percent (3%) per annum thereafter.

2. Conditions and Covenants

(a) Conditions

Prior to and as a condition precedent to the first disbursement or issuance of disbursement documents under the loan, the Borrower shall submit in form and substance satisfactory to A.I.D.:

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- (i) Evidence of arrangements for consultant engineering services for supervision of betterment construction and certification of payment.
- (ii) A schedule indicating dates and amounts of annual contributions totalling not less than the equivalent of \$1,200,000 which the Borrower will contribute to the Project over a period of 3 years from the date of execution of the Loan Agreement.
- (iii) A national road maintenance plan and evidence of arrangements for the procurement of equipment, organization, training and financing required to implement said plan, including the maintenance of the equipment.
- (iv) Evidence that the Borrower agrees to furnish AID, for AID's approval all plans, specifications, construction schedules, bid documents and contracts relating to the project and any modification therein, whether or not the goods and/or services to which they relate are financed under the loan.

(b) Covenants

Borrower shall covenant that:

- (i) All goods and services financed with loan funds shall be procured according to AID requirements;
- (ii) It will provide the rural areas to be served by the penetration roads included in this project the agricultural extension services required to develop their agricultural production above the subsistence level;
- (iii) It shall maintain the specific penetration roads included in this project and provide sufficient separate budget funds and adequate personnel to assure maintenance of said roads for a period of 10 years after completion.

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- (c) The Loan shall be subject to such other terms and conditions as AID may deem advisable.

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Deputy U.S. Coordinator  
Alliance for Progress

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Date

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QUESTIONS RAISED AT IRR - AND ANSWERS

1. Maintenance of the Project

The maintenance of this project is an integral part of the IDB financed Road Maintenance Project which is specifically geared to the maintenance of secondary roads. IDB loan funds will be used to finance the establishment of four (4) new maintenance camps and 10 auxiliary plants. One maintenance camp at Condega and at least two auxiliary plants, one at Yali and the other at La Sirena will be located in the zones served by the proposed AID Loan.

At a recent meeting with the IDB Chief of Transportation in Managua members of the Project Committee ascertained that the Secondary Roads Maintenance Program has taken into account the capacity of the GON to maintain not only the present mileage of all weather roads but also the roads projected in this loan, and the goals set by the Ministry of Public Works. Adequate provision will be made in the Loan Agreement.

2. Amount and Source of GON Contribution

The GON has agreed to cover all local cost of this project. The amount of this contribution which is estimated at the equivalent of \$1,200,000 will all be additive to GON budget.

3. Sufficiency of GON Contribution

The Project Committee has reviewed the cost estimates as revised by the U.S. Bureau of Transportation particularly the local cost component and finds that a sufficient amount of local currency will be made available by the GON to cover the local cost.

4. Economic Feasibility

A critical review of the economic aspects of Consultant's report on the roads was undertaken by Dr. Howard Lapin, Chief Technical Assistance Division, U.S. Department of Transportation.

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The results of this analysis are the following:

For the roads in Zone A - calculated on the basis of	10% : 2.6
	12% : 2.48
	14% : 2.3
For the roads in Zone B - calculated on the basis of	10% : 2.2
	12% : 1.9
	14% : 1.7

For more details see Annex III, Exhibit 2.

5. Pipeline - AID - IBRD - EXIMBANK - IDB - CABEL

As of June 1970 the pipeline from the above institution amounted to about \$ 88 million. Disbursements from 6/30/1970 to 3/30/1971 are estimated at \$ 40 million thus reducing the pipeline to \$ 48 million. New loans from IDB, CABEL and AID during CY 1971 will raise the pipeline to about \$ 80 million. At its present stage of development and in view of greater efforts on the part of the GON to emphasize implementation, the Project Committee feels that Nicaragua will be able to absorb the funds from international loans at a reasonable rate.

6. Meeting of Requirements of Section 611

The roads included in this project have been thoroughly studied. The technical engineering specifications meet the standards for this type of roads. The economic feasibility study made by competent consultants was reviewed by qualified US technicians and adjusted to meet the requirements of Section 611. The Project Committee has studied carefully the request of the Ministry of Public Works for Execution of the betterment construction by force account and has found it justified under the present circumstances. This, however, applies only to this first phase of the long-term plan. The Project Committee in making this finding took into account the policy statement of the Minister of Public Works that construction of major highway projects will be carried out by private contracts.

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## THE EXECUTING AGENCY: THE HIGHWAY DEPARTMENT

### Organization and Functions

The Highway Department was founded the 1st of January, 1940. It is the official organization in charge of planning, designing, building and up-keeping of the national highway system, and complementary works. It forms part of the Ministry of Public Works according to the national organization chart.

The last reorganization of importance made to the Department was in September 1969, when two of the six existing divisions, i.e.: Planning, Supervision and Studies, Administration, Maintenance, Feeder Roads, and Mechanical Up-Keep., were merged. The two divisions which were integrated were the Feeder Roads and the Maintenance Divisions, forming the Feeder Roads and Maintenance Division, with numerous obligations and similar objectives.

At present, to be able to fulfill its commitments successfully the Highway Department is organized in five divisions (See Annex II, Exhibit 2): Planning Division, Supervision and Studies Division, Feeder Roads and Maintenance Division, Administration Division, and Mechanical Maintenance Division.

All and each of the Divisions that form the Department, have a specific and necessary function to efficiently achieve the objective of the Institution, which is precisely to endow the country of an efficient functional road system that will positively help the economic and social development of Nicaragua. The functions are briefly described as follows:

### PLANNING DIVISION:

This Division has the responsibility of evaluating the alternatives of investments, proposing new projects in accordance with the national development plans, carrying out investigations on basic information for planning purposes and maintaining an adequate control on the programming of construction works. Furthermore, amongst its specific obligations, they have to evaluate the economical justification of projects that serve as base for obtaining loans from international loan agencies, for the construction of the roads.

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### SUPERVISION AND STUDIES DIVISION

The Supervision and Studies Division is in charge of the execution of all the road construction sub-programs financed by foreign loans, and a few other important roads.

Its functions are to programme, organize, direct and supervise the execution of the works; prepare documents to establish the basis of the competitions and organize bids for the projects. Request reimbursement from the loans for the amounts disbursed to carry out the projects, and cooperate in any other Government activity related to the transportation sector and other national scope activities. To comply with its obligations they make use of the following sections: performances under contract, studies and structures, payments and reimbursements, and materials standards.

Besides being responsible for the routine work related with the conservation, repairing and improving of the roads of the country, this Division also has the responsibility of executing the road programmes related to feeder and penetration roads.

Through this division, the Highway Department colaborates in the joint contracts, with the private and municipal sector in the construction of feeder roads so necessary for the economic and social development of the country.

### ADMINISTRATION DIVISION

The Administration Division has the responsibility of solving satisfactorily the administrative problems which are presented to them by the staff of the Highway Department. They also handle, distribute and control the funds which are used to carry out the road projects, and also the great number of activities related to the administrative complex.

Besides the above, they are also in charge of the office materials and other administrative equipment warehouse.

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### MECHANICAL MAINTENANCE DIVISION

The Mechanical Maintenance Division is the center of all the activities of the Institution, since they handle the repair shops whose activities are geared to the tasks given of the Highway Department, which depends on the Division for the maintenance not only of the construction equipment but of all the office equipment of the Highway Department.

### DESCRIPTION OF THE HIGHWAY SYSTEM

At the end of 1970 Nicaragua had 12,985 kms. These figures for 1970 are a result of a better knowledge of the road system, due to investigations which are carried out by the roads inventory program. Distributed in the following way:

Paved	1,235 kms
All Weather	4,817 kms
Dry Season	6,917 kms

Most of these roads belong to the Pacific sector of the country, mainly in the departments of Chinandega, Leon and Managua. This is due to the density of the population, its nearness to the capital of the country, international traffic ports, topographic configuration, ecological conditions and the high productivity of its soils. This has contributed to the channeling of almost all the financial resources and economical factors to this region, including funds for road construction.

Consequently it can be said that the Pacific Zone is better served due to its topographic conditions.

The Central Zone has one kilometer of road for every 148 inhabitants, being Esteli and Chontales the best served departments. Considering its agriculture and cattle potential, this zone is road poor.

The Atlantic Zone has very special characteristics. The road system has been built mainly by foreign mining companies, some of them being used as private roads; the only road constructed under a Government of Nicaragua-USA program is the Rama highway. Besides, the Rio San Juan Department has no roads that can be

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considered of any economic or social importance, its transportation needs are poorly met by Lake Nicaragua and small rivers services.

During the present year engineering studies for the construction of the Acoyapa-San Carlos (130 kms) project are being made. This project is in the Rio San Juan Department and will form part of the Central American Road System.

The road construction works carried out during the last years by the Highway Department is shown in Chart No. 1:

CHART NO. 1

NICARAGUA: EVOLUTION OF THE ROAD SYSTEM

Type of Road	1950	1955	1960	1965	1967	1968	1969
Asphalted or Paved	235	280	669	811	1147	1185	1141
All Weather	255	707	1868	2114	3691	3856	4420
Dry Weather	100	2700	3600	3550	5140	5136	4641
	590	3687	6137	6475	9981	10177	11202

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ANALYSIS OF THE PRESENT CAPACITY OF THE NATIONAL  
ROAD MAINTENANCE SYSTEM

General:

The purpose of the road maintaining system is to keep them in the best conditions possible and with the same characteristics as when they were built. For this purpose the Highway Department has classified its system in paved roads, gravel, all weather, and dry season roads. Chart No. 2 shows this classification of the system for 1969.

CHART NO. 2

NATIONAL ROAD SYSTEM

<u>Type of Road</u>	<u>1969</u>
Paved or Asphalted	1,141
Gravel and All-Weather	4,420
Dry Weather	4,641
Total Length	11,202

In order to foresee the dynamic growth of the road system and to be able to provide adequate maintenance, the Highway Department, through its Feeder Roads Maintenance Division, has developed its organization Chart (See Annex II, Exhibit 2) and for that purpose the country has been divided into eight zones which are the following:

West Zone	North-East Zone
South Zone	West Zone
Central Zone	Muy Muy Zone
North Zone	Atlantic Zone

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Considering that most of the improvement and building of feeder roads is towards inadequately exploited regions, where there is great economical development potential, the Highway Department decided to transfer or build new main and auxiliary camps, which will help to complete their projects with success, and also to provide the new roads and the existing ones with adequate maintenance service. The following is a list of the main and auxiliary camps existing and projected for the coming five years (see Charts No. 3 and 4).

CHART NO. 3

MAIN CAMPS

Existing

Nandaime  
Managua  
Leon (moved to:)  
Sébaco  
Ducualí  
Tocolostote

Projected

Nandaime  
Managua  
Chinandega  
Jinotega  
Ducualí  
Acoyapa  
Muy Muy  
Puerto Cabezas

CHART NO. 4

AUXILIARY CAMPS

Existing

Calabazas  
Jicaral  
La Sirena  
Ocotal  
Susucayan

Projected

Jicaral  
La Sirena  
Ocotal  
Susucayan

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Existing

La Virgen  
Pica Pica  
Diriamba  
Masaya  
Tamarindo  
Tom Valle  
La Gorra  
Puertas Viejas  
Asturias

Somotillo  
Achuapa  
San Pedro del Norte

Projected

La Virgen  
Pica Pica  
Diriamba  
Masaya  
Tamarindo  
Tom Valle  
La Gorra  
Puertas Viejas  
Asturias  
Tocolostote  
Santo Domingo  
Siuna  
Limbaica  
San Pedro del Norte  
Santa Fé

The location can be seen in the attached map (Fig. No. 3) which shows the zones divisions and also the main and auxiliary camps.

Present Maintenance Capacity

According to the roads classification previously mentioned, the following maintenance operations are done: to all weather roads, to paved roads and sealing operations, to dry weather roads.

To estimate the maintenance of all weather roads it is estimated that in the conformation operation, a patrol or motor grader moves 10 kms per day, and that this equipment will work a total of 110 kms per fortnight, that is, that the 110 kms will be conformed once every 15 days, which gives a total of 40 patrols required. In addition to this equipment, it is estimated that each zone needs the following:

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Per Zone

1 D7E Tractor  
1 D6B Tractor  
1 Front Loader 1 3/4 yds.<sup>3</sup>  
6 Trucks 4 yds.<sup>3</sup>  
1 Water Truck  
1 12 ton 3 Wheel Roller  
1 Scout Station Wagon  
2 Pick-Up's  
1 Scraper

Six Zones

6 D7E Tractors  
6 D6B Tractors  
6 Front Loader 1 3/4 yds.<sup>3</sup>  
36 Trucks 4 yds.<sup>3</sup>  
6 Water Trucks  
6 12 ton 3 Wheel Roller  
6 Scout Station Wagon  
12 Pick-Up's  
6 Scrapers

It is calculated that this equipment can make small repairs, such as filling of holes, repairing of small sections at approximately 1½ to 2 kms per day. Only the six existing zones are mentioned now; but it is estimated that two more zones will be added in the near future.

The following equipment is needed for the maintenance of the paved roads:

2 Crushing Machines  
1 Traxexcavator  
1 D7E Tractor  
1 Front Loader  
8 Trucks, 6 yds.<sup>3</sup>  
1 Water Truck  
2 Dempster Trucks  
1 Chips Spreader  
2 Asphalt Spreader Trucks  
2 8 to 10 ton 3 Wheel Rollers

Dynamiting Equipment

2 365 c.c. Compressors  
6 Pneumatic Drills

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Working only during the dry season, this equipment can cover 160 kms per year; that means that with two sets of the same equipment 320 kms per year can be repaired. Following the recommendations of our laboratory, that is applying asphalt to the surface of the road every five years, these two sets of equipment, could cover 1,600 kms in five years, which would be enough to cover the road system projected for 1973.

For the maintenance and crack repairing in the asphalt cover the following equipment will be needed:

<u>Per Zone</u>	<u>Six Zones</u>
3 Trucks, 4 yds. <sup>3</sup>	18 Trucks, 4 yds. <sup>3</sup>
3 Vibrator Rollers	18 Vibration Rollers
1 Scout Station Wagon	6 Scout Station Wagons
4 Farm Tractors	24 Farm Tractors
4 Rotation Mowing Machines	24 Rotation Mowing Machines
3 Pick-Ups	18 Pick-Ups

For the maintenance of the dry weather roads, it will be done at least one a year, preferably at the end of the rainy season. This repairing will be done with the same equipment used for building of all weather roads, and also some old equipment.

Besides the above mentioned equipment, the following support equipment is needed for each zone:

- 1 Scout Station Wagon (Zone Engineer)
- 2 Scout Station Wagons (for Foremen)
- 1 Greasing Truck
- 1 Pick-Up (Chief Mechanic)
- 1 Pick-Up (Engineer Group)
- 1 Scout Station Wagon (Mechanic in Charge)
- 1 Scout Station Wagon (Time in Charge)
- 2 Dempster Trucks
- 2 Fuel Trucks

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Besides the previously mentioned activities there are two working groups for the paved roads as follows:

Marking Brigade

2 Pick-Ups  
1 Signal Transit Machine

Platform Scales Brigade

5 Fixed Platform Scales  
2 Movable Platform Scales  
2 Pick-Ups

Chart No. 5 shows the present equipment and the needs for the road system for 1969. You may note that there is a great deficiency, mainly in patrols, 8 and 4 cubic yard trucks, D7E tractors, pick-ups, and Scout station wagons. Chart No. 6 shows equipment acquired by the Highway Department in the last seven years.

