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DAMAGE CAUSED BY HURRICANE JOAN IN NICARAGUA: ITS EFFECTS ON ECONOMIC DEVELOPMENT AND LIVING CONDITIONS, AND REHABILITATION AND RECONSTRUCTION NEEDS

Rehabilitation and reconstruction project outlines

88-12-1782

CONTENTS

SUMMARY OF TOTAL INVESTMENTS

(Millions of US dollars)

	Investment	External financing
Rehabilitation stage	55.8	54.3
Reconstruction stage	449.4	370.9
Disaster prevention and forecasting	1.7	1.7
Total	506.9	426.9

I. REHABILITATION STAGE

SUMMARY OF INVESTMENTS AND FINANCING IN THE REHABILITATION STAGE

(Thousands of US dollars)

	Objectives	Investment	External financing
1.	Reactivation of the peasant economy	20 500	19 975
2.	Provision of fishing vessels and equipment for small-scale fisheries	1 200	1 100
3.	Health campaign	13 230	12 400
4.	Rehabilitation of bridges	15 000	15 000
5.	Technical co-operation in the evaluation of ecological impact and formulation of projects relating to forest restoration	500	500
6.	Technical co-operation relating to the revision of macroeconomic policies	100	100
7.	Technical co-operation relating to the formulation of reconstruction projects	250	250
8.	Preinvestment fund for reconstruction projects	5 000	5 000
	Total	55 780	54 325

1. REACTIVATION OF THE PEASANT ECONOMY

SUMMARY: REACTIVATION OF THE PEASANT ECONOMY

(Thousands of US dollars)

Number	Title	Investment	External financing
I.1.1	Reactivation of the peasant economy in the Fifth Region and Special Autonomous Zone 11	17 250	17 000
I.1.2	Reactivation of the peasant economy: Fourth Region	1 000	900
I.1.3	Reactivation of the peasant economy: Sixth Region	2 250	2 075
	Total	20 500	19 975

No. I.1.1

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Reactivation of the peasant economy in the Fifth Region and Special Autonomous Zone II

Project objectives: To re-establish minimum living conditions, including the production capacity of the most affected peasant families.

Description of activities to be carried out: Establishment of a food assistance programme and of means for carrying it out and maintenance of that programme until the winter harvest of August 1989. Collaboration in a programme for the reconstruction of housing through the supply of building materials (lumber, zinc sheets, nails, tools, etc.).

Expected project output: Restoration of the standard of living of the peasants affected due to their being provided with the means of production they need to return to and, where possible, to surpass, their previous standard.

Total investment required: US$ 17 250 000

Breakdown (US$)		Financing (US$) 17 250 000	
- Manpower:	250 000	Local:	250 000
- National inputs:	2 000 000	External:	17 000 000
- Imported inputs:	15 000 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform, regional delegation of the government of the Fifth Region and Special Autonomous Zone II.

Tentative duration: 10 months

Estimated starting date: December 1988

Special observations:

No. I.1.2

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Reactivation of the peasant economy: Fourth Region

Project objectives: To re-establish minimum living conditions including the production capacity of peasant families.

Description of activities to be carried out: Establishment of a food assistance programme and of the means for carrying it out and maintenance of that programme until the winter harvest. Collaboration in a programme for the reconstruction of housing through the supply of building materials.

Expected project output: Restoration of the standard of living of the peasants affected due to their being provided with the means of production they need to return to and, where possible, to surpass their previous standard.

Total investment required: US$ 1 000 000

Breakdown (US$)		Financing (US$)	1 000 000
· Manpower:	100 000	Local:	100 000
· National inputs:	50 000	External:	900 000
· Imported inputs:	850 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform, Department of Agrarian Reform, and government authorities of the Fourth Region

Tentative duration: 10 months

Estimated starting date: December 1988

Special observations:

No. I.1.3

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Reactivation of the peasant economy: Sixth Region

Project objectives: To re-establish minimum living conditions including the production capacity of peasant families.

Description of activities to be carried out: Establishment of a food assistance programme and of the means for carrying it out and the maintenance of that programme until the winter harvest. Collaboration in a programme for the resconstruction of housing through the supply of building materials.

Expected project output: Restoration of the standard of living of the peasants effected due to their being provided with the means of production they need to return to and, where possible, to surpass their previous standard.

Total investment required: US$ 2 250 000

Breakdown (US$)		Financing (US$)	2 250 000
· Manpower:	175 000	Local:	175 000
· National inputs:	250 000	External:	2 075 000
· Imported inputs:	1 825 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform, Department of Agrarian Reform and government authorities of the Sixth Region.

Tentative duration: 10 months

Estimated starting date: December 1988

Special observations:

2. PROVISION OF FISHING VESSELS AND EQUIPMENT FOR SMALL-SCALE FISHERIES

No. I.2

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of artesanal fisheries on the Atlantic coast

Project objectives: To return to previous levels of artesanal fishing in Bluefields Bay, the Laguna de Perlas basin, La Barra de Río Grande and Corn Island.

Description of activities to be carried out: Replacing the artesanal fishery infrastructure with new machinery, equipment, tools, etc. To provide equipment, inputs and other products needed in order to reactivate artesanal fisheries.

Expected project output: Provision of food to the population, the generation of exports and the overcoming of the unemployment caused by the hurricane.

Total investment required: US$ 1 200 000

Breakdown (US$)		Financing (US$)	1 200 000
· Manpower:	50 000	Local:	100 000
· National inputs:	50 000	External:	1 100 000
· Imported inputs:	1 100 000		

National agency in charge: National Fisheries Institute

Tentative duration: 6 months

Estimated starting date: January 1989

Special observations:

3. HEALTH CAMPAIGN

SUMMARY: HEALTH CAMPAIGN

(Thousands of US dollars)

Number	Title	Investment	External financing
I.3.1	Integral recovery of health conditions: Fifth Region	5 000	4 900
I.3.2	Integral recovery of health conditions in the South Atlantic Autonomous Region (RAAS)	6 000	5 500
I.3.3.	Strengthening the system for monitoring water quality	330	260
I.3.4	Controlling rabies in animals	640	600
I.3.5	Urgent strengthening of the national capacity to provide emergency medical attention	360	360
I.3.6	Urgent strengthening of the national malaria programme	900	780
	Total	13 230	12 400

No. I.3.1

PROJECT OUTLINE

Sector: Health

Subsector: Organization and development

Project title: Integral recovery of health conditions: Fifth Region

Project objectives: To re-establish the integral health programme of the municipalities of Boaco, Chontales and Zelaya Central for a population of 50 000 affected inhabitants, and thus to avoid a deterioration in the health of this population.

Description of activities to be carried out: a) Provision of the means for recovering and operating the programmes for waste collection, vector control and immunization; b) restoration of the 40 most severely deteriorated health units (civil works and equipment); and c) to enlarge the motor vehicle stock.

Expected project output: a) Recovery and improvement of hygienic and sanitary conditions in the Fifth Region; b) prevention of an increase in mother and child morbidity and mortality; c) lessening of the risks of epidemics of diseases which can be prevented by immunization; and d) support to the re-establishment of the productive activities of the affected population.

Total investment required: US$ 5 000 000

Breakdown (US$)		Financing (US$) 5 000 000	
· Manpower:	100 000	Local:	100 000
· National inputs:	500 000	External:	4 900 000
· Imported inputs:	4 300 000		

National agency in charge: Regional government

Tentative duration: 18 months

Estimated starting date: January 1989

Special observations:

No. 1.3.2

PROJECT OUTLINE

Sector: Health

Subsector: Organization and development

Project title: Integral recovery of health conditions in the South Atlantic Autonomous Region (RAAS)

Project objectives: a) To re-establish the integral health programmes in Bluefields, La Cruz del Río Grande and Corn Island for a population of 60 000 inhabitants, and b) to keep the health of that population from deteriorating.

Description of activities to be carried out: a) Provision of the means for recovering and operating the programmes for waste disposal, vector control, and immunization; and b) restoration of the 12 most severely affected health-service units (two hospitals, five health centres, five health stations).

Expected project output: a) Recovery and improvement of hygienic and sanitary conditions in the South Atlantic Autonomous Region; b) prevention of an increase in mother and child morbidity and mortality; c) lessening of the risks of epidemics, of diseases which can be prevented by immunization; and d) support for the re-establishment of the economically productive activity of the affected population.