Chart No. 6 was made taking Chart No. 5 as a guide, which shows the purchases made by the Highway Department during the last seven years. Considering that this equipment is seldom worked to its full capacity, it is considered that it has a life of seven years. However, the Project Committee has taken more conservative view, and calculated the depreciation of the equipment over a period of five years.

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**BUDGETS**  
**HIGHWAY DEPARTMENT AND MINISTRY OF PUBLIC WORKS**  
(In Córdoba)

F. Y.	Division		Total for Department	Ministry of Public Works
	Maintenance	Production Roads *		
1965	16,526,422	--	105,203,153	117,417,623
1966	16,533,835 M 2,710,000 C	--	140,282,263	164,562,222
(total):	19,243,835			
1967	15,552,220 M 4,393,350 C	--	127,911,945	162,759,884
(total):	19,945,570			
1968	11,940,240	4,393,350	99,139,888	130,348,978
(total):	<u>16,333,590</u>			
1969	10,669,924	6,176,350	73,182,800	104,293,121
(total):	<u>16,846,274</u>			
<u>Production Roads and Maintenance **</u>				
1970		12,499,341	80,520,294	94,234,357
1971		17,767,504	91,301,024	133,438,734
1972	Draft Budget	22,000,000		

Highways to be Maintained - Km.

Type	1965	1970	1971
Paved	875.1	1,139.2	1,306
Gravel	557.7	339.1	--
All Weather	1,334.8	2,479.8	4,269
Dry Weather	<u>3,550.8</u>	<u>5,105.0</u>	<u>5,474</u>
TOTAL:	6,317.6	9,063.1	11,049

Notes:

- M & C Are separate budget line items.
- M Maintenance.
- C Construction of Penetration Roads
- \* Division of Production Roads was established at beginning of FY 1968.
- \*\* Division of Maintenance, and Division of Production Roads combined into Division of Production Roads and Maintenance at beginning of FY 1970.

MINUTES

Export-Import Bank - AID Liaison Group

811 Vermont Avenue, N. W. - Room 1275

November 17, 1969

PRESENT: Export-Import Bank  
Seymour Pollack

AID  
Harold Folk

The Eximbank representative stated that the Board of Directors had considered the applications listed below and decided to return them to AID for the reasons indicated. (See Agenda of November 17, 1969)

Nicaragua - <u>Government of Nicaragua</u> (Penetration Roads)	\$5.4 million
El Salvador - <u>Government of El Salvador</u> (Feasibility Studies)	\$1 million
Honduras - <u>Government of Honduras</u> (Agrarian Reform)	\$3.5 million

Due to the need for concessionary repayment terms, the Bank has decided to return these applications to AID.

Bolivia - <u>Government of Bolivia</u> (Highway Project #5)	\$14 million
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In view of the need for concessionary repayment terms and Bolivia's difficulty in repaying the Bank's existing loans, the Bank feels that this application is more appropriate for consideration by AID.



INTER-AMERICAN DEVELOPMENT BANK  
WASHINGTON D. C. 20577

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Exhibit 2  
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CABLE ADDRESS  
INTAMBANC

November 25, 1969

Mr. Robert Kanchuger  
Bureau for Latin America  
Office of Development Resources  
Agency for International  
Development  
Department of State  
Washington, D.C. 20523

Dear Mr. Kanchuger:

With reference to your letter dated October 9, 1969, regarding a proposed loan to the Government of Nicaragua to assist in financing the first phase of the Road Department's long-range Plan for Penetration Road Betterment.

The Bank loan program for Nicaragua does not foresee the participation of the Bank in any project of this type, though we do have under study a project for financing, in part, the maintenance of the rural road system of Nicaragua. The resources of the proposed IDB loan would be mainly used to purchase road maintenance equipment. In addition, this equipment would assist in maintaining the roads financed with the resources of the IDB loan 63/SF-NI.

In view of the above, the Bank does not consider that the project under study by AID would in any way duplicate our efforts in Nicaragua, but rather complement them.

Sincerely yours,

Assistant Program Advisor



INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

1818 H Street, N.W., Washington, D. C. 20433, U.S.A.

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EXHIBIT 2  
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October 28, 1969

Mr. Robert Kanchuger  
Bureau for Latin America  
Office of Development Resources  
Agency for International Development  
Washington, D.C., 20523

Dear Mr. Kanchuger:

Referring to your letter of October 9, 1969, I am writing to advise you that the Bank is not interested in considering for financing the Government of Nicaragua's Penetration Road Betterment project.

Best regards,

Sincerely yours,

Gerald Alter  
Director  
Western Hemisphere Department

Summary of DOT (TPI-53) Evaluation of  
 Nicaragua Feeder Roads Projects,  
 Esteli and Chontales Regions, 1971

Findings

1. The proposed feeder-road improvements in the two project areas were redesigned to total 211 km of engineered gravel roads, and 7 km. of low-type gravel road. The benefit/cost ratio calculations for the two zones are as follows, at three annual discount rates:

	<u>10%</u>	<u>12%</u>	<u>14%</u>
Zone A, Esteli	2.9	2.7	2.4
Zone B, Chontales	1.8	1.6	1.4

The opportunity cost of capital for infrastructure in Nicaragua is assumed to be about 12%. Residual values of the agricultural and road improvements were omitted from the B/C calculations.

These figures apply to a road design, for the greater part of the total length of the projects, of 5m of compacted gravel surface. All road improvements have been scheduled in the B/C calculations over a two-year construction period.

It is essential that the GON undertake seriously the responsibility to maintain the roads over their service life so that full benefits may be realized.

2. In summary, the findings as presented in Table 1 show the following:

For Zone A

Total length	167.3 kms.
Construction cost	\$2,988,000 or 20,923,000 cordobas
Cost per km.	\$17,900 or 125,100 cordobas
Annual incremental maintenance Cost	\$7,529 or 52,700 cordobas
Cost per km.	\$45 or 315 cordobas

For Zone B

Total length	49.5 kms.
Construction cost	\$1,177,000 or 8,241,000 cordobas
Cost per km	\$23,800 or 166,500 cordobas
Annual incremental maintenance Cost	\$2,228 or 15,592 cordobas
Cost per km.	\$45 or 315 cordobas

Assumptions

1. The highway system of Nicaragua as amplified by the improved Feeder Road systems will enhance the economic complementarity of its regions so that each will produce more nearly in accordance with its comparative advantage in future years: e.g., we assume that Zone B in Chontales will export only cattle and dairy products, and that grains in that zone will serve as food input for people and animals in the Zone. Therefore, no cash benefit is taken for grains in Zone B in future years, nor are costs attributed to incremental grain production in the Zone.
2. Zone A, with its drier weather, will continue to be a region of mixed agriculture and cattle-raising. More intensive use of the land for pastures will apply, requiring supplemental feeding of the cattle in dry months.
3. The population of Nicaragua will continue to increase at  $3\frac{1}{2}$  percent per year. We projected the land requirements for local food production allowing for reasonable increases in production per land unit (manzana). Following this requisite minimum in each year, we calculated the remaining area which could be used for export crops. The Consultant's figures on current production per manzana of various types of crops at the present time were accepted. We also made use of independent estimates (the AID Regional Development Specialist and LSU Team in Managua) to estimate that the livestock density level at present is 0.2 per mz in the San Nicolas feeder-road area, 0.33 in the rest of Zone A, and 0.4 in Zone B. We projected to higher levels of livestock intensity by rational herd-growth projection techniques to levels of .33 in San Nicolas, .55 in the rest of Zone A, and .67 in Zone B. These are under the assumption that the holding capacities of the land are .33 in San Nicolas, 1.0 in the rest of Zone A, and 1.33 in Zone B.

In Zone B, with the introduction of new types of grass, the density could be increased possibly to 2.0, and higher benefits could be obtained. However, such benefits are not assumed in this report, nor are the added costs of new seeds, for this fertile region of Nicaragua.

4. We assume that swine production in Zone B will remain constant, since the highest use of the area is for cattle production and dairying. Hog and corn farmers will continue to open new land to the east of the project area.
5. In Zone A, sugar production will be consumed locally. The increase in tobacco production is not considered highly dependent on road improvement and therefore tobacco is not considered in the incremental benefit or cost calculations. Cotton production was assumed to remain constant and therefore no incremental benefits are attributable to the road. Coffee is produced for local use only, and the area for coffee production has been declining.

6. We have assumed the same savings by reduction of grain losses in storage as that suggested by the consultants.
7. We have assumed a quantum increased in knowledge of agricultural techniques by local farmers, as a consequence of a future major effort by Government extension agents and personnel of financial institutions.
8. We have assumed that the road improvements will be completed in two years.
9. We have accepted the Consultants' estimate of foreign-exchange costs of the road construction at about 46 percent of total costs. The greater part of the work will be carried out by force account.
10. The improvement of the six roads in Zone A will contribute to a higher yield of the farm areas, and an increased area of production as well. For purposes of this analysis, Zone A is assumed to be an integral agricultural region (after elimination of the non-farmer road aspects of the proposed El Sauce-Esteli road, i.e., omitting the 14 km. of road in the roughest part of the Cordillera Horno Grande).
11. We assume the incremental annual cost of maintenance of the proposed roads will be U.S.\$45 per km.

This is calculated from recent expenditures in the country on approximately 9700 kms of all-season and dry-weather roads, which averaged U.S. \$55. We assume that GON has not completely accounted for the overhead costs of acquisition and maintenance of its field equipment and possibly office support; we roughly calculate total road maintenance costs on this type of road at present actually to be about \$155. We expect that a new level and quality of maintenance will obtain, resulting in a cost of about \$200 per km. We therefore project an incremental cost per kilometer of U.S.\$45.

### Methodology

The basic method of forecasting benefits was to compute the incremental effect of benefits assuming the road was built, less the normal benefits from production which could be expected if the road were not built. For grain production, it was assumed that there would be a logistic growth curve, with no appreciable effect in the first two years, with the new higher annual amount of production reached about year eight. Similar growth curves were used for other products. Calculations were always checked against total land requirements for subsistence and export products. Residual (salvage) values of the road and agricultural investment were omitted; they were not included in benefits calculations nor subtracted from cost estimates.

### Rural Planning Standards

#### 1. Planning

We have examined the proposed road network and have amended the layout for these reasons:

- a. to reduce paralleling and thus to obtain a better coverage of roads in the area;
- b. to serve as many families as possible;
- c. to increase the likelihood of achieving the claimed benefits.

### Standards

The cross-sectional design of the typical road for use in the projects consists of a compacted gravel surface of 5 meters. The incremental cost of this design over that originally proposed in the Consultant's draft report (3.5 meters of compacted gravel surface with 0.5 meter shoulders, for a total road width of 4.5 meters) is estimated at 22%. We believe that the alternate standard of 5 meters width overall, including 0.75 meters gravelled shoulders, is roughly comparable in construction and maintenance cost over the life of the road to the cost of the 5-meter construction without shoulders.

Traffic

Traffic data have been projected on the following basis:

<u>Road Lines</u>	1970 ADT Trucks <u>Microbuses</u>	<u>Annual growth rate</u> (percent)
<u>Zone A</u>		
Esteli - San Rafael	26	8
San Rafael - Yali	16	10
Yali - Cordega	13	8
Esteli - San Nicolas	25	8
El Sauce - Esteli	8	8
Esteli - Yali	N.A.	N.A.
<u>Zone B</u>		
La Libertal - Sto Domingo	36	15 thru 1979/ 12 1980
Sto Domingo - El Chile	5 <sup>a</sup> / <sub>1</sub>	10

We expect that the number of commercial vehicles (not inclusive of automobiles and jeeps) on Zone A roads will not exceed 100 per day within the 15 year forecast period. On the segment La Libertad - Santo Domingo, we expect that the commercial vehicle total (ADT) will exceed 100 by about 1980. The proposed design for a gravel road of 5 meters width appears adequate for the traffic volumes in Zone A and B, in which it might be expected that autos and jeeps will add an additional two-thirds to the volume of commercial traffic.

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<sup>a</sup>/ A hypothetical figure for projection purposes on this presently impassable route.

NICARAGUA

Table 1. Feeder Road Projects  
Summary of Estimated Construction and Maintenance Costs  
with road width of 5 meters.

Routes	Length in km.	Construction Cost		Annual Incremental Maintenance Cost	
		U.S. \$ -000	Cordobas \$ -000	U.S. \$ -000	Cordobas -000
<b>ZONE A:</b>					
Estelí-Concordia-San Rafael	43	565	3,955	1.935	13.545
Estelí-Yalí	25	394	2,759	1.125	7.875
Yalí-San Rafael	16.7	173	1,214	0.752	5.261
Yalí-Condega	37.6	931	6,516	1.692	11.844
Estelí-San Nicolás	12	321	2,248	0.540	3.780
Estelí-El Sauce	33	604	4,231	1.485	10.395
<b>TOTAL ESTELÍ ROADS</b>	<b>167.3</b>	<b>2,988</b>	<b>20,923</b>	<b>7.529</b>	<b>52.700</b>
<b>ZONE B:</b>					
La Libertad-Santo Domingo- El Chile	49.5	1,177	8,241	2.228	15.592
<b>GRAND TOTAL</b>	<b>216.8</b>	<b>4,165</b>	<b>29,164</b>	<b>9.756</b>	<b>68.292</b>
Average cost per km.					
Estelí roads, Zone A		17.9	125.1	0.045	0.315
Average cost per km.					
La Libertad-El Chile, Zone B		23.8	166.5	0.045	0.315

NOTES: El Sauce - Estelí: recommended new alignment reduces length from 40km. to 33km. This 33km. figure represents three segments: El Sauce - Nacascolo, 18km.; Estelí - San Roque, 8km.; and Petaquia Valley spur to Nacascolo road, 7km. (at Type A Standard). Recommended new alignment Estelí-San Nicolás reduces length from 21km. to 12km. Recommended new alignment Estelí-Yalí reduces length from 37 to 25km. (Funds for additional bridges in the El Sauce region are not included.)

The total length of the roads in Estelí are thus reduced to 167.3km. from 195.6km. (or 205.3km. under the D standard of improvement). The cost of the roads are those recommended under the D-standard; however, with no information from which to disaggregate the 205.3km. figure, we use the 195.6km. figure as the original total.

The 5-meter width is estimated at an incremental cost of 222 above original estimated construction costs\* exclusive of engineering. Engineering costs are estimated as same as estimated in the original report.

\* Total maintenance cost per km. is estimated at \$200 (Cordobas 1400). Maintenance cost per km. on existing dry weather roads is estimated at \$155 (Cordobas 1085), resulting in incremental cost of \$45 (Cordobas 315).

NICARAGUA

Table 2A: ZONE A - ESTELI REGION  
Benefit/Cost Ratios at Discount Rates of 10%, 12%, and 14%

Year	TOTAL COSTS				TOTAL BENEFITS			
	Undiscounted	10%	12%	14%	Undiscounted	10%	12%	14%
1972	10,461.5	10,461.5	10,461.5	10,461.5				
1973	10,902.5	9,910.4	9,735.9	9,561.5				
1974	494	408	394	380	1,892	1,720	1,690	1,659
1975	1,215	912	865	820	3,621	2,991	2,886	2,785
1976	3,541	2,419	2,252	2,096	7,196	5,404	5,124	4,857
1977	3,541	2,199	2,008	1,838	11,005	7,516	6,999	6,515
1978	3,541	1,997	1,795	1,615	14,912	9,260	8,455	7,739
1979	3,541	1,817	1,601	1,416	16,957	9,564	8,597	7,732
1980	3,541	1,654	1,431	1,243	18,564	9,523	8,391	7,426
1981	3,541	1,501	1,278	1,091	18,962	8,855	7,661	6,656
1982	1,216	469	392	328	19,155	8,122	6,915	5,900
1983	1,215	425	349	288	19,354	7,471	6,232	5,226
1984	53	17	14	11	20,269	7,094	5,817	4,806
1985	53	15	12	10	20,358	6,494	5,232	4,234
1986	53	14	10	8	21,238	6,159	4,864	3,865
1987	53	13	10	7	21,266	5,593	4,360	3,403
					21,301	5,091	3,898	2,982
	<u>TOTAL:</u>	34,232	32,604	31,174	<u>TOTAL:</u>	100,857	87,121	75,783

Benefit cost ratio  
 at 10% -  $\frac{100,857}{34,232}$  = 2.9  
 at 12% -  $\frac{87,121}{32,604}$  = 2.7  
 at 14% -  $\frac{75,783}{31,174}$  = 2.4

NOTE: The cost figure includes construction costs, maintenance costs (incremental), and agricultural investments (incremental). Agricultural investment starts in 1973 and continues through 1983.

Benefits are incremental benefits attributable to the project.

NICARAGUA

Table 2B: ZONE B - La Libertad-Santo Domingo-El Chile Road  
Benefit/Cost Ratios at Discount Rates of 10%, 12%, and 14%

Year	TOTAL COSTS				TOTAL BENEFITS			
	Undiscounted	10%	12%	14%	Undiscounted	10%	12%	14%
1972	4,120.5	4,120.5	4,120.5	4,120.5				
1973	4,219.5	3,835.5	3,768	3,700				
1974	115	25	92	88	272	247	243	239
1975	605	454	431	408	556	459	443	428
1976	451	308	287	267	871	654	620	588
1977	473	294	268	245	1,219	833	775	722
1978	496	280	251	226	1,602	995	908	831
1979	521	267	235	208	2,033	1,147	1,031	927
1980	547	255	221	192	2,508	1,287	1,134	1,003
1981	776	329	250	210	3,033	1,416	1,225	1,065
1982	606	234	195	164	3,610	1,531	1,303	1,111
1983	637	223	183	151	4,245	1,639	1,367	1,146
1984	573	183	147	119	4,926	1,724	1,414	1,167
1985	16	5	4	3	5,668	1,808	1,457	1,179
1986	16	4	3	3	6,479	1,879	1,484	1,179
1987	16	4	3	2	7,360	1,936	1,509	1,178
					8,322	1,989	1,523	1,165
	<u>TOTAL:</u> 10,891	10,459	10,107	<u>TOTAL:</u>	19,544	16,436	13,928	

Benefit cost ratios:

at 10% -  $\frac{19,544}{10,891}$  = 1.8

at 12% -  $\frac{16,436}{10,459}$  = 1.6

at 14% -  $\frac{13,928}{10,107}$  = 1.4

NOTE: The cost figure includes construction costs, incremental maintenance costs and incremental agricultural investments.

NICARAGUA  
 Estimated Investment Costs in Zone A  
 Table 3- (Back-up table for Table 2A)

-000 Cordobas

Year	Construction Costs	Maintenance Costs	Agricultural Incremental	Total Costs (Undiscounted)
1972	10,461.5			10,461.5
1973	10,461.5		441	10,902.5
1974		53	441	494
1975		53	1,162	1,215
1976		53	3,488	3,541
1977		53	3,488	3,541
1978		53	3,488	3,541
1979		53	3,488	3,541
1980		53	3,488	3,541
1981		53	3,488	3,541
1982		53	1,163	1,216
1983		53	1,162	1,215
1984		53	-	53
1985		53	-	53
1986		53	-	53
1987		53	-	53

NOTE: No residual value of agricultural investments has been allowed . The time profile of agricultural investments has been adjusted to fit the benefit profile. Tobacco investments are not included since they are considered non-sensitive to road investments. Incremental agricultural investments are estimated at 2/3rds of total investment in agriculture. Construction costs and maintenance costs from Table 1.

EXCHANGE RATE:  
 U.S. \$1 = 7 Cordobas  
 (May 1971)

NICARAGUA  
 Estimated Investment Cost  
 ZONE B - Feeder Road Project  
 Table 4 - (Back-up table for Table 2B)

-000 CORDOBAS

Year	Construction Cost 5m. width	Incremental Maintenance	Incremental Agricultural Investment	Total Cost (Undiscounted)
				4,120.5
1972	4,120.5		99	4,219.5
1973	4,120.5		99	115
1974		16	589	605.
1975		16	435	451
1976		16	457	473
1977		16	480	496
1978		16	505	521
1979		16	531	547
1980		16	760	776
1981		16	590	606
1982		16	621	637
1983		16	557	573
1984		16	-	16
1985		16	-	16
1986		16	-	16.
1987		16	-	

NOTE: Construction costs and maintenance costs from Table 1. Agricultural investment costs attributable to road projects are estimated at 2/3rds of total agricultural investments as foreseen in the Schnitzler Report, Table 34.

Residual (or salvage) values for agricultural investment are not included in the above calculation.

EXCHANGE RATE:  
 U.S. \$1 = 7 Cordobas  
 (May 1971)

## DESCRIPTION OF INDIVIDUAL PENETRATION ROADS

### 1. Condega-San Sebastian de Yali

This road begins at the town of Condega located on the Interamerican Highway North, at an elevation of approximately 540 meters above sea level. Along its length of 37.6 kilometers, the elevation increases to nearly 1,020 meters and drops to about 840 meters at its terminus San Sebastian de Yali. The road crosses the Esteli river near Condega, its final portion located in the Yali river valley, also crosses that river. At approximately kilometer 33.5, the road junctions with the route coming from Esteli.

The horizontal and vertical alignments are deficient; drainage structures and bridges are lacking; and the roadway surface for the greater part lacks select cover material which renders it practically impassable during the rainy season. The vertical alignment needs correction over approximately 2- Km. and shows a maximum grade of 33 percent for some short sections.

The width fluctuates between 2.3 and 3.0 meters, excepting the first two kilometers which has widths of 3.0 to 3.4 meters.

The horizontal curves, of irregular design, have radii of less than 20 meters in many cases, producing a horizontal alignment especially deficient between kilometers 14 and 35.

### 2. San Sebastian de Yali-San Rafael del Norte

This project can be considered as a continuation of the Condega-Yali road. It starts at an elevation of about 840 meters above sea level, rises to nearly 1,350 meter on passing to the northeast of the Yali Volcano, and drops to an elevation of 1,110 meters at its terminus in San Rafael del Norte. At this latter point it connects with the Jinotega-Matagalpa and La Concordia-Esteli roads.

The length of the road is 16.7 kilometers, and is in good condition. The

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The horizontal and vertical alignment, roadway surface, and drainage structures are the most satisfactory of the roads under study in the Esteli region. A bridge is under construction over the Yali river, at the roadway exit from San Sebastian de Yali.

Grades are in excess of 15 percent over 3,270 meters and reach a maximum of 23 percent in one 200 meter length.

The roadway surface is well covered with select material but in many sections one can see rock of excessive size and non-compacted soil and material.

The road width is greater than 3.5 meters in its entire length.

3. Esteli-La Concordia-San Rafael del Norte

This route, at the Esteli end, is 820 meters above sea level. At kilometer 5.5, the elevation rises to 990 meters, later descending to 715 meters, and then again rises rapidly with very sharp grades (up to 23%) to an altitude of 1,090 meters. At its junction with the San Rafael del Norte-Jinotega road, the elevation is 1,040 meters.

The total length of the road is 43 kilometers, including the short section from the previously-mentioned junction to San Rafael del Norte.

Maximum grade reaches 25% on 5 km. The vertical alignment needs correction. The horizontal alignment is very defective in several sections with irregular curves. It is especially critical between kilometers 4 and 6, 11 and 34 to 41.

The road width fluctuates between 2.4 and 3.0 meters for 30 kilometers, while the balance has a width between 3.0 and 4.0 meters.

Note: Sections 4, 5, & 6 have been modified to include recommendations as developed by the U.S. Department of Transportation during the intensive review of the project.

4. Yali - Loma El Arco

Formerly Yali-Esteli this section follows the original route beginning at the

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junction of the Condega-Yali road to a point near Laguna Mirafior at Kilometer 11.5, and then follows a westerly course through the villages of La Sabaneta and El Sontule, intersecting with the Interamerican Highway near Cerro La Loma.

The first six kilometer section has steep grades and sharp curves and climbs from 780 meters at the Yali River to 1,400 meters. The elevation varies between 1,400 and 1,200 to El Sontule, at km. 18, where the road begins to descend until it joins the Interamerican Highway at 700 meters elevation. The roadway is generally deficient, mostly less than 3.0 meters, over the entire length of 25 km.

5. Esteli-Cerro La Loma

Formerly Esteli-San Nicolas, this road follows the original route out of Esteli to El Ocotillo at km. 8, then runs easterly to its intersection with the Interamerican Highway near Cerro La Loma, a total length of 12 km. Elevation varies from 850 meters at the beginning, to 1,200 meters, near El Ocotillo, then drops to about 950 meters at its easterly end. Horizontal and vertical alignment are generally satisfactory. Road width is mostly between 2.4 and 3.0 meters, with surfacing and drainage being deficient.

6. Esteli-El Sauce

This road was originally proposed to link Esteli and El Sauce, but now includes only a part of this route.

The first section is from Esteli to San Roque, a distance of 8 kilometers. It leaves Esteli at elevation 840 meters, immediately fords the Esteli river and then climbs to 1,000 meters at San Roque. Horizontal and vertical alignment need improvement and the width averages about 3 meters.

Second is the 17 km. section from El Sauce to Nacascolo which ranges in elevation from 200 to 500 meters. The roadway, which is in poor condition, is generally 2.0 to 2.5 meters only. Some correction of horizontal and vertical alignment is required.

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Leaving km. 12 out of El Sauce and immediately after crossing Rio Petaquia an 8 kilometer branch road will serve the Rio Petaquia Valley, including the villages of Los Cerritos, El Alboroto, Salale, La Montaña, and La Montañita. While there are no problems with the horizontal and vertical alignments the roadway is less than 2.5 meters, has no surfacing or drainage facilities.

7. La Libertad-Santo Domingo-El Chile

This project begins at the small town of La Libertad which is reached via an all weather road from the village of Santo Tomas on the Rama road, a distance of 24.5 kilometers.

Although this latter section can be traveled the year round, its alignment and drainage needs improvement as do the existing bridges, at least in the short run. These 24.5 kilometers would remain with lesser specifications than those of the route La Libertad-Santo Domingo-El Chile when the latter is improved to the proposed standard.

The route between La Libertad and Santo Domingo has a length of 12.5 kilometers, is all weather and has similar characteristics, although a bit less satisfactory than the Santo Tomas-La Libertad section. The alignment can be easily improved and in many sections the roadway width is 4 meters. However, the drainage and above all, the two existing bridges ought to be reconstructed.

On leaving Santo Domingo the road is in very poor condition. During the rainy season it is impassable, and even during the dry season it is passable only with four-wheel drive vehicles.

The alignment between Santo Domingo and El Chile is very deficient, both horizontally and vertically. In addition, the road is totally lacking in drainage, bridges and roadway surfacing.

Among the major rivers crossed are: El Cilindro, Camastro, Sucio and Siquia; the latter has a width of more than 60 meters.

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ANNEX III, Exhibit 1  
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The town of La Libertad is located at an altitude of about 460 meters above sea level; that of Santo Domingo at approximately 500 meters. At leaving Santo Domingo, the road begins a steep ascent over two kilometers, later descending with grades up to 35 percent to an elevation of 660 meters and one of 230 meters in only five kilometers. For the balance of the distance, the road traverses rolling terrain, crossing the Rio Siquia at an elevation of about 150 meters and arriving at El Chile with an elevation of about 190 meters above sea level.

The roadway is narrow between Santo Domingo and El Chile; in many sections it is only two meters in width.

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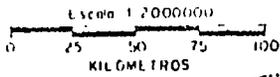




# RED VIAL DE NICARAGUA

## CLAVE

- Capital 
- Cabecera Departamental 
- Otras Poblaciones 
- Carretera Pavimentada 
- Carretera de Grava 
- Transitable Permanente 
- Transitable en Períodos de Seca 
- En Construcción 
- Proyectos Revestidos 
- Proyectos Troncales 
- Límite Departamental 



División de Planeamiento  
Noviembre, 1970

COSTA RICA

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ANNEX III, Exhibit 6  
Page 1 of 1

PROPOSED EQUIPMENT PURCHASE LIST

<u>ITEM</u>	<u>No.</u>	(000 Dollars)	
		<u>Unit Price</u>	<u>Total</u>
Tractor, D8 *	3	72	216
Tractor, D7 **	6	50	300
Tractor, D6 **	6	34	204
Motor Grader	12	27	324
Loader Front	6	28	168
Truck, Dump, 8 yd.	24	12	288
Truck, Water tank	4	6	24
Truck, Flat bed	12	5	60
Truck, Trailer, 50T	1	35	35
Pickup	24	3	72
Compactor, 5T Pneu.	3	.5	15
Compactor, 10T Drum	6	3	18
Pump, 6 in.	6	2	12
Electric Plant	6	1	6
Lab. equip. portable	2	35	70
			<hr/>
Spare Parts			1,812
Shop Equipment			272
			<hr/>
			52
			<hr/>
			2,136
Freight, insurance, contingencies			264
			<hr/>
		TOTAL:	2,400
			<hr/> <hr/>

\* Includes dozers and rippers.

\*\* Includes dozers.

ESTIMATED CONSTRUCTION COSTS  
(Thousands of Dollars)

ROUTE

<u>Work Item</u>	Esteli - San Rafael	Yali - San Rafael	Condega - Yali	Esteli - S. Nicolas	Esteli - El Sauce	Esteli - Yali	La Lib-S.Domingo - El Chile
Earthwork	204.0	55.0	361.8	162.8	194.5	156.7	365.5
Surfacing	78.1	21.0	104.8	25.9	44.0	55.4	154.5
Culverts and Side Ditches	76.0	31.3	82.0	28.2	84.4	49.5	169.9
Box Culverts and Bridges	18.0	7.0	90.0	2.9	262.4	7.4	119.0
Contingencies	37.6	11.4	63.9	22.0	41.5	26.8	80.9
Eng., Adm. and Supervision	55.7	18.8	66.1	14.2	42.2	30.2	81.9
<b>Total:</b>	<b>469.4</b>	<b>144.5</b>	<b>768.6</b>	<b>256.0</b>	<b>669.0</b>	<b>326.0</b>	<b>971.7</b>

GRAND TOTAL: - \$3,605,200

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ANNEX III, Exhibit 8  
Page 1 of 3

### PROPOSED DESIGN SPECIFICATIONS

The specifications for the proposed improvements are given on pages two and three of this Annex, and are considered adequate for farm-to-market type roads with maximum ADT of 100 or less.

A roadway width of 3.5 meters is essentially a one-lane road. However, by providing shoulders of 0.75 meters also covered with granular material, the total crown width of 5.0 meters will allow two trucks to pass safely. Since the two road sections, Yali-San Rafael and La Libertad-Santo Domingo have crown widths of more than 3.5 meters and have the highest ADT, they will be improved to a 4.5 meter crown with 0.5 meter shoulders and surfaced the full width.

The roadway surface will be formed by compacted granular materials, which when properly placed and maintained is adequate for this type of road.

The 3.5 meter width, single lane bridges have been proven to be adequate on the Camacho Project. The design has been standardized, using masonry abutments, steel I-beams and wooden decking. Culverts will be mostly concrete pipe; with reinforced concrete box culverts serving the higher capacity requirements. Side ditches will be protected with rip-rap where the grade requires it.