Total investment required: US$ 6 000 000

Breakdown (US$)		Financing (US$)	6 000 000
- Manpower:	180 000	Local:	500 000
- National inputs:	320 000	External:	5 500 000
- Imported inputs:	5 500 000		

National agency in charge: Autonomous regional government

Tentative duration: 18 months

Estimated starting date: January 1989

Special observations:

No. I.3.3

PROJECT OUTLINE

Sector: Health

Subsector: Water and sanitation

Project title: Strengthening of the system for monitoring water quality

Project objectives: To establish a system for sampling the sources of water supply and the water distribution network to study the bacteriological and physical-chemical quality of the water.

Description of activities to be carried out: a) Providing the equipment and materials needed to monitor water quality in the zones affected; and b) providing technical assistance in the formulation and implementation of a plan for the systematic sampling of the water source and distribution network.

Expected project output: Systematic knowledge concerning the bacteriological and physical-chemical quality of the water for the purpose of taking action to prevent water-transmitted diseases and of treating such diseases should they occur.

Total investment required: US$ 330 000

Breakdown (US$)		Financing (US$)	330 000
- Manpower:	20 000	Local:	70 000
- National inputs:	50 000	External:	260 000
- Imported inputs:	260 000		

National agency in charge: Ministry of Health

Tentative duration: 12 months

Estimated starting date: January 1989

Special observations:

No. 1.3.4

PROJECT OUTLINE

Sector: Health

Subsector: Prevention and control

Project title: Controlling rabies in animals

Project objectives: To prevent the spread of rabies in animals.

Description of activities to be carried out: a) Erecting sanitary barriers in population nuclei by administering anti-rabies vaccinations; and b) strengthening the epidemiological control of persons wounded by animals suspected of having rabies and administering vaccines and serums in confirmed cases.

Expected project output: Prevention of the infiltration of rabies affecting wildlife and of the emergence of this disease, thereby helping to preserve human life.

Total investment required: US$ 640 000

Breakdown (US$)		Financing (US$)	640 000
- Manpower:	10 000	Local:	40 000
- National inputs:	30 000	External:	600 000
- Imported inputs:	600 000		

National agency in charge: Ministry of Health

Tentative duration: 12 months

Estimated starting date: January 1989

Special observations: The fight against rabies should be intensive and have wide coverage so that the disease can be effectively controlled.

No. I.3.5

PROJECT OUTLINE

Sector: Health

Subsector: Organization and development

Project title: Urgent strengthening of the national capacity to provide emergency medical attention.

Project objectives: To support the national capacity to provide the emergency medical services needed because of the immediate and real increase in disease risk due to the cumulative deterioration suffered by the sanitary situation of the country.

Description of activities to be carried out: a) Providing the medical services with 15 ambulances with the capacity to operate in urban and rural ares and five boats supplied with out-board motors; and b) acquiring spare parts for the ambulances and out-board motors.

Expected project output: A decrease in the risk of death following the disaster.

Total investment required: US$ 360 000

Breakdown (US$)		Financing (US$)	360 000
- Manpower:		Local:	
- National inputs:		External:	360 000
- Imported inputs:	360 000		

National agency in charge: Ministry of Health

Tentative duration:

Estimated starting date: As soon as possible

Special observations:

No. I.3.6

PROJECT OUTLINE

Sector: Health

Subsector: Prevention and control

Project title: Urgent strengthening of the national malaria programme

Project objectives: a) To intensify action to prevent outbreaks of malaria in areas affected by hurricane Joan and to prevent and increase in mortality caused by malaria; and b) to diminish the risk of malaria becoming a permanent scourge.

Description of activities to be carried out: a) Carrying out a rigorous control of the malaria transmission vector through the application of the measures usually employed to combat mosquito larvae and adult mosquitoes, i.e., 1) fumigating the most severely affected localities with residual-action insecticides, and 2) developing action to combat larvae in the same localities.

Expected project output: Prevention of the propagation of malaria and a decrease in morbidity and mortality from this disease, thereby contributing to the more effective use of the labour force.

Total investment required: US$ 900 000

Breakdown (US$)		Financing (US$)	900 000
· Manpower:	80 000	Local:	120 000
· National inputs:	250 000	External:	780 000
· Imported inputs:	570 000		

National agency in charge: Ministry of Health

Tentative duration: 10 months

Estimated starting date: December 1988

Special observations:

4. REHABILITATION OF BRIDGES

No. I.4

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Road network

Project title: Temporary rehabilitation of some essential bridges

Project objectives: To re-establish road links before the onset of winter in August 1989.

Description of activities to be carried out: To install metallic bridges for emergency use as temporary substitutes for old bridges (Waslala 1 and 2, Mulukuku, Mayari, La Barranca, El Arroyo, La Cusuca, Piedra Colorado, Tepenaguazapa and several other short-span bridges).

Expected project output: Maintenance of the continuity of the road network during the winter season, thereby allowing traffic to flow without obstacles and detours.

Total investment required: US$ 15 000 000

Breakdown (US$)		Financing (US$)	15 000 000
- Manpower:		Local:	
- National inputs:		External:	15 000 000
- Imported inputs:	15 000 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations:

5. TECHNICAL CO-OPERATION IN ASSESSING ECOLOGICAL IMPACT AND FORMULATION OF PROJECTS ON FOREST RESTORATION

No. I.5

PROJECT OUTLINE

Sector: Technical co-operation

Subsector: Evaluation and preinvestment

Project title: Environmental impact assessment of the hurricane and the formulation of forest and timber reclamation projects

Project objectives: To utilize the forest timber affected by the hurricane.

Description of activities to be carried out: a) The interpretation of aerial photographs of the affected forests; b) field work for assessing the ecological impact; and c) the formulation of specific proposals concerning activities involved in the reclamation of forests and the utilization of the timber.

Expected project output: Project proposals for forest rehabilitation and timber utilization.

Total investment required: US$ 500 000

Breakdown (US$)		Financing (US$)	500 000
- Manpower:		Local:	
- National inputs:		External:	500 000
- Imported inputs:	500 000		

National agency in charge: DIRENA

Tentative duration: 6 months

Estimated starting date: As soon as possible

Special observations:

6. TECHNICAL CO-OPERATION IN THE REVISION OF MACROECONOMIC POLICIES

No. I.6

PROJECT OUTLINE

Sector: Technical co-operation

Subsector: Policies

Project title: Revision of macroeconomic policies

Project objectives: To reformulate short-term macroeconomic policies so as to incorporate the changes in prevailing conditions resulting from the effects of the hurricane.

Description of activities to be carried out: Technical co-operation missions.

Expected project output: New short-term macroeconomic policies.

Total investment required: US$ 100 000

Breakdown (US$)		Financing (US$)	100 000
· Manpower:		Local:	
· National inputs:		External:	100 000
· Imported inputs:	100 000		

National agency in charge: Department of Programming and the Budget

Tentative duration: 6 months

Estimated starting date: As soon as possible

Special observations:

7. TECHNICAL CO-OPERATION IN THE FORMULATION OF RECONSTRUCTION PROJECTS

No. 1.7

PROJECT OUTLINE

Sector: Technical co-operation

Subsector: Preinvestment

Project title: Reconstruction projects formulation

Project objectives: To facilitate the financing of reconstruction investment projects.

Description of activities to be carried out: The formulation of reconstruction projects.

Expected project output: Documents concerning specific sectoral reconstruction projects.

Total investment required: US$ 250 000

Breakdown (US$)		Financing (US$) 250 000	
- Manpower:		Local:	
- National inputs:		External:	250 000
- Imported inputs:	250 000		

National agency in charge: Department of Programming and the Budget and other sectoral agencies.

Tentative duration: 1 year

Estimated starting date: As soon as possible

Special observations:

8. PREINVESTMENT FUND FOR RECONSTRUCTION PROJECTS

No. I.8

PROJECT OUTLINE

Sector: Financial

Subsector: Preinvestment

Project title: Preinvestment fund for the assessment of reconstruction projects in the affected areas

Project objectives: To prepare feasibility studies concerning the crop-farming, stock-raising, agroindustrial, small and medium-scale enterprise, industrial fishery, self-employed or small-scale fishing and mining sectors and subsectors.

Description of activities to be carried out: a) A review of sectoral diagnostic analyses; b) a provisional prioritization of the projects to be undertaken; c) the formulation of terms of reference; d) the identification and recruitment of consultants; and e) activity co-ordination and follow-up.

Expected project output: A portfolio of economically viable projects; a knowledge of alternative sources of funding; the availability of reliable information for use in presenting development strategies and investment programmes.