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ANNEX III, Exhibit 8

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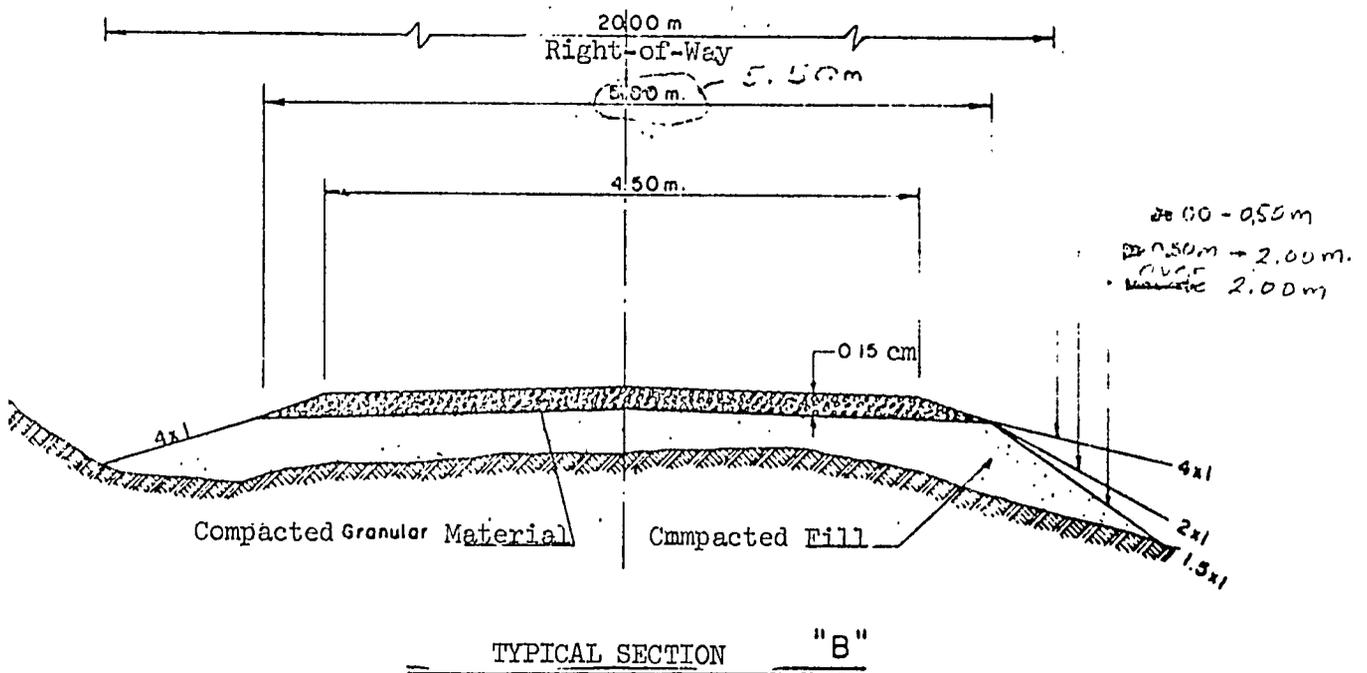
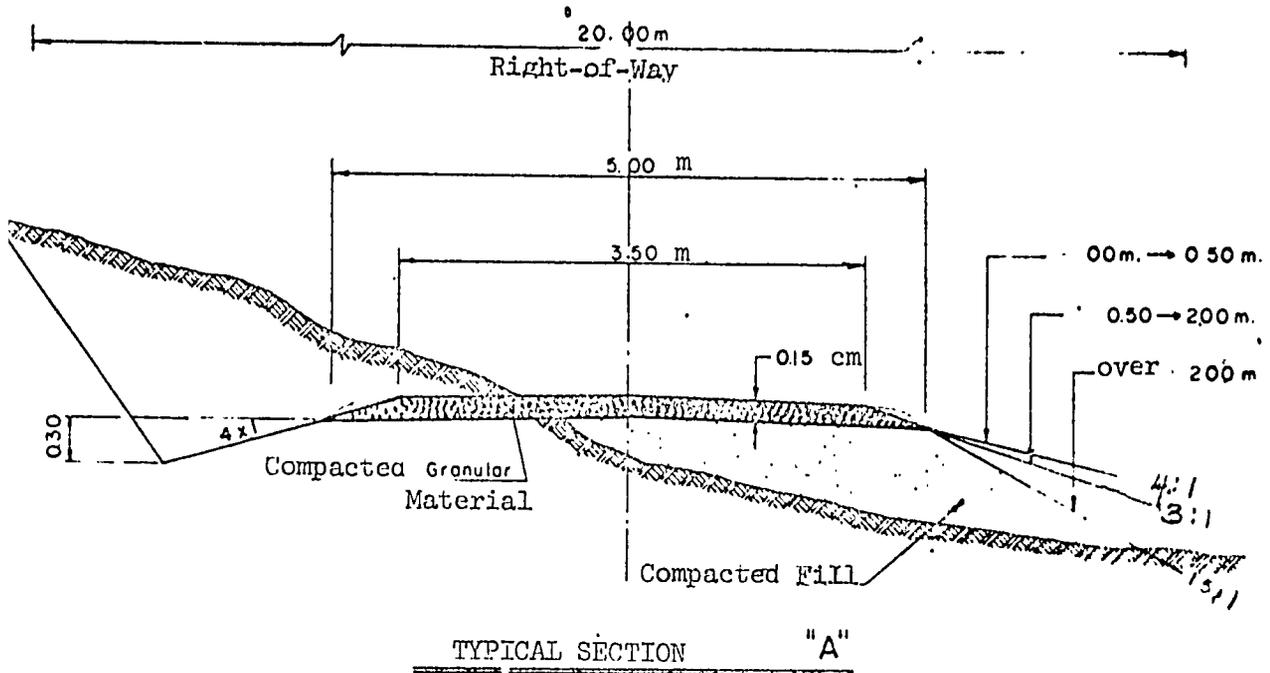
PROPOSED DESIGN SPECIFICATIONS

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Type of Road - All-weather Farm-to-Market

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Right of way	20.00 meters
Minimum crown width	5.00 meters
Minimum roadway width	3.50 and 4.50 meters
Average daily traffic	Maximum 100
Maximum grade:	
a. Level terrain	6% tolerance up to 8% in 500 meters
b. Rolling terrain	8% tolerance up to 12% in 300 meters
c. Mountainous terrain	12% tolerance up to 15% in 200 meters
Design speed:	
a. Level terrain	50 Kph.
b. Rolling terrain	40 Kph.
c. Mountainous terrain	30 Kph.
Maximum curvature:	
a. Level terrain	15°00'
b. Rolling terrain	24°30'
c. Mountainous terrain	43°30'
Width of shoulders	0.50 and 0.75 meters
Crown slope	Minimum 3%
Load design	H 15 - S 12
Surfacing material	Granular compacted
Width of bridges	Minimum 3.50 meters
Drainage	Semi-final and provisional work
Surface course thickness	Minimum 0.15 meters



(Yali-San Rafael and La Liberad - Sto. Domingo Sections)

## ECONOMIC PANORAMA

### 1. The Growth of the Economy

The output of goods and services in the economy (Gross Domestic Product) increased by only 3.7 per cent in constant 1970 prices, the smallest rate of growth since 1961, with the exception of the year 1966. With a rate of population growth of at least 3.2 per cent, this means that per capita GDP rose by only 0.5 per cent. As the average per capita increase during the last five years has been less than 1.5 per cent, the standard of living, at least to the extent that it is measured by this index, hardly has improved in half a decade. In fact, to the extent that income distribution is uneven, some sectors of the population may have witnessed a deterioration in their position. In current prices, the Gross Domestic Product rose by 9 per cent, indicating an implicit price index increase of 6 per cent.

What has accounted for this deterioration in the rate of growth of GDP? The obvious and all too accurate answer is the deterioration in the primary sector, particularly but not limited to, agricultural crop production. The primary sector declined by 0.3 per cent in 1970 and the agricultural component by 4.0 per cent. The decline in the agricultural sector of the GDP was due in large part to the fall in cotton production. In contrast to the above, both the livestock and forestry sector rose by 7.4 and 10.2 per cent respectively. The fishing industry, however, declined by 7.4 per cent, apparently due to cyclical conditions.

The factor that prevented a greater deterioration in the increase of GDP, was the growth in the secondary sector of the economy, particularly in industry, which has by far the greatest weight in this sector. The secondary sector rose by 6.2 per cent in 1970 as a result of the 9.5 per cent growth in manufacturing industry. Conversely, the construction industry and the mining industry declined by 1.5 per cent and 17.6 per cent respectively. Tertiary activities (commerce, government, transportation, electricity, etc.) continued their steady growth, and rose by 4.9 per cent.

There was a continued slow but steady decline in the relative position of the primary sector in the Gross Domestic Product, and a continued slow but steady growth in the secondary sector, primarily resulting from the growth in manufacturing industry. In 1965, the primary sector accounted for 32.7 per cent of gross domestic product, and the agricultural crop component, 26.8 per cent. In 1970, these components had fallen to 27.5 per cent and 17.2 per cent respectively. The forestry and fishing sectors

retained their relative positions, but the livestock sector rose from 5.2 per cent in 1965 to 9.2 per cent in 1970.

In contrast to this trend, the secondary sector rose from 17.4 per cent of GDP in 1965 to 23.6 per cent in 1970. All of this improvement was due to the increase in the output of industrial manufacturing. This sub-sector increased from 12.8 per cent of Gross Domestic Product to 19.1 per cent. Tertiary activities have continued practically at the same percentage level.

Gross domestic product by expenditure in 1970 shows a fairly sharp reversal of the situation that prevailed in 1969. Private consumption, which had remained relatively stable in 1969 at 72.8 per cent of GDP jumped suddenly to 78.6 per cent in 1970; Government consumption changed only moderately. In contrast, private investment declined from 16.4 per cent of GDP in 1969 to 15.5 per cent in 1970; Government public investment rose to 4.4 of GDP compared to 4.0 per cent in 1969. (This was due to an increase in central government investment as well as in investment by some semi-autonomous agencies).

The increase in private consumption represented in large part the increase in imports of consumer goods (see section on balance of payments). The decline in private investment is particularly serious to the extent that the growth in GDP in 1971 and 1972 should be affected adversely by this year's (1970) investment. Obviously if economic growth as measured by GDP is a function of capital formation, it would appear that growth for the next year or two at least will continue to remain at less than 5 per cent.

## 2. Trade and the Balance of Payments

In 1970, Nicaragua increased its net reserves by \$12.5 million in contrast to a decline in net reserves of \$6.5 million the previous year. This increase resulted from a larger capital inflow rather than from any improvement in the net position of goods and services.

Although exports of goods exceeded imports (f.o.b.) by \$0.1 million, an improvement over the deficit of the past few years, the net balance of services deteriorated to a level of - \$44.4 million, compared to - 41.3 million the previous year. Thus the net balance of goods/services and donations rose to - \$38.3 million in 1970 compared to - \$35.7 the previous year.

Private and official capital inflows both increased by an amount more than sufficient to compensate for this deficit. In addition, the increase of capital through the Special Drawing Rights also added to the net reserves. In other words, excluding the SDR's from the Balance-of-Payments calculation would indicate an increase in reserves of \$9.3 million rather than \$12.5 million. Nevertheless, this still is an improvement over the previous year's situation.

The private capital inflow increased from \$15.3 million in 1969 to \$20.3 million in 1970, a rise of \$5.0 million. This increase of \$5.0 million was the result of a \$3.0 million increase in direct investment, \$1.0 from draw-down of private loans, and \$1.6 million from short-term commercial bank credit. In contrast, amortization rose by \$0.6 million. As private investment declined in 1970 as reported in the GDP statistics this increase in private foreign capital inflows may indicate that domestic private investment fell by a larger amount than shown by the aggregate GDP data.

In the official capital inflows, the drawdown of loans increased by \$19.2 million or about 65 per cent. This includes long-term loans to the banking system. At the same time, amortization rose to \$18.1 million from \$12.9 million the previous year. As a result of the large gross drawings, the net inflow of official foreign capital reached \$29.0 million. This was almost double the net inflow of 1969 but remained below the level of \$37.2 million in 1968. In 1968 and 1970, gross drawings were approximately equal, but in 1968 amortization was only \$10.3 million, while in 1970 it rose to \$18.1 million.

As a result of this improved position, Nicaragua's gross reserves reached \$54.4 million in 1970, after falling to \$48.1 million in 1969. (In February 1971, gross reserves reached \$70.8 million). However, as a result of other international liabilities, particularly commercial banks' liabilities in the form of medium and long-term loans, net reserves were only \$7.1 million. (This was less than 4 per cent of total imports c.i.f.). It was, however, an improvement over the net reserve level of - \$5.4 million that prevailed at the end of 1969.

Within the past several years, Nicaragua's trade pattern has changed markedly. In 1960, only 4 per cent of its exports went to the CACM; in 1965, this had increased to 8.3 per cent. In 1970, 25.8 per cent of Nicaragua's exports went to the Common Market countries. The same picture applies to imports, although here the situation has stabilized over

the past few years. In 1960, 3.9 per cent of Nicaragua's imports came from the CACM; by 1965, it had reached 13.3 per cent and by 1968, 25.0 per cent. After declining to 23.9 per cent in 1969 (total imports as well as imports from the CACM declined in absolute terms in that year), imports from the CACM again rose to 25.1 per cent, as both total imports and the share from the CACM increased. In contrast to this, imports from the U. S. have been declining since 1967, in relative terms. As a result of its very rapid change in exports to the CACM, Nicaragua's trade balance to the Common Market declined to only -\$3.95 million in 1970 from a peak of -\$24.12 million in 1967, -\$21.53 million in 1968 and -\$10.54 million in 1969.

The composition of Nicaragua's exports have also changed considerably during the past 10 years. In a general breakdown between "traditional" and "non-traditional" products, there has been a sharp movement towards the latter. In 1960, the latter amounted to \$3.6 million, or 5.7 per cent of total exports; by 1969 it had increased to \$59.1 million or 37.3 per cent; in 1970, it had risen to \$77.9 million or 43.6 per cent. The major non-traditional products consist of fresh meat, shrimp and lobster, plywood, chemical products, textiles, and numerous other products. Much of this increase has come from industries which have been established during the past few years and include the following: FORMICA (plastic), ROCIF (pharmaceuticals), FABRITEX (textiles) POLYCASA (PVC), etc. In a breakdown by economic groups, Nicaragua remains an exporter principally of primary goods, raw materials and intermediate products such as cotton, coffee, meat, shrimp and lobster, sugar, chicle, cotton seed oil, etc. However, two new manufactures -- textiles and chemical products -- continue to increase.

Imports have not changed very much, and Nicaragua still remains a heavy importer of consumer goods, durable and non-durable. In fact, last year, imports in this category rose by \$8.3 million, raw materials rose by more than \$7 million, agricultural equipment remained stable, while imports of industrial equipment actually declined by about \$2 million. Thus about 30 per cent of Nicaragua's imports were of consumer goods and about 40 per cent of raw materials and intermediate products. (This increase in consumer imports shows up as increased consumption in the GDP accounts).

Nicaragua's exports to the CACM consist primarily of consumer goods, non-durable, and primary materials. In 1970, new exports to the Common

Market included cotton, rice, caustic soda, plastic materials and rubber solution. Other major export items included corn, leather goods, wood products, chemicals, pharmaceuticals and cosmetics, plywood, shoes, oats and cereals. Approximately 43 per cent of exports to the CACM were consumer goods and 33 per cent, primary goods.