Total investment required: US$ 5 000 000

Breakdown (US$)		Financing (US$) 5 000 000	
- Manpower:	3 000 000	Local:	
- National inputs:	1 000 000	External:	5 000 000
- Imported inputs:	1 000 000		

National agency in charge: Nicaraguan Investment Fund

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations: Adjustments will be made on the basis of the project outlines identified in the course of the diagnostic study.

II. RECONSTRUCTION STAGE

SUMMARY OF INVESTMENTS AND FINANCING RELATING TO THE RECONSTRUCTION STAGE

(Millions of US dollars)

Number	Sector	Investments	External financing
1.	Housing	153.6	130.0
2.	Health	2.7	2.5
3.	Education	4.2	3.3
4.	Agriculture and livestock	51.2	37.5
5.	Industry	46.3	40.1
6.	Trade	25.6	20.3
7.	Transport and communications	106.0	95.7
8.	Water and sanitation	35.7	30.0
9.	Energy	23.5	11.0
10.	Public buildings	0.6	0.5
	Total	449.4	370.9

1. HOUSING SECTOR

SUMMARY: HOUSING SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.1.1	Construction of 220 prefabricated dwellings on Corn Island	1 320	1 020
II.1.2	Construction of 1 000 prefabricated dwellings in the Municipality of Bluefields	6 000	5 400
II.1.3	Construction of 1 000 dwellings in the Municipality of Bluefields using local materials: First stage	7 000	4 900
II.1.4	Construction of 3 500 dwellings in the Municipality of Bluefields and RAAS using local materials: Second stage	22 750	17 050
II.1.5	Installation of a stone-crushing plant at Bluefields	850	700
II.1.6	Construction of 500 rural wooden dwellings in the South Atlantic Autonomous Region (RAAS): First stage	1 250	750
II.1.7	Construction of 2 000 rural wooden dwellings in the South Atlantic Autonomous Region (RAAS): Second stage	4 600	2 900
II.1.8	Improvement of 2 800 dwellings in the South Atlantic Autonomous Region (RAAS)	2 500	1 900
II.1.9	Installation of a plant for processing lumber for construction purposes at Bluefields	700	550
II.1.10	Reconstruction of 10 000 dwellings in the Fifth Region: First stage	8 800	7 550
II.1.11	Construction of 10 000 dwellings in the Fifth Region	60 000	56 000
II.1.12	Improvement of 14 000 dwellings in the Fifth Region	12 600	9 500
II.1.13	Installation of a sawmill and plant for processing lumber for construction purposes at El Rama: Fifth Region	1 770	1 530
II.1.14	Reconstruction of 2 000 dwellings in the Second, Fourth and Sixth Regions	7 900	6 700
II.1.15	Feasibility study on increasing the production of pozzolanic cement in Nicaragua	400	350
II.1.16	Evaluation of the ceramic products (bricks) industry with emphasis on materials for the construction of dwellings	160	150
II.1.17	Integral technical assistance in the preparation of a development strategy for housing for lower-income sectors	35	30
II.1.18	Reparation of damaged household equipment	15 000	13 000
	Total	153 635	129 980

No. II.1.1

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 220 prefabricated dwellings on Corn Island

Project objectives: To provide a housing solution to approximately 25% of the families on Corn Island who lost their houses. To establish the basis for the execution of a second housing project, applying technology appropriate to the region, and covering the entire population of Corn Island.

Description of activities to be carried out: Production of prefabricated elements at Bluefields and their transportation to Corn Island. Preparation of terrain and urbanization of 10 x 15 metres lots in an area of approximately 5 hectares. Construction of 220 prefabricated concrete dwellings. All the activities will be carried out by self-help construction methods. Evaluation of the typology of constructed housing.

Expected project output: Construction of 220 dwellings in an adequately urbanized area. Local installed capacity for the construction of new housing.

Total investment required: US$ 1 320 000

Breakdown (US$)		Financing (US$)	1 320 000
- Manpower:	264 000	Local:	300 000
- National inputs:	586 000	External:	1 020 000
- Imported inputs:	470 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 1 year

Estimated starting date: February 1989

Special observations: External technical assistance from an expert in housing construction will be required for the duration of the project. Because of the savings resulting from the prefabrication process and lower manpower and administrative costs the project is based on unit costs which are lower than those incurred in formal construction.

No. II.1.2

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 1 000 prefabricated houses in the Municipality of Bluefields

Project objectives: To provide an adequate housing solution to approximately 15% of the families in Bluefields who lost their houses. To strengthen the installed capacity at Bluefields for prefabricating concrete components for use in the construction of housing. To evaluate the benefits of prefabricated concrete construction in the Atlantic region.

Description of activities to be carried out: Expansion of the production capacity of the prefabrication plant at Bluefields. Urbanization of approximately 20 hectares in the Municipality of Bluefields. Prefabrication of concrete elements and the construction of 1 000 dwellings. All the activities will be carried out with self-help construction methods and with external support. Evaluation of the typology of constructed housing.

Expected project output: Construction of 1 000 dwellings in an adequately urbanized area. Local installed capacity for the construction of new dwellings.

Total investment required: US$ 6 000 000

Breakdown (US$)		Financing (US$)	6 000 000
- Manpower:	1 200 000	Local:	600 000
- National inputs:	1 200 000	External:	5 400 000
- Imported inputs:	3 600 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 1 year

Estimated starting date: January 1989

Special observations: Outside technical assistance from experts in housing construction and the production of prefabricated components will be required. The project is based on unit costs which are lower than those incurred in formal construction thanks to the savings resulting from the prefabrication process and lower manpower and administrative costs.

No. II.1.3

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 1 000 dwellings in the Municipality of Bluefields using local materials. First stage

Project objectives: To provide an adequate housing solution to approximately 15% of the families in Bluefields who lost their houses. To encourage the use of local materials (wood) in the construction of different types of dwellings (only wood, wood and rubble, wood and prefabricated elements, etc.), with the purpose of lowering costs and saving national foreign currency reserves. To evaluate the behaviour and acceptance of various forms of wood construction.

Description of activities to be carried out: Design of typologies of housing to be built, in consultation with the users. Urbanization of approximately 20 hectares in the Municipality of Bluefields. Preparation and processing of building materials. Organization of the distribution of materials and credits for construction. Self-help construction of 1 000 dwellings. Evaluation of the typology of constructed housing.

Expected project output: Construction of 1 000 dwellings in an adequately urbanized area. A set of house designs suitable for local conditions. Local installed capacity for the production of materials and the construction of new dwellings.

Total investment required: US$ 7 000 000

Breakdown (US$)		Financing (US$) 7 000 000	
- Manpower:	2 100 000	Local:	2 100 000
- National inputs:	2 400 000	External:	4 900 000
- Imported inputs:	2 500 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 18 months

Estimated starting date: February 1989

Special observations: External technical assistance from experts in housing construction, building materials, and community participation will be required. The project is based on unit costs which are lower than those incurred in formal construction thanks to lower manpower and administrative costs and an adequate selection of building materials and technologies.

No. II.1.4

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 3 500 dwellings in the Municipality of Bluefields and the RAAS using local materials. Second stage

Project objectives: To provide an adequate housing solution to approximately 50% of the families in Bluefields and neighbouring areas which lost their houses. To encourage the use of local materials in the construction of dwellings, for the purpose of lowering costs and saving national foreign exchange funds. To strengthen the local capacity for housing construction, using materials produced in the region.

Description of activities to be carried out: Selection of the type of dwelling to be built on the basis of an evaluation of the first stage (see Project No. II.1.3). Selection of and preparation of infrastructure for lots for housing construction. Preparation and processing of building materials. Construction of 3 500 dwellings. Evaluation of the project.

Expected project output: 3 5000 dwellings in the Municipality of Bluefields. Local installed capacity for the production of materials and the construction of new dwellings.

Total investment required: US$ 22 750 000

Breakdown (US$)		Financing (US$) 22 750 000	
- Manpower:	5 700 000	Local:	5 700 000
- National inputs:	9 400 000	External:	17 050 000
- Imported inputs:	7 650 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 2 years

Estimated starting date: September 1990

Special observations: This project is conceived as a follow-up to Project II.1.3; however, they could both be carried out simultaneously following the main criteria presented in Project II.1.3. In this case, the project will require external technical assistance from experts in housing construction, construction materials, and community participation.

No. II.1.5

PROJECT OUTLINE

Sector: Housing

Subsector: Building materials

Project title: Installation of a stone-crushing plant at Bluefields.

Project objectives: To satisfy the need for coarse aggregates for projects relating to contruction in rubble and prefabricated concrete in the South Atlantic Autonomous Region.

Description of activities to be carried out: Acquisition and installation of a stone-crushing plant of 40/50 cubic metres per hour capacity and auxiliary equipment for extraction and haulage from the quarry. Operation of the crushing equipment and administration of the plant.

Expected project output: Availability of equipment for stone crushing capable of satisfying local needs for concrete construction.

Total investment required: US$ 850 000

Breakdown (US$)		Financing (US$) 850 000	
- Manpower:	100 000	Local:	150 000
- National inputs:	80 000	External:	700 000
- Imported inputs:	670 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 4 months

Estimated starting date: February 1989

Special observations:

No. II.1.6

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 500 rural wooden dwellings in the South Atlantic Autonomous Region (RAAS): First stage

Project objectives: To provide an adequate housing solution to approximately 17% of the rural families in the RAAS which lost their houses. To encourage the use of wood and wooden prefabricated elements in the construction and improvement of rural dwellings. To develop housing designs suitable to the region and to strengthen the local capacity for housing construction.

Description of activities to be carried out: Designing the dwellings to be constructed in consultation with the users. Preparation and processing of building materials and wooden prefabricated elements. Organization of the distribution of materials and technical support. Self-help construction of 500 dwellings. Evaluation of the dwellings constructed so that similar concepts can be applied to the improvement and construction of new dwellings.

Expected project output: 500 dwellings in rural parts of the RAAS. Type designs of wooden dwellings suitable to local conditions. Availability in the region of installed capacity for carrying out similar projects.

Total investment required: US$ 1 250 000

Breakdown (US$)		Financing (US$) 1 250 000	
· Manpower:	440 000	Local:	500 000
· National inputs:	585 000	External:	750 000
· Imported inputs:	225 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 18 months

Estimated starting date: February 1989

Special observations: External technical assistance of experts in housing construction, construction materials, and working with the community is required.

No. II.1.7

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 2 000 rural wooden dwellings in the South Atlantic Autonomous Region (RAAS): Second stage

Project objetives: To provide an adequate housing solution to approximately 68% of the rural families in the RAAS who lost their houses. To encourage the use of wood and prefabricated wooden components in the construction and improvement of rural dwellings. To strengthen the local capacity for housing construction.

Description of activities to be carried out: Section of users. Preparation and processing of building materials and wooden prefabricated components. Organization of the distribution of materials and technical support. Self-help construction of 2 000 dwellings. Evaluation of the project.

Expected project output: 2 000 rural dwellings in the RAAS. Local installed capacity for the production of materials and the construction of new dwellings.

Total investment required: US$ 4 600 000

Breakdown (US$)		Financing (US$) 4 600 000	
- Manpower:	1 610 000	Local:	1 700 000
- National inputs:	2 190 000	External:	2 900 000
- Imported inputs:	800 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 2 years

Estimated starting date: September 1990

Special observations: Although this project is designed as a follow-up to Project II.1.6, both projects can be carried out simultaneously following the main criteria presented elsewhere. In this case, the project will require external technical assistance from experts in housing construction, building materials and community participation.

No. II.1.8

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Improvement of 2 800 dwellings in the South Atlantic Autonomous Region (RAAS)

Project objectives: To improve the housing situation of urban and rural families whose dwellings were partially destroyed. To strengthen the local capacity for the construction and maintenance of dwellings.

Description of activities to be carried out: Identification and organization of the families to be helped. Design of repair work and selection of building materials. Supply of materials and/or credits. Repair work on dwellings. Evaluation of the project.

Expected project output: 2 800 dwellings repaired to meet an adequate housing standard. Local installed capacity for the maintenance of dwellings.

Total investment required: US$ 2 500 000

Breakdown (US$)		Financing (US$)	2 500 000
- Manpower	600 000	Local:	600 000
- National inputs:	1 200 000	External:	1 900 000
- Imported inputs:	700 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.1.9

PROJECT OUTLINE

Sector: Housing

Subsector: Building materials

Project title: Installation of a wood-processing plant for construction at Bluefields

Project objectives: To satisfy the demand for processed wood protected against foul weather and infestation by natural organisms for use in the construction of dwellings and buildings in the South Atlantic Autonomous Region.

Description of activities to be carried out: Design and construction of facilities for drying wood. Acquisition and installation of equipment and materials for processing and preserving wood, with an initial capacity for 1 000 dwellings per year (approximately 150 000 sq. ft. per yard). The provision of inputs for one-year of plant operation.

Expected project output: A plant for drying and processing wood to meet the needs arising from the construction of 1 000 dwellings per year.

Total investment required: US$ 700 000

Breakdown (US$)		Financing (US$) 700 000	
- Manpower:	140 000	Local:	150 000
- National inputs:	60 000	External:	550 000
- Imported inputs:	500 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 6 months

Estimated starting date: February 1989

Special observations:

No. II.1.10

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Reconstruction of 10 000 dwellings in the Fifth Region: First stage

Project objectives: To provide an adequate housing solution to approximately 30% of the urban and rural families in the Fifth Region whose dwellings were totally or partially destroyed, self-help construction methods to be applied and building materials and tools supplied. To strengthen the local capacity for housing construction.

Description of activities to be carried out: Identification and organization of the families to be helped. Design of the dwellings to be rebuilt. Supply of material and/or credit for use in repairing or rebuilding dwellings. Self-help construction of 2 200 new dwellings, and 2 800 dwellings with basic structure and roof and repair of 5 000 rural dwellings. Evaluation of the project.

Expected project output: 10 000 housing solutions in the Fifth Region. Local installed capacity for housing construction.

Total investment required: US$ 8 800 000

Breakdown (US$)		Financing (US$) 8 800 000	
- Manpower:	1 190 000	Local:	1 250 000
- National inputs:	5 010 000	External:	7 550 000
- Imported inputs:	2 600 000		

National agency in charge: Office of the President: Fifth Region

Tentative duration: 30 months

Estimated starting date: February 1989

Special observations: External technical assistance from experts in housing construction, building materials, and community participation is required. Thanks to lower manpower and administrative costs and the approach taken to the selection of building materials and technology, the project is based on unit costs which are lower than those incurred in formal construction.

No. II.1.11

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Construction of 10 000 dwellings in the Fifth Region

Project objectives: To provide a housing solution to approximately 30% of the rural and urban families whose dwellings were totally or partially destroyed. To strengthen local capacity for housing construction.

Description of activities to be carried out: Identification and organization of the families to be helped. Design of the dwellings to be constructed and selection of the materials needed for them. Evaluation of the project. Construction of dwellings.

Expected project output: Construction of 10 000 dwellings. Local installed capacity for housing construction.

Total investment required: US$ 60 000 000

Breakdown (US$)		Financing (US$) 60 000 000	
- Manpower:	12 500 000	Local:	4 000 000 (manpower)
- National inputs:	27 500 000	External:	56 000 000
- Imported inputs:	21 500 000		

National agency in charge: Office of the President: Fifth Region

Tentative duration: 30 months

Estimated starting date: February 1989

Special observations: The project will require external technical assistance from experts in housing construction, building materials, and community participation. Its unit costs are lower than those incurred in formal construction owing to lower manpower and administrative costs and the approach taken to the selection of building materials and technologies.

No. II.1.12

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Improvement of 14 000 dwellings in the Fifth Region

Project objectives: To improve the housing situation of the urban and rural families whose dwellings were partially destroyed. To strengthen the local capacity for the construction and maintenance of dwellings.

Description of activities to be carried out: Identification and organization of the families to be helped. Design of repair work and selection of building materials. Supply of materials and/or credits. Evaluation of the project. Repair work on dwellings.

Expected project output: 14 000 dwellings repaired to meet an adequate standard of housing. Local installed capacity for the maintenance of dwellings.

Total investment required: US$ 12 600 000

Breakdown (US$)		Financing (US$) 12 600 000		
- Manpower:	3 100 000	Local:	3 100 000	(manpower)
- National inputs:	6 000 000	External:	9 500 000	
- Imported inputs:	3 500 000			

National agency in charge: Office of the President: Fifth Region

Tentative duration: 3 years

Estimated starting date: February 1989

Special observations:

No. II.1.13

PROJECT OUTLINE

Sector: Housing

Subsector: Building materials

Project title: Installation of a sawmill and plant for processing lumber for construction at El Rama: Fifth Region

Project objectives: To satisfy the demand for processed wood protected against foul weather and infestation by natural organisms, for use in activities related to the construction of dwellings in the Fifth Region.