Nicaragua's major imports from the CACM also consist of consumer goods and raw materials, 42 per cent and 34 per cent respectively. Some of the major imports were foodstuffs, tobacco, textiles, pharmaceuticals, paper products and chemicals.

### 3. Budgetary and Fiscal Developments

After several years of slow growth, Government ordinary revenue rose by almost \$ 78 million in 1970 (\$11.1 million) a rate of increase of 15.8 per cent. As Gross Domestic Product rose by 9 per cent (in current prices), a slight greater share of national output, 10.2 per cent, was collected in revenue than in previous years. It should be noted, however, that this share remains below the levels prevailing in a few of the CACM countries. Nevertheless, the increase in Government revenue was commendable and represented a reversal of past trends. As a result of this effort, and a tight rein on current expenditures, the GON generated a current account surplus (government savings) of \$ 86 million (\$12.3 million), the largest level since 1966. In turn, government investment rose sharply compared to the previous year, and as net external borrowing more than doubled, the GON was able to meet its budgetary deficit without recourse to inflationary bank borrowing. The official GON estimates show a further upward trend in revenue, investment and external borrowing in 1971. Unless there is a serious deterioration in trade due to Common Market uncertainties or an unanticipated further slowdown in the domestic economy, these targets should be met. In fact, the first quarter of 1971 shows almost all tax targets being exceeded.

#### Central Government Revenue

Central Government revenue reached a peak of \$ 570.8 million in 1970, and thereby exceeded the IMF target of \$ 567 million established in the 1970 Stand-by Agreement. This represented the largest increase since 1965. Direct taxes rose by \$ 15.2 million and maintained its share of total government revenue (about 20 per cent); this was due to a \$ 7.4

million increase in property tax collections and \$ 5.0 million increase in income taxes. The increase in the former was due to the property tax incentive legislation introduced in April 1970, which raised \$ 4 million in new taxes, and the regular property valuation program (Cadastral). The increase in income taxes was relatively slight, but does represent a reversal of previous years' trend.

The major increase in revenue resulted from the various indirect taxes introduced since 1968. Import duties rose \$ 22.2 million in 1970, reflecting a \$ 9.1 million in general import duties, \$ 6.2 million in "compensatory" taxes, and \$ 6.6 million in the 5 per cent sales tax. All of these were collected by the Customs on imported goods. The single largest increase in revenue resulted from excise and consumer taxes which increased by \$ 31.2 million; \$ 23.5 million of this total came from the new 5 per cent general sales tax introduced in May 1970. Thus slightly more than 76.2 per cent of government revenues still relies on indirect taxes of one form or another.

The Government of Nicaragua estimates that revenue will increase by \$ 70 million in 1971 and assumes that several major developments that occurred in 1970 will be continued into this year. It estimates that (1) property (real estate) taxes will increase an additional \$ 9.5 million; (2) the 5 per cent sales tax collected on imports would increase revenue by \$ 5.8 million; (3) the 5 per cent sales tax collected by the Tax Office will increase revenue by \$ 26.1 million and (4) the compensatory tax collected on domestic producers would increase \$ 6.9 million. These four taxes would then comprise an increase of \$ 48.3 million, or almost 70 per cent of the total revenue increase estimated by the GON. At this time, it appears feasible that the overall target will be reached, although some of the specific tax targets may fall short. Thus, while the compensatory tax may not achieve its target, income taxes, which are estimated to increase by only \$ 1.2 million should exceed this target, as the first quarter collections in 1971 exceeded the first quarter target by an amount that would indicate a larger annual increase.

#### Central Government Budgetary Operations

Government savings in 1970 more than doubled compared to the previous year, reaching a level of \$ 86.0 million compared to only \$ 32.0

million the previous year. This was the highest current account surplus since 1966, and was the result not only of the revenue increase discussed above, but a continuing rein over current expenditures. This item rose by only \$ 24 million in 1970.

Capital expenditures rose to \$ 164.5 million, an increase of \$ 51.2 million over the previous year. "Real" investment i.e., expenditures for capital equipment comprised 64 per cent or \$ 106.5 of total capital expenditures; the remainder took the form of transfers to government agencies such as the National Bank and INCEI, and other items. (Some of these transfers may in fact have been used by the agencies for current expenditures; data is inadequate to analyze this factor, however).

The budgetary deficit declined slightly from \$ 81.3 million in 1969 to \$ 78.7 million in 1970. Almost 80 per cent of this deficit was covered by net foreign borrowings, due mainly to drawings on AID, CABEL, and IDB loans. The remainder was covered by borrowings from the Social Security Institute in the form of I.O.U.s.

The GON estimates that savings will increase an additional \$ 48 million and that investment will reach \$ 240 million in 1971. Although the deficit would then increase to \$ 107 million a further increase of net foreign borrowing to a level of \$ 75.4 million should assist in covering the deficit. It does appear that additional domestic borrowing will become necessary in 1971 and/or that there will be an increase in the floating debt. In all likelihood, however, the estimates for investment have been set too high and will be reduced downward as the year progresses. Thus the deficit will decline below that presently targeted, and recourse to heavier internal borrowing will not be necessary. Another item that remains open to question is the estimated increase in net external borrowing which at first reading appears too high. Alternative projections of these factors would merely represent subjective valuations and would not be valuable. The important points are: (1) government savings will increase; (2) investment will increase as well and (3) a large share of the deficit (70 per cent in 1971, down from 80 per cent in 1970) will have to be covered by foreign borrowings if the goals will be attained.

#### 4. The Monetary Situation

In 1966, the money supply reached its peak level of \$ 565.1 million,

and for the following two years, declined. This was due to a sharp deterioration of the net foreign asset position of the banking system. In 1967, the situation changed slightly as money supply rose by 5 per cent (and savings hardly increased), but in 1970 there was a marked change in money supply and the major factors affecting it. The money supply (demand deposits and currency in circulation) rose by 12 per cent in 1970, mainly due to an improvement in the net foreign asset position of the banking system. In contrast, domestic credit, which in the past had been a major factor increasing the money supply, was tighter than in any prior year.

Total domestic credit (i.e. loans to government, official entities and the private sector), rose only 5.2 per cent in 1970, compared to 8.6 per cent, 6.3 per cent and 19.7 per cent in 1969, 1968 and 1967 respectively. Net claims on official entities and the government actually declined in 1970 (the latter due to the government's improved revenue position), while loans to the private sector rose 6.5 per cent. As regards the latter, this was slightly above the rate of increase in 1969 which was 6.2 per cent, but still remains below the rates of increase in 1968 and 1967 i.e. 9.4 per cent and 13.7 per cent respectively. More than half of the increase of claims on the private sector in 1970 came from an increase in banking investments.

The improvement in the net international asset position, from -€ 290.9 million in 1969 to -€ 228.9 million in 1970, resulted mainly from an increase in the Central Bank's gross international assets position (an increase in gross reserves). At the same time, a factor that prevented an even larger increase in the money supply, was the unusually large increase in quasi-money, which rose by 18.8 per cent in 1970 compared to only 1.1 per cent increase in 1968. In fact, the increase of savings (incl. other liabilities), was the largest in several years, reaching a level of € 310.0 million (€ 267 million term and savings deposits; € 43 million "other" liabilities). Savings deposits in commercial banks (incl. the National Bank) rose to € 172.6 million from € 154.2 million the previous year; government term deposits increased from € 49.6 million.

Credit provided from the banking system (i.e. the Central Bank, the National Bank, and private commercial banks) to the private sector, the Central Government and official entities, was provided mainly by the National Bank. Total internal credit reached a level of € 1.359

billion of which the National Bank provided 57.3 per cent, private banks, 27.6 per cent and the Central Bank, 15.1 per cent. Eighty-five per cent of the loans went to the private sector with the remainder going to the Central Government and official entities.

There has been some shifts in the loan portfolio in 1970 as short-term loans declined in absolute terms and fell to 55.1 per cent of total bank loans. In contrast, long-term loans rose to 47.0 per cent. (In 1968 and 1969, the ratios averaged 61 per cent and 38 per cent respectively. About 60 per cent of the total loans went to agriculture and livestock, 27 per cent to industry and the remainder to trade, etc. Except for the livestock sector, most of the loans are short-term; as livestock loans are mostly long-term, this has affected the general distribution mentioned above between short and long-term loans.

There is some preliminary information on the banking systems "frozen portfolio", but it appears to represent only a partial picture of the situation. According to Central Bank data prepared early this year, in 1968 the frozen portfolio totalled \$ 239.9 million, in 1969 it rose to \$ 325.1 million but in 1970, for the first time in many years, the portfolio declined to \$ 235.2 million. Most of this decrease apparently has resulted from the National Bank's efforts in 1970 to clean-up its serious bad debt position.

##### 5. The Role of the Rural Sector in the Economy

Despite the rapid growth of the industrial sector of the economy, and some movement into the urban areas from the country-side, Nicaragua remains predominantly a rural economy. According to the Central Bank and the Ministry of Economy, 53 per cent ( or 1,074 million) inhabitants were classified as rural and 901,172 were urban as of June 30, 1970. The majority of the rural population were situated in the Northern and Central zones, somewhat less in the Pacific, and a considerably smaller portion in the Atlantic zone. Although there has been a reduction in the rural population (from 59 per cent in 1970), the increase in the absolute numbers of the rural population indicate that it will remain the predominant sector for some time to come. Although there is no official data, it is estimated that 60 per cent of the economically active population is involved in rural activities i.e. agriculture, forestry, fishing and livestock. Of course, to the extent that the industrial sector depends on the rural sector for its raw mate-

rials, the importance of the latter sector is even more evident.

The relative economic position of the rural sector has been reduced over the past five years, but it still plays the single most important role in the economy. The recent slowdown in agricultural economic activity has been to some degree compensated for by an increase in industrial and other non-agricultural activities. This compensation has been only partial, however, and economic growth indeed has been stunted by the slowdown (cotton) in the agricultural sector during the past few years.

While the growth of the Gross Domestic Product rose by 3.7 per cent in 1970, (constant prices) the output of the primary sector (agriculture, forestry, fishing and livestock) actually declined by 0.3 per cent. The value of agricultural crop output declined 4 per cent in 1970 while the fishing sector fell by 7.4 per cent. The livestock and forestry sectors continued to grow, barely compensating for these losses. In terms of contribution to GDP, the primary sector also declined, amounting to about 27.5 per cent of GDP from an average of about 29 per cent in previous years. However, since a portion of agricultural products are processed by the Industrial sector, and as much as 50 per cent of manufactured exports consist of agricultural inputs, the direct and indirect participation of the rural sector in the economy's total output of goods and services is greater than that shown by the above data.

The total value of agricultural production did increase in 1970, but only by 3 per cent, from \$ 1.405 billion to \$ 1.450 billion (in current prices). This increase occurred despite a 19 per cent reduction in the value of cotton production and a 43 per cent decline in bananas. In contrast, there was a large increase in the value of production of coffee, corn, beans and tobacco, with smaller increases in rice, sugar cane and "other".

The decline in the value of cotton production, occurred mainly because of a fall in production amounting to 22 per cent. . . The decline in banana output, 43 per cent, was equivalent to the decline in output value thus accounting in full for the latter. In contrast, although the output value of coffee increased 47 per cent, physical output rose only 18 per cent, indicating that most of the increase in the value of production was due to an increase in prices.

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The increase in the production value of corn was due solely to an increase in prices, as physical production actually declined 4 per cent while production value increased 29 per cent. Prices of sorghum held steady as production actually fell 13 per cent while output value fell only 4 per cent.

The area planted to cotton continued to decline and fell by 13 per cent in 1970. The area planted to bananas, corn and sorghum also declined, while the cultivated area for coffee, rice and beans increased somewhat.

The above represent some of the basic statistics in agricultural production. The 1971 prospects seem somewhat better. Cotton acreage is expected to increase and although rice acreage is not expected to change, increased yields are forecast. Production of corn and sorghum are expected to increase due to increased domestic and CACM demand, and empty granaries. Other products such as sugar cane, beans, coffee, pork and milk are expected to increase at slow rate.

Although the position of the agricultural sector as exemplified in export statistics did deteriorate in 1970, its contribution still remained high. In 1970, cotton exports fell to 19 per cent total of exports from 29 per cent the previous year (and 45 per cent in peak years prior to 1966) but coffee exports rose to 18 per cent of total exports. Some non-traditional agricultural crops, particularly meat and fish, increased. (It should be noted that in Nicaraguan statistical data, fresh meat exports is considered an industrial export; in above narrative, it is attributed to the rural sector). In general then, no matter how one cuts up the economy, and despite the poor showing of certain agricultural products, the output of the rural sector continues to play a major role in the economy. In fact, it is because of the slowdown in the rural sector that overall economic growth has slowed to a point where it barely exceeds the rate of population growth. The industrial sector has just about taken up the slack, but it has not been able to affect as many economic indicators or as many people as can be affected by developments in the rural sector. It is this situation that is one justification for a U.S. input into the rural sector in the form of loans. Programs by the GON and USAID to improve and diversify agricultural development so as to improve the welfare of the rural population

are discussed below.

### Rural Development Programs

There is no overall agricultural sectoral plan in Nicaragua, although there is considerable official emphasis on diversification and export promotion of agricultural and agro-industry products. The major institutions involved in rural development programs include the Ministry of Agriculture (MAG), the National Bank (BNN), the National Development Bank (INFONAC), Institute for Internal and External Commerce (INCEI), and the Agrarian Reform Institute (IAN). Following is a brief summary of the functions of the above institutions and some of the rural development programs and projects they are undertaking.

#### a. Ministry of Agriculture

The Ministry is a policy agency primarily, with much of the actual work being undertaken by the various autonomous agencies such as BNN, INCEI, etc. With USAID assistance, the MAG has undertaken an applied research project in rice, animal nutrition and forage crops, and has an extension service that provides technical assistance to small farmers. The Ministry is participating in developing rural youth clubs, and cooperates with other Ministries in promoting school garden programs throughout Nicaragua. The USAID is continuing to support an irrigation demonstration project to evaluate the economic benefit of irrigation on selected crops.

The Ministry operates three agricultural stations, "La Calera" and "Campos Azules" in the Pacific region and "El Recreo" on the East Coast. These stations are not of particularly good quality, but with some assistance from USAID they have undertaken important crop variety testing programs.

#### b. The National Bank

The BNN is the main financial agency for the agricultural sector and is a government bank. About 80 per cent of all agricultural credit is provided by this bank. The bank is involved in a number of agricultural programs, although a

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major share of its loan portfolio goes to the cotton sector.

The BNN, under a U. S. loan of \$9.4 million is financing the U.S. dollar costs of agrochemicals to be used for the production of rice, corn, beans, sesame, forage, peanuts and other crops. The bank also has a program to provide rural credit and technical advice to medium and small farmers to assist them in financing crop inputs. It has a contract with a private Israeli firm to implement an irrigation program, primarily on cotton. The Bank receives funds from the Inter-American Development Bank for a rice irrigation project and a cattle breeding project.

c. The National Development Bank

INFONAC is a public development bank and carries out specific projects in agriculture. In 1961, it initiated a banana program which has not been successful to date. In 1970 it concluded an agreement with Standard Fruit for an expanded banana program. It has a tobacco project centered in Esteli and has been importing, for sale to cattle owners, purebred cattle for milk and meat production. With IDB assistance, INFONAC is carrying out the PROLACSA project which involves the development of a milk production area in North-Central Nicaragua. Assisted by the U.N., it has conducted a forest-resources survey of 300,000 hectares of land on the North Atlantic coast. In conclusion, INFONAC has allocated approximately 40 per cent of its resources to agriculture and the remainder to industry.

d. The Institute for Interior and Exterior Commerce

INCEI is the Government agency in charge of price stabilization of basic grains. It is now receiving assistance, under a USAID-funded borrower-grantee contract, for the development of a price stabilization, storage and marketing program for basic grains. Besides operating since 1960 a modern 15,000 tons granary, INCEI has constructed 100 small additional drying and storage units with a 1,000 tons capacity each, distributed throughout the country. It is estimated that 5 additional regional units with a capacity of 9,000 tons each will be in operation before the 1972 harvest.

e. Agrarian Reform Institute

IAN began its operations in 1964 and is involved in measuring, titling and distributing land to landless people. Since then 5,119 titles have been delivered to 35,833 people involving an area of 224,225 hectares. Provisional titles numbering 4,505 have been granted covering 195,636 hectares, and 4,902 additional titles are being prepared for delivery in the near future. In addition, IAN has organized 40 colonies and settlements benefitting 3,507 families and covering 41,743 hectares.