Description of activities to be carried out: Design and construction of facilities for the sawing, drying and processing of wood. Acquisition and installation of equipment with an initial capacity for 2 000 houses per year (approximately 300 000 sq. ft. per yard). Provision of inputs for one year's operation of the plant.

Expected project output: One sawmill and wood-drying and processing plant to meet the needs arising from the construction of 2 000 houses per year.

Total investment required: US$ 1 770 000

Breakdown (US$)		Financing (US$) 1 770 000	
- Manpower:	220 000	Local:	240 000
- National inputs:	100 000	External:	1 530 000
- Imported inputs:	1 450 000		

National agency in charge: Office of the President: Fifth Region

Tentative duration: 6 months

Estimated starting date: February 1989

Special observations:

No. II.1.14

PROJECT OUTLINE

Sector: Housing

Subsector: Building

Project title: Reconstruction of 2 000 dwellings in the Second, Fourth and Sixth regions

Project objectives: To provide a housing solution for the urban and rural families whose dwellings were totally or partially destroyed. To strengthen the local capacity for the construction of housing.

Description of activities to be carried out: Identification and organization of the families to be helped. Design of dwellings to be reconstructed and selection of building materials. Construction of and repair work on dwellings.

Expected project output: 1 000 new dwellings and 1 000 repaired dwellings. Local installed capacity for the construction of dwellings.

Total investment required: US$ 7 900 000

Breakdown (US$)		Financing (US$) 7 900 000	
- Manpower:	2 400 000	Local:	1 200 000 (half for manpower)
- National inputs:	3 500 000	External:	6 700 000
- Imported inputs:	2 000 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 18 months

Estimated starting date: February 1989

Special observations: The project provides for unit costs which are lower than those incurred in formal construction owing to lower manpower and administrative costs and to the approach taken to the selection of building materials and technologies.

No. II.1.15

PROJECT OUTLINE

Sector: Housing

Subsector: Preinvestment

Project title: Feasibility study for increasing pozzolanic cement production in Nicaragua

Project objectives: To evaluate local potential in equipment and primary materials to increase the production of pozzolanic cement with a view to reducing the imported inputs (energy) used in the manufacture of cement and the construction of housing.

Description of activities to be carried out: Evaluation of the reserves of pozzolanic material existing in Nicaragua. Market studies. Selection of and specifications for a new plant for the production of pozzolanic cement.

Expected project output: An evaluation of the potential capacity for the production of pozzolanic cement in Nicaragua. Designs, specifications and tender documents for the installation of a pozzolanic cement plant and studies relating to the extraction of the raw material involved.

Total investment required: US$ 400 000

Breakdown (US$)		Financing (US$) 400 000	
- Manpower:		Local:	50 000
- National inputs:	50 000	External:	350 000
- Imported inputs:	350 000		

National agency in charge: Ministry of Industry

Tentative duration: 30 months

Estimated starting date: February 1989

Special observations:

No. II.1.16

PROJECT OUTLINE

Sector: Housing

Subsector: Preinvestment

Project title: Evaluation of the ceramic products (bricks) industry with emphasis on building materials used in housing

Project objectives: To determine the local capacity for manufacturing clay products. To evaluate alternative sources of energy for the production of bricks. To increase local production of clay products.

Description of activities to be carried out: Evaluating the potential capacity for manufacturing bricks in Nicaragua. Evaluating the plans in existence and preparing a study on alternative sources of energy. Market study. Study of the localization of production plants. Selection of and specifications for new plants for the production of bricks and for converting existing plants to the use of other sources of energy.

Expected project output: An evaluation of the potential capacity for manufacturing bricks. Designs, specifications and tendering documents for the installation of plants producing bricks and for the conversion of plants already in existence.

Total investment required: US$ 160 000

Breakdown (US$)		Financing (US$) 160 000	
- Manpower:		Local:	10 000
- National inputs:	10 000	External:	150 000
- Imported inputs:	150 000		

National agency in charge: Ministry of Industry

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.1.17

PROJECT OUTLINE

Sector: Housing

Subsector: Technical assistance

Project title: Integral technical assistance in the preparation of a development strategy in the field of housing for low-income sectors

Project objectives: To formulate a suitable strategy for the lower-income sectors in Nicaragua, including those suffering damage in hurricane Joan, within a national development policy. To co-ordinate the work of the various agents working in the housing sector.

Description of activities to be carried out: Preparation of a diagnostic study of the housing sector: needs, institutional structure, resources, etc. Formulation of proposals for structuring the sector within a national development and economic reactivation policy.

Expected project output: A document which will contain guidelines for strengthening the sector and proposals relating to strategies to satisfy the needs of the lower-income sectors.

Total investment required: US$ 35 000

Breakdown (US$)		Financing (US$)	35 000
- Manpower:		Local:	5 000
- National inputs:	5 000	External:	30 000
- Imported inputs:	30 000		

National agency in charge: Department of Planning and the Budget

Tentative duration: 4 months

Estimated starting date: February 1989

Special observations: Will supplement the project now being carried out by the Municipality of Managua.

No. II.1.18

PROJECT OUTLINE

Sector: Housing

Subsector: Furniture and fittings

Project title: Replenishment of household furniture and fittings in damaged dwellings

Project objectives: To provide the families affected with furniture and household equipment of adequate quality. Promotion of small furniture-production units.

Description of activities to be carried out: Preparation of an inventory of furniture and household equipment to be replaced. Identification and organization of the families participating in the project. Organization of a credit system and distribution of furniture. Encouragement and support of the formation of units producing household equipment.

Expected project output: Improved living conditions for 46 000 families achieved by providing them with adequate household furniture and fittings.

Total investment required: US$ 15 000 000

Breakdown (US$)		Financing (US$)	15 000 000
- Manpower:	2 000 000	Local:	2 000 000
- National inputs:	7 000 000	External:	13 000 000
- Imported inputs:	6 000 000		

National agency in charge: Office of the President

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

2. HEALTH SECTOR

SUMMARY: HEALTH SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.2.1	Rehabilitation of the national refrigeration chain established under the national immunization programme	800	800
II.2.2	Readjustment of the national refrigeration chain established under the immunization programme (PAI) by setting up solar systems	64	59
II.2.3	Replenishment at national level of the equipment of damaged health centres and stations	1 200	1 100
II.2.4	Hyperbaric chamber for the Atlantic Coast	170	155
II.2.5	Recovering the capacity for laboratory diagnosis	35	32
II.2.6	Preparations by the health sector for cases of disaster	450	390
	Total	2 719	2 536

No. II.2.1

PROJECT OUTLINE

Sector: Health

Subsector: Prevention and control

Project title: Rehabilitation of the national refrigeration chain of the National Immunization Programme

Project objectives: a) To guarantee that the national programme on diseases which can be prevented through immunization functions adequately, and b) to keep child morbidity and mortality from increasing.

Description of activities to be carried out: a) Purchase of 60 kerosene electrical refrigerators with a capacity of 230 litres; b) purchase of 504 portable thermoses for transporting vaccine; c) purchase of 90, 27-litre cold storage boxes for the temporary preservation of vaccine, and d) provision of emergency electrical systems for vaccine banks.

Expected project output: Adequate preservation of the vaccine inventory.

Total investment required: US$ US$ 800 000

Breakdown (US$)		Financing (US$) 800 000	
- Manpower:		Local:	
- National inputs:		External:	800 000
- Imported inputs:	800 000		

National agency in charge: Ministry of Health

Tentative duration: Indefinite

Estimated starting date: Immediately

Special observations: Given the small size of the supply market, it is advisable to seek the collaboration of UNICEF and PAHO/WHO for managing the purchase of vaccine in advantageous conditions.

No. II.2.2

PROJECT OUTLINE

Sector: Health

Subsector: Prevention and control

Project title: Restoration of the national refrigeration chain of the expanded immunization Programme (PAI), primarily through the installation of systems operating on solar energy

Project objectives: a) To repair the damage to the PAI refrigeration equipment in 10 isolated health service establishments; b) to improve the reliability of the functioning of the equipment, and c) to evaluate the effectiveness and efficiency of photovoltaic systems.

Description of activities to be carried out: a) Purchase and installation of 10 photovoltaic systems, 10 refrigerators and roof fans, if possible, and b) design and application of an operational research programme on the functioning of these systems in wet tropical zones.

Expected project output: 1) Prevention of vaccine loss due to defects in the functioning of conventional refrigerators; 2) generation of national operating capacity for systems run on solar energy, and 3) generation and dissemination of scientifically validated know-how.