6. The Industrial Sector

As indicated in the section on economic growth (GDP), the manufacturing component of the industrial sector increased by 9.5 per cent, reaching a level of 18.8 per cent of Gross Domestic Product in constant prices. (This is a larger contribution to GDP in 1970 than was made by the agricultural crop sector).

Since the initiation of the Common Market, there has been a considerable growth in the value of industrial production and the establishment of many new industries. Although food processing continues to be the major component of the industrial sector, other new items have a more important absolute role, albeit not a larger relative role, in industrial output. (It should be noted that the Government does not publish detailed physical output data; the discussion thus centers around industrial production value).

The value of industrial production rose from \$ 1.4 billion in 1965 to \$ 2.5 billion in 1970, an increase of 81 per cent. (Obviously some of this represents price increases, although on average, prices have been relatively constant over this period with the exception of 1970). In 1970, 47.4 per cent of the output came from the food processing sector, an increase of 4.5 per cent over that prevailing in 1965. (This sector includes meat, milk, butter, rice, corn, bread, cheese and coffee). The next largest component was chemicals, which almost doubled in value in 1970 with respect to 1965 and comprised 12.0 per cent of output value. This sector includes pharmaceuticals, cosmetics, fertilizers, insecticides and plastics. The next most important components were the beverage

sector, followed by textiles, shoes, petroleum products, mineral products and metal products. (The latter consists of a multitude of products including structural steel parts, nails, fences, metal furniture, shovels and picks, etc.).

The above represents the relative position of some sectors of industry. In absolute terms there has been an increase in output value of considerable dimensions of new products, although because of the strong position of the food industry, this is not evident. For example, metal products increased 52 per cent; machinery, more than 400 per cent (from a low base); transportation equipment, 100 per cent; petroleum products and mineral products more than doubled; chemical products rose 91 per cent; textiles, 50 per cent; etc.

Exports of industrial manufacturing products also have increased and have been an important factor in compensating for the slump in cotton exports. In 1967, industrial exports amounted to \$44.1 million; by 1970 it had more than doubled to a total of \$92.7 million. Almost 58 per cent of these exports were foodstuffs, some of which such as meat, shrimp and lobster are non-traditional products. Other major exports in this category include sugar, chemical products, textiles and cotton-seed oil. At the same time, Nicaragua's imports of manufactured items in 1970 was almost double its exports. A large portion of these imports consist of construction equipment, electrical and non-electrical equipment, transportation equipment, chemical products and textile products.

As mentioned earlier, there have been a number of new industries developed in Nicaragua since the Common Market was formed. Following is a short list of some of them:

- (1) Electrochemical Penssault, S. A. - Caustic soda, chlorine.
- (2) American Cynamid - Plastic sheets and products.
- (3) Fabritex - Textiles
- (4) Polycasa - PVC and resins
- (5) Sacos Centroamericanos - Jute bags and fabrics.

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- (6) Hercules of Nicaragua - Toxaphene
- (7) Atlas of Central America - Insecticides
- (8) Roche - Pharmaceuticals
- (9) Prolacsa - Powdered milk

Total commercial bank credit (incl. BNN) to the industrial sector continues to increase, and as a percentage of total loans to the private sector reached 27.6 per cent in 1970, as compared to 1969 and 1968 when these percentages were 26.9 and 25.3, respectively. In 1970 about 55 per cent of the loans to industry were short-term, and the remainder was medium and long-term. In 1970, total commercial bank loans to the industrial sector reached a level of \$ 318.6 million. Detailed information is not available at this time.

Three of the major financial institutions, other than commercial banks, are active in the industrial financing field. They are the Nicaraguan Investment Corporation (CNI), the National Development Bank (INFONAC) and the National Bank of Nicaragua (BNN). Following is a brief resumé of their activities based on currently available data, usually 1969.

a. Nicaraguan Development Corporation

CNI is a private industrial bank organized in early 1964 by Nicaraguan businessmen and business entities, including commercial banks, insurance companies, and private foreign banks. CNI activities encompass short, medium and long-term loans as well as some, relatively modest, equity investment. This organization has received two loans from AID totalling approximately \$8.0 million and has lines of credit from foreign banks such as Bank of America, Morgan Guaranty Trust Co., Manufacturers Hanover Trust, Bank of London and Montreal, and Union Bank of Switzerland.

As of the end of 1969, CNI's loans amounted to \$ 90.6 million, of which 67 per cent went to the industrial sector and the remainder to agriculture mainly. Loans were both for working

capital and for machinery and equipment. The AID loans primarily were for the latter, although some of the former were permitted. CNI also has made equity investments in Fabritex, Maderas Industrializadas, S. A., Industrias Metalúrgicas Unidas, S. A., Industrias Cerámicas de Centroamérica, S. A. and other enterprises.

b. The National Bank

The National Bank has devoted the large proportion of its loans to the non-industrial sector, and in fact is considered primarily an agricultural bank. In 1969, 22 per cent (or \$ 180.3 million) of the Bank's total loans were made to medium and large-sector industry. In addition, about \$ 24 million were loaned to small industry. (In 1967, AID signed a loan agreement allocating \$ 2 million to this program, with matching funds required from the Bank). Approximately 40 per cent of the industrial loans were short-term.

c. National Development Institute

INFONAC is a public development bank founded in 1953 to promote both agricultural and industrial diversification and production. It provides fixed capital and working capital loans, as well as equity investment. In 1969, loans to industry totalled \$ 126 million or 60 per cent of the Institute's loan portfolio; 40 per cent went to Agriculture. Approximately 45 per cent were medium and long-term loans and the remainder short-term. The major industries receiving loans were foodstuffs, textiles and chemicals.

As of the end of 1969, INFONAC's investments totalled \$ 41 million and were made in a textile plant (Fabritex), Metasa (metal structures, iron tubes, etc.), Polycasa(PVC), Atchemco (pine oil and turpentine), Madinsa (wood processing) and Prolacsa (powdered milk).

7. Development Issues

a. Export Earnings

The improvement in the balance of payments in 1970 i.e. the

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increase in reserves, does not indicate a permanent improvement in Nicaragua's external position.

Nicaragua's balance of trade was barely in surplus in 1970 (exports and imports f.o.b.). There has been a considerable improvement in the export structure and diversification has been increasing, particularly into non-traditional and industrial type products. Continued improvement, however, will depend on several factors, not least of which is the continued uncertainties in the CACM, the impact of Honduras' initiation of various import controls, and general economic conditions in the CACM. (As indicated previously, a good share of the increase in exports was due to increased exports to the CACM. Total exports rose \$20 million, but exports to the CACM rose \$15 million from 1969 to 1970). If cotton exports begin to increase to its more "normal" level and if non-traditional exports continue their current pace, then the trade picture will indeed be favorable. But that both these factors will occur simultaneously is doubtful. Meanwhile, Nicaragua's propensity to import remains high, as indicated by the increase in imports amounting to \$20 million in 1970, more than half of which were consumer goods.

Net services remain high (-\$44.4 million in 1970) with the result that Nicaragua's balance on current account deteriorated slightly to -\$38.3 million in 1970. It was only as the result of the large inflow of official and private capital that Nicaragua was able to continue to improve its reserve position. And this in turn depends upon many factors: (1) availability of local capital to support loan drawdowns; (2) debt service ratio to exports which has now reached 15 per cent; (3) new loans and (4) new projects. Of course, import controls either through credit or other monetary system might help to reduce imports of "unessential" items.

Thus, while stimulating export diversification and improving, if possible, the position of cotton at the same time, the Government of Nicaragua must continue to rely on international financial assistance in order to prevent further serious deterioration in its reserve position. If imports once again begin to decline, as they did in 1969, the picture will be

somewhat improved, but even here it depends upon what imports are reduced. The trade balance must be improved so that Nicaragua can begin to cover at least part of the large adverse services deficit which will continue to be a draw on its export earning capacity.

b. Domestic Revenues and External Loans

As 1970 began, the GON through its presentation of a contingency budget, announced that it would be unable to raise sufficient domestic financial resources to support loans made by international lending agencies including AID, IBRD, IDB and CABEL. However, as the year progressed, various and numerous transfers were made from this contingency budget to the regular budget. The result was that many international loans, especially those of AID, did receive sufficient local currency support, and loan drawdowns were large. (See section on Balance of Payments for review of large inflow of official capital).

In 1971, the GON is estimating that government revenue will increase by about \$10 million. Data available through March indicates that it is probable that this target will be met. The 1971 budget contains sufficient local currency support for most international loans, and thus there appears no problem in this regard for this year. There does appear to be, however, a shortage of productive type projects, and most of those currently under consideration by external loan agencies are of an infrastructure nature. The GON has lacked a facility for project development, but maybe with the advent of the new Planning Office, and the developing role of the Coordinating Committee, this shortcoming may be solved.

c. The Current External Loan Portfolio

The GON has not published a current review of the outstanding balance of its external loan portfolio, but it is estimated to be approximately \$180 million as of December 1970.

As indicated in previous sections, there was a large gross draw-down of external loans in 1970. As of March 1971, the loan

balance available from AID was only \$6.9 million, compared to \$34.4 in December 1969, a drawdown of \$27.5 in fifteen months. According to data prepared in March 1970 by the Ministry of Economy and data available to the USAID through June 1970, the GON's loan portfolio with other major international lending agencies was as follows:

- 1) Export Import Bank - balance available as of December 1969, 6.4 million; as of June 1970, \$2.6 million;
- 2) IBRD - balance available as of December 1969, \$34.4 million; as of June 1970, \$23.4 million;
- 3) IDB - balance available as of December 1969, \$40.3 million; as of June 1970, \$32.5 million. (This data underemphasizes the disbursement of IDB loans, as new loans totalling \$12.4 million were made in 1970);
- 4) CABEI - balance as of December 1969, \$10.7 million; as of June 1970, \$22.8 million. (Also includes new loans made in 1970).

In addition to the above, there are official loans from other banking institutions such as the National Provincial and Lloyd's Bank, Royal Bank of Canada, the German Development Bank and others.

The servicing of Nicaragua's foreign debt continues to increase. In 1968, the ratio of debt services to exports was 9.2 per cent; in 1969 it had increased to 13.4 per cent, and in 1970 it rose to 15.9 per cent, according to Central Bank data. Although at present this is not serious, and Nicaragua's international credit rating is considered high, obviously amortization payments will increase. The burden of the debt will then depend upon Nicaragua's ability to improve its trade balance and maintain an adequate level of capital inflow. There are no statistics currently available on the debt servicing requirements for the next 5-10 years.

1. Nicaragua: Gross Domestic Product  
(Constant 1958 Prices)

Industrial Sector	1968	1969	1970 *	Rate of Growth	
				1969/68	1970/69
1. Gross Domestic Product	4,323.9	4,566.8	4,736.7	5.6	3.7
a) Primary Activities	1,251.3	1,304.9	1,301.3	4.3	0.3
1) Agriculture	832.6	847.3	813.3	1.8	4.0
2) Livestock	373.4	407.6	437.9	9.1	7.4
3) Forestry	20.5	21.6	23.8	5.4	10.2
4) Fishing	24.8	28.4	26.3	14.5	- 7.4
b) Secondary Activities	928.1	1,051.9	1,117.3	13.3	6.2
1) Manufacturing	719.9	828.1	906.7	15.0	9.5
2) Construction	144.6	162.9	160.4	12.7	1.5
3) Mining	63.6	60.9	50.2	4.3	17.6
c) Tertiary Activities	2,144.5	2,210.0	2,318.1	3.1	4.9
1) Commerce	864.8	888.1	913.0	2.7	2.8
2) Government	239.3	258.9	269.0	8.2	3.9
3) Transportation & Comm.	219.9	225.8	232.1	2.7	2.8
4) Banking	109.4	106.9	134.6	2.3	25.9
5) Electric Power & Potable Water	119.3	121.6	141.1	1.9	16.0
6) Housing	298.0	306.7	317.5	2.9	3.5
7) Other	293.8	302.0	310.8	2.8	2.9

\* Preliminary Data

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Annex IV  
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2. Nicaragua: Gross Domestic Product  
(Constant 1958 Prices)

Industrial Sector	1965	1966	Structure		1969	1970
			1967	1968		
1. Gross Domestic Product	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
a) Primary Activities	32.7	29.4	29.1	28.9	28.6	27.5
1) Agriculture	<u>26.8</u>	<u>22.5</u>	<u>22.0</u>	<u>19.3</u>	<u>18.6</u>	<u>17.2</u>
2) Livestock	5.2	6.0	6.2	8.6	8.9	9.2
3) Forestry	0.4	0.4	0.4	0.4	.5	.5
4) Fishing	0.3	0.5	0.5	0.6	.6	.6
b) Secondary Activities	17.4	19.5	18.8	21.5	23.0	23.6
1) Manufacturing	<u>12.8</u>	<u>14.0</u>	<u>14.2</u>	<u>16.6</u>	<u>18.1</u>	<u>19.1</u>
2) Construction	3.2	4.0	3.3	3.4	3.6	3.4
3) Mining	1.4	1.5	1.3	1.5	1.3	1.1
c) Tertiary Activities	49.9	51.1	52.1	49.6	48.9	48.9
1) Commerce	<u>19.9</u>	<u>19.9</u>	<u>19.8</u>	<u>20.0</u>	<u>19.4</u>	<u>19.3</u>
2) Government	7.2	7.9	8.9	5.5	5.7	5.7
3) Transportation & Comm.	5.1	5.1	5.0	5.1	4.9	4.9
4) Banking	2.1	2.4	2.5	2.5	2.4	2.8
5) Electric Power & Potable Water	1.8	2.0	2.3	2.8	2.7	3.0
6) Housing	7.0	7.0	6.9	6.9	6.7	6.7
7) Other	6.8	6.8	6.9	6.8	6.6	6.5

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Annex IV  
Page 23 of 423. a. Nicaragua: Gross Domestic Product  
(Millions of Cordobas)

<u>Expenditure</u>	<u>Current Prices</u>						<u>Constant Prices 1958</u>					
	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970 1/</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Gross Domestic Product	4,210.3	4,395.0	4,731.1	4,908.7	5,134.7	5,598.4	3,913.0	4,033.0	4,245.0	4,323.9	4,566.8	4,736.7
Consumption	3,463.6	3,685.0	4,122.6	4,167.9	4,246.8	4,677.8	3,176.0	3,299.0	3,607.0	3,525.4	3,684.6	4,102.4
Public	399.8	457.6	517.0	566.2	608.2	634.8	369.0	417.0	462.0	330.5	358.4	380.1
Private	3,063.8	3,227.0	3,605.6	3,601.7	3,638.2	4,043.0	2,807.0	2,882.0	3,145.0	3,195.0	3,326.2	3,722.3
Investment	847.6	988.2	975.2	873.8	1,014.0	1,029.8	820.0	931.0	910.0	799.3	929.8	944.4
Public	179.2	241.8	235.8	175.9	198.4	230.0				162.5	181.4	208.4
Private	668.4	746.4	739.4	697.9	815.6	799.8				636.8	748.4	736.0
Exports <u>2/</u>	1,177.4	1,167.4	1,243.9	1,315.7	1,410.5	1,410.5	1,221.0	1,221.0	1,317.0	1,320.9	1,270.0	1,123.0
-Imports	1,278.3	1,445.6	1,610.6	1,448.7	1,514.8	1,514.8	1,304.0	1,418.0	1,589.0	1,321.7	1,317.6	1,433.1

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Annex IV  
Page 24 of 423. b. Nicaragua: Gross Domestic Product  
(Millions of Cordobas)

	<u>1965</u>	<u>1966</u>	<u>Structure</u>		<u>1969</u>	<u>1970</u>	<u>1965</u>	<u>1966</u>	<u>Structure</u>		<u>1969</u>	<u>1970</u>
			<u>1967</u>	<u>1968</u>					<u>1967</u>	<u>1968</u>		
Gross Domestic Product	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Consumption	82.3	83.8	87.1	84.9	82.7	83.5	81.2	81.8	85.0	81.5	80.7	86.6
Public	9.5	10.4	11.0	11.5	11.8	11.3	9.5	10.3	10.9	7.6	7.8	8.0
Private	72.8	73.4	76.1	73.4	70.9	72.2	71.7	71.5	74.1	73.9	72.9	78.6
Investment	20.1	22.5	20.6	17.8	19.7	18.4	21.0	23.1	21.4	18.5	20.3	19.9
Public	4.2	5.5	5.0	3.6	3.9	4.1				3.8	4.0	4.4
Private	15.9	17.0	15.6	14.2	15.9	14.3				14.7	16.3	15.5
Exports <u>2/</u>	28.0	26.6	26.3	26.8	25.1	25.2	31.2	30.3	31.0	30.5	27.8	23.7
-Imports <u>2/</u>	30.4	32.9	34.0	29.5	27.6	27.1	33.3	35.2	37.4	30.6	28.8	30.3

NOTES: Current and Constant Data 1968-1970 from Indicadores Economicos (Central Bank 1970). Current Data 1965-1967 from "United Nations National Accounts". 1/ Preliminary. 2/ Goods and Services.

4. Nicaragua: Balance of Payments  
(Millions of Dollars)

	<u>1960</u>	<u>1968</u>	<u>1969</u>	<u>1970</u> <sup>1/</sup>
<b>A. Goods, Services &amp; Grants</b>				
<u>Exports FOB</u> <sup>2/</sup>	63.9	161.0	157.5	177.8
Imports FOB	-56.4	-165.2	-158.4	-177.7
Trade Balance (net)	7.5	- 4.2	- 0.9	0.1
Services (net)	-18.1	- 44.0	- 41.3	- 44.4
Grants (net)	3.0	6.3	6.5	6.0
Total	<u>- 7.6</u>	<u>- 41.9</u>	<u>- 35.7</u>	<u>- 38.3</u>
<b>B. Priv. Capital Movement</b>				
Direct Investment	1.7	16.4	12.0	15.0
Loan Withdrawals	0.1	2.1	2.4	3.4
Amortizations	- 0.5	- 1.6	- 1.8	- 2.4
Comm. Credits & Others	5.7	- 6.4	2.7	4.3
Total	<u>7.0</u>	<u>10.5</u>	<u>15.3</u>	<u>20.3</u>
<b>C. Official Capital</b>				
<u>Loan Withdrawals</u> <sup>3/</sup>	6.2	49.3	29.8	49.0
Amortizations	- 2.2	- 10.3	- 12.9	- 18.1
Other	- 0.3	- 1.8	- 1.4	- 2.0
Total	<u>3.7</u>	<u>37.2</u>	<u>15.5</u>	<u>29.0</u>
<b>D. SDR's</b>	-	-	-	3.2
<b>E. Errors &amp; Omissions</b>	- 2.9	- 3.7	- 1.6	- 1.7
<b>F. Total Bal. (A+B+C+D) + E</b>	0.2	5.5	- 6.5	12.5
<b>G. Net Monetary Movement</b>				
<u>Net Position with IMF</u>	-	19.0	- 1.0	- 5.2
Central Bank	0.1	- 20.7	6.2	- 3.8
Comm. Banks <sup>4/</sup>	- 0.3	- 3.6	1.8	- 3.3
C. A. Clearings	-	- 0.2	- 0.5	- 0.2
Total	<u>- 0.2</u>	<u>- 5.5</u>	<u>6.5</u>	<u>- 12.5</u>

<sup>1/</sup> Preliminary, <sup>2/</sup> Figures adjusted for Bal. of Payments purposes. Includes non-monetary gold. <sup>3/</sup> Includes long-term Banking System. <sup>4/</sup> Includes short-term loans. In G, above, sign (-) indicates increase of reserves; no sign means a decrease.

SOURCE: Indicadores Economicos 1970 - Central Bank

5. Nicaragua: Exports by Products  
(Thousands of Dollars)

	<u>1960</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
<u>Traditional Products</u>	<u>57,829</u>	<u>113,778</u>	<u>98,393</u>	<u>98,382</u>
Sesame	2,545	2,906	2,545	2,243
Cotton	14,683	59,675	45,425	34,247
Cotton Seed	2,216	3,344	1,038	1,234
Sugar	3,435	5,458	8,300	9,832
Coffee	19,221	22,683	20,563	32,086
Copper	1,863	5,592	5,077	4,192
Beans	98	949	844	1,294
Cattle	1,721	76	188	27
Ipeca	236	553	580	470
Gold	6,916	5,024	4,105	3,835
Silver	197	377	265	175
Cotton Seed Cakes	190	3,013	3,442	2,405
Other Traditional	4,508	4,128	6,021	6,342
<u>Non-Traditional Products</u>	<u>3,604</u>	<u>47,324</u>	<u>59,126</u>	<u>77,960</u>
Rice, milled	112	245	611	1,535
Bananas	138	3,133	2,180	256
Beef	2,968	15,882	20,836	26,579
Shrimps & Lobsters	-	5,140	6,750	5,936
Leather, Skins & Mfrs.	64	1,018	1,525	1,910
Plywood	112	628	922	1,268
Chemical Products	-	4,395	6,914	9,527
Textile Products	6	1,571	1,762	4,444
Resins	-	-	-	2,450
Tobacco	-	815	1,508	1,892
Other Non-Traditional	204	14,497	16,118	22,163
<u>Other</u>	<u>1,438</u>	<u>1,199</u>	<u>1,229</u>	<u>2,281</u>
<b>Total</b>	<u><u>62,871</u></u>	<u><u>162,301</u></u>	<u><u>158,748</u></u>	<u><u>178,623</u></u>

6. Nicaragua: Exports FOB - Principal Products  
(Millions of Dollars)

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	<u>1969</u>	<u>1970</u>
<u>Agropecuaries</u>	<u>89.8</u>	<u>92.8</u>
Sesame	2.5	2.2
Cotton	45.4	35.0
Rice, milled	0.6	1.4
Bananas	2.2	0.2
Cocoa	-	0.1
Coffee	20.6	32.1
Shrimp & Lobster	6.7	6.0
Beans	0.8	1.3
Hogs	0.1	0.5
Cattle	0.2	-
Chewing gum - raw	0.5	3.6
Ipeca	0.6	0.5
Lumber	0.1	-
Corn	1.2	0.8
Molasses	0.3	0.5
Cotton waste	1.3	0.6
Cotton seed	1.0	1.2
Cotton seed cakes	3.4	2.6
Tobacco	1.5	1.8
Milk products, eggs, honey	0.8	2.4
<u>Manufactures</u>	<u>49.0</u>	<u>64.3</u>
Cotton seed oil	3.8	3.8
Sugar	8.3	9.8
Coffee, instant	0.8	0.6
Beef	20.8	26.7
Leather, skins & mafrs.	1.5	2.0
Plywood	0.9	1.2
Wood, sawed	1.9	2.5
Fertilizers & raw minerals	0.5	1.3
Chemical Products	6.9	9.4
Cereals, Processed	1.8	2.5
Textiles	1.8	4.5
<u>Extractive Industries</u>	<u>9.5</u>	<u>7.7</u>
Copper	5.1	3.9
Silver	0.3	0.1
Gold	4.1	3.7
<u>Other</u>	<u>10.4</u>	<u>13.8</u>
<b>Total</b>	<b><u>158.7</u></b>	<b><u>178.6</u></b>

SOURCE: Indicadores Economicos 1970 - Central Bank

7. Nicaragua: Trade with Central America  
(Millions of Dollars)

	<u>Imports</u>	<u>Exports</u>	<u>Balance</u>
1970	50.0	46.1	- 3.9
1969	42.0	31.0	-11.0
1968	46.0	24.0	-22.0
1967	42.0	18.0	-24.0
1966	31.6	16.2	-15.4
1965	21.4	12.4	- 9.4
1964	14.3	7.1	- 7.2
1963	7.4	4.8	- 2.6
1962	5.3	3.5	- 1.8
1961	2.9	2.8	- 0.1
1960	2.8	2.5	- 0.3

SOURCE: Indicadores Economicos 1970 - Central Bank

8. Nicaragua: Trade with Central America  
(Thousands of Dollars)

	<u>1969</u>	<u>1970</u>
<u>EXPORTS - FOB</u>		
Costa Rica	13,675	18,381
El Salvador	6,524	7,811
Guatemala	5,083	7,250
Honduras	6,402	12,614
Total	31,684	46,056
<u>IMPORTS - CIF</u>		
Costa Rica	12,742	13,927
El Salvador	11,856	15,425
Guatemala	12,883	15,729
Honduras	4,738	4,926
Total	42,219	50,007
<u>BALANCES -</u>		
Costa Rica	933	4,454
El Salvador	-5,332	-7,614
Guatemala	-7,800	-8,479
Honduras	1,664	7,688
Total	-10,535	-3,951

SOURCE: Indicadores Economicos 1970 - Central Bank

9. Nicaragua: Exports and Imports by Economic Sector  
(Thousands of Dollars)

CIIU DESCRIPTION	Imports		Exports	
	1969	1970 1/	1969	1970 1/
<u>Agric., Forestry, Fishing, Hunting</u>	<u>6,356.5</u>	<u>9,111.7</u>	<u>78,092.3</u>	<u>80,783.6</u>
Agriculture	6,239.4	7,735.5	76,878.6	77,225.3
Forestry	111.7	1,374.1	1,177.1	3,464.7
Hunting	-	-	-	-
Fishing	5.4	2.1	36.6	93.6
<u>Mines and Quarries</u>	<u>7,720.5</u>	<u>8,982.9</u>	<u>5,605.3</u>	<u>5,150.3</u>
<u>Manufactures</u>	<u>162,344.2</u>	<u>180,606.1</u>	<u>75,042.1</u>	<u>92,674.9</u>
Food products, except beverages	8,140.9	8,984.5	44,054.7	53,178.6
Beverages	887.1	1,087.1	36.1	30.7
Tobacco	215.7	371.3	226.0	519.0
Textiles	13,263.6	16,082.6	3,256.5	5,796.4
Shoes, garments, etc.-textile	3,952.7	4,946.3	2,096.1	2,988.8
Wood & cork, except furniture	527.8	629.0	2,797.4	3,843.3
Furniture & accessories	1,270.2	1,222.2	454.9	805.9
Paper & paper products	5,450.3	6,030.4	300.6	409.0
Printing, etc.	1,142.0	1,487.4	56.3	69.2
Leather products, except shoes and other articles	312.2	320.5	967.2	1,131.4
Rubber products	4,364.9	5,035.4	497.5	613.2
Chemical Products	33,797.6	38,908.0	10,801.7	12,183.5
Petroleum & carbon products	4,402.2	4,575.5	33.5	238.2
Non-metal minerals, except Petroleum	3,565.1	4,081.7	1,066.7	1,689.3
Metal industries	13,526.5	15,203.5	5,468.0	5,499.4
Metal products, except mchry & transp. equip.	8,748.3	11,296.7	1,996.3	2,364.1
Machinery, except electric	25,709.8	19,901.6	53.7	236.4
Electric mchry. & accessories	12,914.8	15,404.5	319.1	308.2
Transp. equipment	13,957.8	18,240.3	0.6	1.0
Other Manufactures	6,194.7	6,797.6	559.2	769.3
<u>Non-Spec. Activities</u>	<u>567.5</u>	<u>47.6</u>	<u>7.9</u>	<u>13.5</u>
Grand Total	176,988.7	198,748.3	158,747.6	178,622.3

1/ Preliminary

SOURCE: Indicadores Economicos 1970 - Central Bank

10. Nicaragua: Trade with World & CACM  
( Millions of Dollars )

	<u>1960</u> <u>Value</u>	<u>1964</u> <u>Value</u>	<u>1965</u> <u>Value</u>	<u>1966</u> <u>Value</u>	<u>1967</u> <u>Value</u>	<u>1968</u> <u>Value</u>	<u>1969</u> <u>Value</u>	<u>1970</u> <u>Value</u>
<u>Exports (f.o.b.)</u>								
<u>World Total</u>	<u>62.87</u>	<u>125.18</u>	<u>148.94</u>	<u>142.20</u>	<u>151.68</u>	<u>162.30</u>	<u>158.75</u>	<u>178.62</u>
U. S.	26.87	32.46	35.84	30.61	41.74	44.62	50.60	56.0
CACM	2.53	7.12	12.40	16.17	9.24	24.64	31.68	46.1
Japan	8.68	28.48	47.85	42.27	4.57	42.35	28.87	n.a.
Germany	8.81	24.14	21.26	21.03	20.15	17.81	17.32	n.a.
<u>Imports (c.i.f.)</u>								
<u>World Total</u>	<u>71.71</u>	<u>137.03</u>	<u>160.28</u>	<u>181.92</u>	<u>203.90</u>	<u>184.64</u>	<u>176.99</u>	<u>198.75</u>
U. S.	37.75	64.20	75.53	83.00	87.60	69.58	66.64	72.0
CACM	2.78	14.30	21.39	31.65	42.37	46.17	42.22	50.0
Germany	5.56	10.67	10.37	12.53	13.92	11.19	12.38	n.a.
Japan	4.67	8.31	11.40	9.91	13.38	13.96	12.67	n.a.
<u>Trade Balance</u>								
<u>World Total</u>	- 8.84	- 11.85	- 11.34	- 39.72	- 52.22	- 22.35	- 18.24	- 20.13
U. S.	- 10.88	- 31.74	- 39.69	- 52.39	- 45.85	- 24.95	- 16.05	- 16.0
CACM	- .25	- 7.18	- 8.99	- 15.48	- 24.12	- 21.53	- 10.45	- 3.95
Germany	+ 3.25	+ 13.47	+ 10.89	+ 8.50	+ 6.48	+ 6.62	+ 4.95	n.a.
Japan	4.01	+ 20.17	+ 36.45	+ 33.36	+ 32.19	+ 28.40	+ 16.20	n.a.

SOURCE: (1) Memorias: Dirección General de Aduanas; (2) Comercio Exterior: Central Bank and Ministry of Economy  
(3) Quarterly Bulletin, Central Bank.