Total investment required: US$ 64 000

Breakdown (US$)		Financing (US$) 64 000	
· Manpower:	4 000	Local:	5 000
· National inputs:	5 000	External:	59 000
· Imported inputs:	55 000		

National agency in charge: Ministry of Health.

Tentative duration: 12 months (assembly and evaluation)

Estimated starting date: January 1989

Special observations: The project will be promoted and carried out jointly by PAHO/WHO, the Government of Nicaragua and ECLAC/Mexico.

No. II.2.3

PROJECT OUTLINE

Sector: Health

Subsector: Technical and material supply

Project title: Replacement at the national level of equipment in damaged health centres and stations

Project objectives: a) To re-establish the coverage of health centres in areas of the country which were affected by hurricane Joan, and b) to protect and restore the state of health of populations located in areas serviced by health-service establishments (centres and stations) affected by the disaster.

Description of activities to be carried out: Purchase and replacement of equipment basic to the adequate functioning of the damaged health centres and stations.

Expected project output: Availability of adequate health services and return to the former level of coverage.

Total investment required: US$ 1 200 000

Breakdown (US$)		Financing (US$) 1 200 000	
- Manpower:		Local:	100 000
- National inputs:	250 000	External:	1 100 000
- Imported inputs:	950 000		

National agency in charge: Ministry of Health

Tentative duration: 6 months

Estimated starting date: December 1988/January 1989

Special observations:

No.II.2.4

PROJECT OUTLINE

Sector: Health

Subsector: Occupational health

Project title: Hyperbaric Chamber for the Atlantic Coast

Project objectives: a) To provide a hyperbaric chamber to improve the medical attention provided for fishery workers, and b) to provide physicians in Puerto Cabezas and Bluefields with training in the prevention and recognition of decompression syndrome and diseases caused by abnormal pressures, in support therapy, in the transport of persons suffering from such disorders and in their therapeutic management.

Description of activities to be carried out: a) Purchase and assembly of a hyperbaric chamber, and b) technical assistance in its management and in training the necessary personnel.

Expected project output: The availability of more effective protection for fishery workers.

Total investment required: US$ 170 000

Breakdown (US$)		Financing (US$) 170 000	
- Manpower:	10 000	Local:	15 000
- National inputs:	10 000	External:	155 000
- Imported inputs:	150 000		

National agency in charge: Ministry of Health

Tentative duration: 3 months (installation and training)

Estimated starting date: As soon as possible

Special observations: Relates to the creation of conditions in which any similar disasters arising in the future can be handled.

No.11.2.5

PROJECT OUTLINE

Sector: Health

Subsector: Laboratory services

Project title: Restoration of the capacity for laboratory diagnosis

Project objectives: To restore the capacity to make parasitological and microbiological diagnoses in clinical laboratories, four hospitals, five health centres and four health stations.

Description of activities to be carried out: a) Repairing damaged infrastructure; b) setting up damaged laboratory equipment and putting it into operation (repairing or replacement), and c) training personnel.

Expected project output: Maintenance of the coverage and quality of hygienic/epidemiological laboratory tests in affected health units.

Total investment required: US$ 35 000

Breakdown (US$)		Financing (US$) 35 000	
· Manpower:		Local:	2 500
· National inputs:	2 500	External:	32 500
· Imported inputs:	32 500		

National agency in charge: Ministry of Health

Tentative duration: 6 months

Estimated starting date: As soon as possible

Special observations:

No.II.2.6

PROJECT OUTLINE

Sector: Health

Subsector: Organization and development

Project title: Health preparations for cases of disaster

Project objectives: To improve the national capacity for confronting emergencies and to strengthen the participation of the health sector in disaster prevention planning.

Description of activities to be carried out: a) Evaluating the capacity of the country and its health sector to respond to emergencies by taking advantage of the experience acquired from hurricane Joan and the subsequent recovery phase; b) the provision of technical assistance in the organization and strengthening of the national programme and to train the human resources needed for these purposes, and c) enhancing the provision of appropriate means of communication.

Expected project output: Improved capacity of the country and its health sector, in particular, to respond to natural disaster situations.

Total investment required: US$ 450 000

Breakdown (US$)		Financing (US$)	450 000
- Manpower:		Local:	60 000
- National inputs:	260 000	External:	390 000
- Imported inputs:	190 000		

National agency in charge: Ministry of Health

Tentative duration: Throughout 1989

Estimated starting date: First quarter of 1989

Special observations:

3. EDUCATION SECTOR

SUMMARY: EDUCATION SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.3.1	Support for the reconstruction of the school infrastructure: Fifth Region	1 600	1 300
II.3.2	Support for the reconstruction of the school infrastructure: South Atlantic Autonomous Region (RAAS)	1 500	1 250
II.3.3	Support for the reconstruction of the school infrastructure: Third Special Zone (Río San Juan)	200	140
II.3.4	Support for the reconstruction of the damaged portion of the physical plant of the school system: Fifth Region	450	300
II.3.5	Rehabilitation of the equipment of regional workshops for the production of school furniture: Fourth, Fifth and Sixth Regions and Third Special Zone	410	330
	Total	4 160	3 320

No. II.3.1

PROJECT OUTLINE

Sector: Education

Subsector: Building

Project title: Support for the reconstruction of the school infrastructure: Fifth Region

Project objectives: To guarantee continuity of schooling by reconstructing the facilities destroyed in urban and rural areas.

Description of activities to be carried out: Organization of the task of constructing 116 schoolhouses with community participation. Purchase and transport of materials and components for use in constructing these facilities. Construction jobs.

Expected project output: 116 new schoolhouses (19 urban and 97 rural) with a total capacity for 5 220 pupils per shift.

Total investment required: US$ 1 600 000

Breakdown (US$)		Financing (US$) 1 600 000	
- Manpower:	600 000	Local:	300 000
- National inputs:	500 000	External:	1 300 000
- Imported inputs:	500 000		

National agency in charge: Ministry of Education.

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. 11.3.2

PROJECT OUTLINE

Sector: Education

Subsector: Building

Project title: Support for the reconstruction of school infrastructure: South Atlantic Autonomous Region (RAAS)

Project objectives: To guarantee continuity of schooling by reconstructing the facilities destroyed in urban and rural areas.

Description of activities to be carried out: Organization of the tasks involved in the construction of 112 schoolhouses with community participation. Purchase and transport of materials and components for use in constructing these facilities. Construction work.

Expected project output: 112 new schoolhouses in the RAAS (55 urban and 57 rural) with a total capacity for 5 040 pupils per shift.

Total investment required: US$ 1 500 000

Breakdown (US$)		Financing (US$) 1 500 000	
- Manpower:	550 000	Local:	250 000
- National inputs:	500 000	External:	1 250 000
- Imported inputs:	450 000		

National agency in charge: Ministry of Education.

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.3.3

PROJECT OUTLINE

Sector: Education

Subsector: Building

Project title: Support for the reconstruction of the school infrastructure: Third Special Zone (Río San Juan)

Project objectives: To guarantee continuity of schooling by reconstructing or repairing schoolhouses which were totally or partially destroyed.

Description of activities to be carried out: The organization of the tasks involved in the construction and repair of 6 and 26 schoolhouses, respectively, with community participation. Purchase and transport of materials and components for use in constructing and repairing schoolhouses. Construction work.

Expected project output: Six new rural schoolhouses and 26 repaired schools in urban zones with a total capacity for 1 440 pupils per shift.

Total investment required: US$ 200 000

Breakdown (US$)		Financing (US$) 200 000	
· Manpower:	60 000	Local:	60 000
· National inputs:	70 000	External:	140 000
· Imported inputs:	70 000		

National agency in charge: Ministry of Education.

Tentative duration: 1 year

Estimated starting date: February 1989

Special observations:

No. II.3.4

PROJECT OUTLINE

Sector: Education

Subsector: Building

Project title: Support for the reconstruction of the damaged portion of physical plant of the school system: Fifth Region

Project objectives: To guarantee continuity of schooling by repairing partially destroyed schools.

Description of activities to be carried out: The organization of the tasks involved in repairing 106 schoolhouses with community participation. Purchase and transport of materials and components for repairing the schools. Construction work.

Expected project output: 106 adequately rehabilitated schools (41 urban and 65 rural) with a total capacity for 4 770 pupils per shift.