11. Nicaragua: International Reserves as of December 31, 1970  
(Millions of Dollars)

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Gold and Foreign Exchange Holdings						
Central Bank	57.2	57.9	27.2	48.27	43.66	48.70
Commercial Banks	5.4	7.0	4.1	5.97	4.44	5.67
Total Gross Reserves	62.6	64.9	31.3	54.24	48.09	54.37
Short Term Obligations						
Central Bank	9.41	8.59	- 2.80	16.33	16.46	4.36
Commercial Banks	24.97					
Total	34.38	48.85	35.69	53.13	53.48	39.28
Net Reserves, exclu. IMF Position	36.56	22.55	- 9.10	15.36	7.86	15.09
Net Position with IMF	- 8.43	- 6.49	4.75	- 14.25	- 13.25	- 8.00
Net Reserves, incl. IMF Position	28.13	16.06	- 4.35	1.11	- 5.39	7.09

SOURCE: Central Bank

12. Nicaragua: Government Income & Revenues, 1965-70

	<u>1965</u>	<u>Thousands of Cordobas</u>		<u>Actual 1968 Million</u>	<u>Actual 1969 Million</u>	<u>Prel. Actual 1970</u>
		<u>1966</u>	<u>1967</u>			
<b>A. DIRECT TAXATION</b>						
Income Tax	53,217	61,280	69,503	52.3	50.1	55.1
Personal Property	10,962	11,729	12,500	13.0	12.8	14.4
Real Estate	16,006	18,891	19,645	25.6	23.4	30.8
Real Estate Transfer	1,792	2,311	2,616	2.8	3.2	4.1
Capital	593	225	91	-	-	-
Inheritance	1,223	1,471	2,000	2.1	1.4	2.0
Vehicle Registration	3,050	3,428	4,285	3.8	4.5	4.2
Sub-Total	<u>86,843</u>	<u>99,335</u>	<u>110,646</u>	<u>99.6</u>	<u>95.4</u>	<u>110.6</u>
<b>B. INDIRECT TAXES</b>						
Import Duties (Cons. fees)	169,205	157,898	152,497	150.1	135.9	158.1
Export Duties	7,551	9,792	10,348	7.6	7.3	7.8
Consumer and Excise Taxes	140,675	154,697	160,802	167.4	201.3	225.5
Fiscal Monopolies (gross)	6,859	7,271	7,520	7.9	8.0	8.7
Other Revenues (post, tel, telephone, other misc.)	32,264	34,101	31,535	35.7	41.3	51.3
Sub-Total	<u>356,554</u>	<u>363,759</u>	<u>362,702</u>	<u>368.7</u>	<u>393.8</u>	<u>451.4</u>
<b>TOTAL ORDINARY REVENUE</b>						
<u>Reimbursements, etc.:</u>						
Nama Road	166	116	084			
Inter-American Highway	-	4,151	2,897			
Other Special Receipts	706	7,335	5,274	1.8	3.0	8.8
Sub-Total	<u>872</u>	<u>11,602</u>	<u>8,251</u>	<u>1.8</u>	<u>3.0</u>	<u>8.8</u>
<b>TOTAL ALL REVENUES</b>	<u><u>444,269</u></u>	<u><u>474,696</u></u>	<u><u>481,549</u></u>	<u><u>470.1</u></u>	<u><u>492.2</u></u>	<u><u>570.8</u></u>

SOURCE: Central Bank for 1968-1970; previous years from Government Accounting Office; adjusted by USAID/N.

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(Millions of Cordobas)

	1965	1966	1967	1968	1969	1970
Ordinary Revenues	443.4	467.8	476.0	465.3	429.9	570.8
Current Expenditures	321.7	377.3	448.8	429.6	460.9	485.0
<u>Surplus on Current Account</u>	<u>121.7</u>	<u>90.5</u>	<u>27.2</u>	<u>35.7</u>	<u>32.0</u>	<u>85.8</u>
Investment	113.0	147.0	147.2	96.6	113.3	164.5
<u>Total Expenditures</u> <u>1/</u>	<u>434.7</u>	<u>524.3</u>	<u>596.0</u>	<u>526.2</u>	<u>574.2</u>	<u>649.5</u>
Deficit/Surplus	+ 8.7	- 56.5	-120.0	- 60.9	- 81.3	- 78.7
Domestic Borrowing (net)	- 0.4	- 5.8	11.2	4.9	6.4	17.2
Foreign Borrowing (net)	15.7	49.1	52.6	51.1	28.7	62.0
Drawing on Bank Deposits	-	-	-	-	9.1	-
Transfers and Others	0.9	11.6	8.3	-	-	-
Net Change in Cash Balances <u>2/</u>	- 31.5	1.6	51.6	4.9	37.1	-
Amortization (memo item)	- 8.7	56.5	120.0	60.9	83.6	-
	17.2	22.9	23.9	29.2	30.0	31.8

1/ Monopoly expenses excluded from both revenues and expenditures; (b) Amortization not included in expenditures; (c) Quotas paid as capital contribution to international lending agencies.

2/ This item includes Floating Debt (uncashed GON checks).

14. Nicaragua: Factors Affecting the Money Supply, 1966-70  
 (Millions of Cordobas)

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
a) Foreign Assets (net)	24.2	-163.9	-239.6	-290.9	-228.9
b) Domestic Credit	934.3	1,118.2	1,188.7	1,291.5	1,358.9
1. Claims on Government (net)	8.1	49.3	32.9	43.2	39.2
2. Claims on Official Entities	40.7	61.7	53.7	78.2	72.5
3. Claims on Private Sector	885.6	1,007.1	1,102.2	1,170.1	1,247.2
c) Quasi-Money	195.2	226.1	258.0	260.9	310.0
d) Other Items (net)	198.2	187.5	183.5	204.4	220.0
Money Supply	<u>565.1</u>	<u>540.7</u>	<u>507.6</u>	<u>535.3</u>	<u>600.0</u>
Demand Deposits	338.6	318.4	299.1	316.8	349.0

SOURCE: IMF for 1966 and 1967; Central Bank for 1968, 1969 and 1970.

15. Nicaragua: Commercial Bank Loans to the Private Sector  
(Thousands of Cordobas)

	<u>1968</u>			<u>1970</u>		<u>1971</u>	
	DECEMBER			JANUARY		FEBRUARY	
Commercial	131,369	140,518	140,675	143,517	146,002	140,272	146,435
Short-term	131,369	140,518	140,675	143,517	146,002	140,272	146,435
Long-term	-	-	-	-	-	-	-
Agricultural	442,935	458,998	472,856	464,740	468,883	442,923	434,484
Short-term	310,986	297,176	263,830	301,376	259,858	274,967	225,090
Long-term	131,949	161,822	209,026	163,364	209,025	167,956	209,394
Livestock	225,267	211,122	222,715	208,619	221,392	205,268	224,392
Short-term	58,364	56,968	62,170	55,731	61,144	54,227	63,785
Long-term	166,903	154,154	160,545	152,888	160,248	151,041	160,607
Industrial	273,878	301,808	318,614	310,727	325,578	315,082	326,750
Short-term	173,776	180,143	169,536	189,608	175,560	191,466	177,206
Long-term	100,102	121,665	149,078	121,119	150,018	123,616	149,544
Other	8,569	8,520	654	6,897	645	655	638
Short-term	1,414	1,362	-	291	-	-	-
Long-term	7,155	7,158	654	6,606	645	655	638
Total	1,082,018	1,120,966	1,155,514	1,134,500	1,162,500	1,104,200	1,132,699
Short-term	675,909	676,167	636,211	690,523	642,564	660,932	612,516
Long-term	406,109	444,799	519,303	443,977	519,936	443,268	520,183

SOURCE: Indicadores Economicos 1970 - Central Bank

16. Nicaragua: Monetary Panorama  
(Thousands of Cordobas)

	<u>1969</u>	<u>1970</u>	<u>Diff.</u>
1. International Assets (net)	-290,897	-228,918	61,979
(a) International Assets	523,172	623,629	100,457
Central Bank	492,119	583,913	91,794
Commercial Banks	31,053	39,716	8,663
(b) International Liabilities	814,069	852,547	38,478
Central Bank	273,022	314,892	41,870
Commercial Banks	541,047	537,655	- 3,392
2. Internal Credit	1,291,510	1,358,912	67,402
(a) Central Government (net)	43,231	39,243	- 3,988
Credits	69,777	65,965	- 3,812
Deposits	26,546	26,722	176
(b) Official Agencies	78,203	72,496	- 5,707
Loans	77,820	72,175	- 5,645
Investments	383	321	- 62
(c) Private Sector	1,170,076	1,247,173	77,097
Loans	1,120,969	1,155,514	34,545
Investments	49,107	91,659	42,552
3. Other Assets (net)	86,870	105,982	19,112
4. ASSETS = LIABILITIES	1,087,483	1,235,976	148,493
5. Money in Circulation	535,288	600,020	64,732
(a) Bills and Coins	218,477	250,956	32,479
(b) Sight Deposits	294,198	330,200	36,002
(c) Other Monetary Liabilities	22,613	18,864	- 3,749
6. Non-Monetary Liabilities	260,896	309,960	49,064
(a) Savings & Long-term Deposits	224,570	267,073	42,503
(b) Other	36,326	42,887	6,561
7. Capital and Reserves	291,299	325,996	34,697

SOURCE: Indicadores Economicos 1970 - Central Bank

17. Nicaragua: Industrial Production Value  
(Millions of Cordobas)

	Value			Structure		
	1965	1969	1970	1965	1969	1970
Foodstuffs	601.7	1,040.9	1,203.6	42.92	46.13	47.41
Beverages	124.8	194.2	207.4	8.90	8.61	8.17
Tobacco	60.8	77.1	19.8	4.34	3.42	0.78
Textiles	71.8	93.5	107.2	5.12	4.14	4.22
Shoes and Dress Garments	84.5	93.9	102.2	6.03	4.16	4.03
Wood and Cork	30.3	56.1	64.1	2.16	2.49	2.52
Furniture and Accessories	20.1	42.5	46.1	1.43	1.88	1.82
Paper and Paper Products	14.8	27.7	27.3	1.06	1.23	1.07
Printing, Publishing	15.3	24.0	26.7	1.09	1.06	1.05
Hide and Hide Products	16.6	24.2	27.9	1.18	1.07	1.10
Rubber Products	6.2	12.8	14.1	0.44	0.57	0.56
Chemical Substances and Products	160.2	246.8	305.9	11.43	10.94	12.05
Petroleum Products	41.8	66.0	91.5	2.98	2.93	3.60
Mineral Products - non-metallic	39.9	70.4	81.2	2.85	3.12	3.20
Metal Products	65.1	83.3	98.7	4.64	3.69	3.89
Machinery and non-electrical equipment	4.7	28.3	26.9	0.34	1.25	1.06
Transportation equipment	13.7	17.8	27.2	0.98	0.79	1.07
Various	29.5	56.8	60.9	2.10	2.52	2.40
<b>TOTAL</b>	<b>1,401.8</b>	<b>2,256.3</b>	<b>2,538.7</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

18. Nicaragua: Value of Agricultural Production <sup>1/</sup>  
(Thousands of Cordobas)

(Current Prices)	<u>1960</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Corn	136,554	507,351	404,349	329,138
Coffee	101,473	173,817	171,681	253,836
Bananas	39,593	103,226	84,079	48,100
Corn	36,007	111,569	129,083	166,570
Rice	44,600	106,871	121,848	132,915
Sugar Cane	33,414	67,391	71,677	76,902
Beans	41,783	73,183	77,066	118,246
Sorghum	14,275	24,703	28,487	27,471
Tobacco	2,759	14,936	18,822	23,107
Sesame	10,154	13,491	10,947	10,570
Other	316,233	275,420	286,882	294,610
Totals	776,845	1,471,958	1,405,188	1,450,273

SOURCE: Indicadores Economicos 1970 - Central Bank

<sup>1/</sup> Series revised and adjusted to reflect calendar year.

19. Nicaragua: Area Cultivated (Manzanas)

<u>MAJOR CROPS</u>	<u>1960</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Cotton	94,756	208,373	191,357	166,875
Coffee	116,989	148,868	143,126	147,692
Bananas	11,508	3,402	3,507	3,432
Corn	187,265	345,147	366,496	348,201
Rice	29,619	47,807	53,453	56,693
Sugar Cane	30,832	42,878	47,680	47,786
Beans	55,866	105,652	104,098	113,391
Sorghum	72,048	80,273	80,330	69,496
Tobacco	556	1,704	1,300	1,306
Sesame	22,385	19,801	16,530	14,112

SOURCE: Indicadores Economicos 1970 - Central Bank

Note: 1 Manzana - 0.7 hectares

(See Table 20 for Production Data)

20. Nicaragua: Indexes of Development

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
1. GNP (Constant 1958) Million Cordobas	2,458	2,617	2,889	3,098	3,284	3,807	3,918	4,118	4,342	4,472	
1a. Per Capita (Constant 1958)	1,742	1,801	1,931	2,010	2,065	2,320	2,318	2,356	2,407	2,402	
2. Agric. production-crops											
(a) Old (Thous. Metric Tons):											
Rice, paddy	33	34	39	33	44	48	53	59	67	85	107
Sorghum	39	39	50	49	42	47	46	49	52	56	50
Corn	99	119	123	150	142	156	169	174	200	213	228
Beans, dry	22	22	32	29	32	36	39	42	43	44	40
Cotton	28	32	55	74	92	123	114	113	101	92	68
Cotton, seed	53	59	99	128	164	206	185	186	166	151	
Coffee	22	29	26	30	32	38	31	31	34	37	44
(b) New (Thous. Metric Tons):											
Tobacco	1	2		3	3	3	3	3	1.4	1.7	1.5
Bananas				2	3	8	14	34	38	25	
3. Other New Products: (Thous. Metric Tons)											
Beef	18	20	24	24	33	36	34	28	34	35	38
Shrimps						1.7	2.4	2.7	3.0	3.6	
4. GDP (by sector) (Million \$)											
Total (Constant 1958)	2,473					3,913	4,033	4,246	4,324	4,567	4,737
Agriculture	914	37.0				1,278	1,184	1,188	1,246	1,305	1,301
Mining	42	1.7				55	60	56	55	61	50

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Manufacturing	303	12.1									
Construction	104	4.3				500	563	641	720	828	907
Other	1,110	44.9				126	163	148	144	163	161
<b>5. Electric Power (Million KWH)</b>						<b>1,954</b>	<b>2,063</b>	<b>2,213</b>	<b>2,282</b>	<b>2,210</b>	<b>2,318</b>
	180	200	210	250	280	311	366	411	484	551	571
<b>6. Health Facilities:</b>											
Physicians	524	560	600	635	670	698	833	874	883	891	n.a.
Graduate Nurses	200	225	263	290	310	353	380	358	403	662	n.a.
Hospital Beds	3,328	3,350	3,400	3,500	3,600	3,753	4,396	4,410	4,795	4,805	4,764
Health & Family Planning Centers								71	72	88	118
<b>7. Classrooms</b>		3,650	3,705	3,850	4,000	4,150	4,298	4,696	5,100	5,358	5,647
<b>8. Roads - Miles:</b>											
<b>Total</b>	<b>3,829</b>	<b>4,036</b>	<b>4,045</b>	<b>4,050</b>	<b>4,051</b>	<b>4,027</b>	<b>4,144</b>	<b>4,277</b>	<b>6,268</b>	<b>6,718</b>	<b>6,960</b>
Paved	419	464	473	498	504	548	652	675	696	709	1,262
Other Improved	1,175	1,336	1,336	1,325	1,320	1,304	1,317	1,427	2,348	2,567	2,237
Unimproved	2,235	2,236	2,236	2,227	2,227	2,175	2,175	2,175	3,223	3,442	3,361

SOURCE: S. S. Tables