Total investment required: US$ 450 000

Breakdown (US$)		Financing (US$) 450 000	
· Manpower:	150 000	Local:	150 000
· National inputs:	120 000	External:	300 000
· Imported inputs:	180 000		

National agency in charge: Ministry of Education.

Tentative duration: 1 year

Estimated starting date: February 1989

Special observations:

No. II.3.5

PROJECT OUTLINE

Sector: Education

Subsector: Equipment

Project title: Rehabilitation of the equipment of regional workshops for the production of school furniture: Fourth and Fifth Regions, RAAS and Third Special Zone

Project objectives: To guarantee the continuity of schooling by replacing damaged furniture and school equipment.

Description of activities to be carried out: Design and construction of four regional workshops for producing school furniture. Manufacture of furniture with pupil participation. Identifying and purchasing laboratory equipment for secondary and technical schools.

Expected project output: Four regional workshops for making and maintaining school furniture. Adequately equipped secondary schools. Support of apprentice training for pupils in which manual work and mental work are combined.

Total investment required: US$ 410 000

Breakdown (US$)		Financing (US$) 410 000	
- Manpower:	80 000	Local:	80 000
- National inputs:	130 000	External:	330 000
- Imported inputs:	200 000		

National agency in charge: Ministry of Education.

Tentative duration: 18 months

Estimated starting date: February 1989

Special observations:

4. AGRICULTURAL AND LIVESTOCK SECTOR

SUMMARY: AGRICULTURE AND LIVESTOCK SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.4.1	Seed production	2 000	1 500
II.4.2	Recovery of banana plantations in co-operative and peasant agriculture zones: Fifth Region and South Atlantic Autonomous Region	7 000	4 500
II.4.3	Rehabilitation of livestock production infrastructure: Fifth Region and South Atlantic Autonomous Region	5 000	4 000
II.4.4	Replacement of small livestock: Fifth Region and South Atlantic Autonomous Region	3 000	2 500
II.4.5	Rehabilitation of citrus fruit plantations: Fifth Region	3 200	2 600
II.4.6	Recovery of peasant cocoa growing areas: Fifth Region and South Atlantic Autonomous Region	4 500	3 500
II.4.7	Construction of small infrastructure works and irrigation mechanization: Fifth Region and South Atlantic Autonomous Region	8 250	6 000
II.4.8	Recovery of coffee plantations: Fifth and Sixth Regions	3 400	2 700
II.4.9	Recovery of banana plantations	1 000	900
II.4.10	Recovery of coconut plantations	2 400	1 650
II.4.11	Reforestation of the Escondido river basin	9 500	6 000
II.4.12	Technical assistance in carrying out preinvestment studies	1 930	1 680
	Total	51 180	37 530

No.II.4.1

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Seed production

Project objectives: To recover the lost capacity of the Experimental Farm at El Recreo to produce seeds of plants suitable for growing in tropical wetlands.

Description of activities to be carried out: Reconstruction and equipping of research facilities; purchase of the genetic material needed to resume research and the main inputs required for the production of cocoa, palmetto, African palm, vanilla, cinnamon, pepper and other seeds.

Expected project output: Recovery of the capacity of the Experimental Farm to continue advancing in the promotion of tropical wetlands agricultural diversification, especially on settlements and peasant colonies.

Total investment required: US$ 2 000 000

Breakdown (US$)		Financing (US$)	2 000 000
· Manpower:	750 000	Local:	500 000
· National inputs:	100 000	External:	1 500 000
· Imported inputs:	1 150 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform

Tentative duration: 3 years

Estimated starting date: January 1989

Special observations: A priority rehabilitation stage project.

No. II.4.2

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Recovery of banana plantations in co-operative and peasant agriculture zones: Fifth Region and South Atlantic Autonomous Region

Project objectives: To rehabilitate the sowing of bananas, one of the basic foods in the diet of the peasants affected.

Description of activities to be carried out: Provision of means (in cash and kind) to enable peasants to resume sowing the small banana plots which they lost.

Expected project output: Recovery of the production of bananas for peasant consumption and occasionally for sale in times of need or surplus.

Total investment required: US$ 7 000 000

Breakdown (US$)		Financing (US$)	7 000 000
- Manpower:	5 000 000	Local:	2 500 000
- National inputs:	1 000 000	External:	4 500 000
- Imported inputs:	1 000 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform and regional authorities

Tentative duration: 3 years

Estimated starting date: 1989

Special observations:

No.11.4.3

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Rehabilitation of livestock production infrastructure (fences, pasturage, sheds, etc.): Fifth Region and South Atlantic Autonomous Region

Project objectives: To give peasants the means to reconstruct damaged livestock infrastructure.

Description of activities to be carried out: Provision of means to enable peasants to reconstruct fences, sheds, irrigation canals and other structures. Resowing of 2 500 hectares of damaged pasturage.

Expected project output: Rehabilitation of the damaged capacity to raise livestock in the peasant zones affected.

Total investment required: US$ 5 000 000

Breakdown (US$)		Financing (US$)	5 000 000
- Manpower:	1 300 000	Local:	1 000 000
- National inputs:	2 000 000	External:	4 000 000
- Imported inputs:	1 700 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform and regional authorities

Tentative duration: 2 years

Estimated starting date: January 1989

Special observations:

No.II.4.4

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Replacement of small livestock (pigs and poultry) in the Fourth and Fifth Regions and in the South Atlantic Autonomous Region

Project objectives: To provide small animals so that the peasants affected can recuperate the capital lost in this activity.

Description of activities to be carried out: Generation of the breeding stock and pigs needed to deliver 25 000 pigs and 1 000 hogs to families in the affected zones. Generation of the capacity of chickens to produce 500 000 chicks for delivery to the same families. Establishment of the breeding facilities needed to attain those objectives.

Expected project output: Provision of breeding stock to peasants to enable them to recover their capacity to produce food of animal origin for their own consumption and, if possible, for sale.

Total investment required: US$ 3 000 000

Breakdown (US$)		Financing (US$)	3 000 000
- Manpower:	200 000	Local:	500 000
- National inputs:	2 500 000	External:	2 500 000
- Imported inputs:	300 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform and regional offices

Tentative duration: 2 years

Estimated starting date: January 1989

Special observations:

No.II.4.5

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Rehabilitation of citrus fruit plantation: Fifth Region

Project objectives: To reclaim 1 250 hectares of citrus fruit plantations belonging to affected peasants.

Description of activities to be carried out: To prepare seed-beds and water them and sow seed in 1 250 hectares in the affected zones; to fertilize the land zone and combat pests and diseases; to cultivate the land, carry out pruning once a year, and perform all the work necessary to ensure satisfactory growth of the crop.

Expected project output: Rehabilitation of the citrus fruit areas affected in order to recover production and peasant income.

Total investment required: US$ 3 200 000

Breakdown (US$)		Financing (US$)	3 200 000
· Manpower:	1 200 000	Local:	600 000
· National inputs:	1 000 000	External:	2 600 000
· Imported inputs:	1 000 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform

Tentative duration: 5 years

Estimated starting date: March 1989

Special observations:

No. II.4.6

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Recovery of peasant cocoa-growing areas: Fifth Region and South Atlantic Autonomous Region

Project objectives: To recover the 350 hectares lost as a result of the hurricane and to rehabilitate 1 750 hectares of plantations which were partially damaged.

Description of activities to be carried out: Preparation and sowing of 350 hectares of cocoa bushes which were not totally affected; recovery and sowing of shade plants; application of fertilizer and pest and disease control; drainage repairs and, in general, all the work related to the sowing and care of a plantation.

Expected project output: Re-establishment of the country's cocoa production capacity and restoration of the income level of the peasants affected in Nueva Guinea and Bluefields.

Total investment required: US$ 4 500 000

Breakdown (US$)		Financing (US$)	4 500 000
- Manpower:	2 000 000	Local:	1 000 000
- National inputs:	1 600 000	External:	3 500 000
- Imported inputs:	900 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform. Authorities in the Fifth Region and the South Atlantic Autonomous Region.

Tentative duration: 5 years

Estimated starting date: January 1989

Special observations:

No. II.4.7

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Construction of small infrastructure works and irrigation mechanization: Fourth Region

Project objectives: To provide affected peasants with land and water resources to enable them to recover their standard of living.

Description of activities to be carried out: To construct hydraulic infrastructure (micro-dams, pumping stations and distribution canals) to make it possible to irrigate approximately 2 000 hectares in the hope that they might be used by those peasants who lost all they owned. Possible establishment of co-operatives would be formed in order to encourage the use of machinery and other modern agricultural techniques.

Expected project output: Recovery of the production of basic grains, garden vegetables, dairy products and meat by peasants at Nandaine and Tola who lost their land through erosion or flooding by materials which down-graded the quality of the soil.

Total investment required: US$ 8 250 000

Breakdown (US$)		Financing (US$)	8 250 000
- Manpower:	2 000 000	Local:	2 250 000
- National inputs:	750 000	External:	6 000 000
- Imported inputs:	1 750 000		

National agency in charge: Government of the Fourth Region

Tentative duration: 2 years

Estimated starting date: January 1989

Special observations:

No. II.4.8

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Recovery of coffee plantations: Fifth and Sixth Regions

Project objectives: To recover the 2 000 hectares sown with coffee which were totally lost as a result of the flooding of rivers. (The export capacity fell by 1 800 tons, which reduced foreign currency receipts.)

Description of activities to be carried out: Establishment of nurseries and eventual transplanting of young plants, cultivation and management of the plantation for three years, fertilizing and annual pest control.

Expected project output: Recovery of levels of coffee production and generation of foreign currency from exports.

Total investment required: US$ 3 400 000

Breakdown (US$)		Financing (US$) 3 400 000	
· Manpower:	1 700 000	Local:	700 000
· National inputs:	1 300 000	External:	2 700 000
· Imported inputs:	400 000		

National agency in charge: Ministry of Agricultural Development and Agrarian Reform and authorities in the Fifth and Sixth Regions

Tentative duration: 5 years

Estimated starting date: January 1989

Special observations:

No. II.4.9

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Recovery of banana plantations

Project objectives: To recover the 114-hectare area sown with bananas which was totally lost and 757 hectares which were partially damaged.

Description of activities to be carried out: Sowing banana plants in a 134-hectare area; reactivating the irrigation and drainage systems of the entire plantation of 3 500 hectares. Repairing the systems used to transport the fruit to the packers. Initiating some intensive farm practices in the area affected.

Expected project output: Recovery of production levels and generation of foreign currency through banana exports.

Total investment required: US$ 1 000 000

Breakdown (US$)		Financing (US$)	1 000 000
- Manpower:	200 000	Local:	100 000
- National inputs:	100 000	External:	900 000
- Imported inputs:	700 000		

National agency in charge: Banana Corporation

Tentative duration: 2 years

Estimated starting date: January 1989

Special observations:

No. II.4.10

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Recovery of coconut plantations on Corn Island and in the Second Special Autonomous Zone

Project objectives: To rehabilitate the areas sown with coconut palm, which were almost totally lost.

Description of activities to be carried out: To prepare land and seed-beds and resow the area devastated by the storm. To look after the plantation till it is fully irrigated.

Expected project output: Recovery of coconut palm plantations and production of the oil needed to supply the country.

Total investment required: US$ 2 400 000

Breakdown (US$)		Financing (US$)	2 400 000
- Manpower:	750 000	Local:	750 000
- National inputs:	250 000	External:	1 650 000
- Imported inputs:	1 400 000		

National agency in charge: Authorities in the Second Special Autonomous Zone

Tentative duration: 5 years

Estimated starting date: January 1989

Special observations:

No. II.4.11

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Forestry

Project title: Reforestation of the Escondido river basin

Project objectives: To reforest destroyed woodlands and improve them by adding species of high economic value.

Description of activities to be carried out: Establishment of nurseries for species of high economic value, such as mahogany and royal cedar; to incorporate these species among those which are naturally regenerated; care and management of the forest and prevention of fires. External technical assistance over a period of 10 years.

Expected project output: Recovery of the ecological balance of the zone and an increase in the value of the forest and in the forestry patrimony.

Total investment required: US$ 9 500 000

Breakdown (US$)		Financing (US$)	9 500 000
- Manpower:	2 500 000	Local:	3 500 000
- National inputs:	1 000 000	External:	6 000 000
- Imported inputs:	6 000 000		

National agency in charge: Department of Natural Resources of the Ministry of Agricultural Development and Agrarian Reform

Tentative duration: 10 years

Estimated starting date: 1989

Special observations:

No. II.4.12

PROJECT OUTLINE

Sector: Agriculture and livestock

Subsector: Agriculture

Project title: Technical assistance in carrying out preinvestment studies

Project objectives: To work with MIDINRA in the training of personnel in techniques used in the identification and preparation of agricultural and agroindustrial projects at the preinvestment level which are aimed primarily at the recovery of the sector.

Description of activities to be carried out: Working jointly with national technicians in the activities described above. Identifying candidates for training abroad and working with the Planning Department on tasks related to the development of the sector and based on projects.

Expected project output: Training for at least 20 national technicians in the activities described above.

Total investment required: US$ 1 930 000

Breakdown (US$)		Financing (US$)	1 930 000
- Manpower:		Local:	250 000
- National inputs:	250 000	External:	1 680 000
- Imported inputs:	1 680 000		

National agency in charge: Planning Department of the Ministry of Agricultural Development and Agrarian Reform

Tentative duration: 2 years

Estimated starting date: January 1989

Special observations:

5. INDUSTRY SECTOR

SUMMARY: INDUSTRY SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.5.1	Rehabilitation of the PROMAR fishery corporation	4 910	4 400
II.5.2	Rehabilitation of the PESCANICA fishery corporation	512	450
II.5.3	Rehabilitation of the PICSA shipyard	795	700
II.5.4	Rehabilitation of the COPESNICA fishery corporation	2 050	1 850
II.5.5	Rehabilitation of the PESCASA fishery corporation	3 450	3 000
II.5.6	Installation of five on-line sawmills along the Río Rama	16 000	13 000
II.5.7	Reactivation of the lumber industry at Bluefields	9 450	8 450
II.5.8	Study on timber resources in forests affected by the hurricane	250	250
II.5.9	Additional production of palm oil	3 000	2 700
II.5.10	Rehabilitation of the Camilo Ortega sugar mill	5 000	4 500
II.5.11	Development of the tourism infrastructure on Corn Island	840	760
	Total	46 257	40 060

No. II.5.1

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of the PROMAR fishery corporation

Project objectives: To repair damage in order to recover normal levels of lobster trapping and sales.

Description of activities to be carried out: Integral repair of the processing plant on Corn Island, includes its roof, freezing and maintenance facilities, repair shops, dock, water supply system, storage facilities and electricity generators.

Expected project output: Recovery of levels of employment and lobster exports maintained before the disaster.

Total investment required: US$ 4 910 000

Breakdown (US$)		Financing (US$)	4 910 000
- Manpower:	760 000	Local:	510 000
- National inputs:	3 000 000	External:	4 400 000
- Imported inputs:	1 150 000		

National agency in charge: National Fishery Institute

Tentative duration: 6 months

Estimated starting date: November 1988

Special observations:

No. II.5.2

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of the PESCANICA fishery corporation

Project objectives: To repair the damage suffered by this company in order to recover its former levels of activity.

Description of activities to be carried out: Restoration of the shipyard on Sandino island in the Río Escondido. Replacing mechanical parts, tools and injection pump laboratory of the fishing fleet. Repairing the electricity generators and the launching line.

Expected project output: Recovery of levels of repair work on fishing vessels which existed before the hurricane.

Total investment required: US$ 512 000

Breakdown (US$)		Financing (US$)	512 000
- Manpower:	12 000	Local:	62 000
- National inputs:	50 000	External:	450 000
- Imported inputs:	450 000		

National agency in charge: National Fishery Institute

Tentative duration: 6 months

Estimated starting date: November 1988

Special observations:

No. II.5.3

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of the PISCA shipyard

Project objectives: Repair damage in this shipyard in order to guarantee normal levels of activity.

Description of activities to be carried out: Construction of the industrial ship, repair shops and launching line. Installation of its generators and electrical connections.

Expected project output: Availability of shipyard services on a regular basis.

Total investment required: US$ 795 000

Breakdown (US$)		Financing (US$)	795 000
- Manpower:	135 000	Local:	95 000
- National inputs:	300 000	External:	700 000
- Imported inputs:	360 000		

National agency in charge: National Fishery Institute

Tentative duration: 8 months

Estimated starting date: November 1988

Special observations:

No. II.5.4

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of the COPESNICA fishery corporation

Project objectives: To repair damage to this company in order to recover its normal levels of shrimp catch and sales.

Description of activities to be carried out: Integral repair of the shrimp processing plant at Bluefields including roof, access channel, freezing equipment, electricity generators, processing room, etc.

Expected project output: Recovery of levels of employment and shrimp exports which existed before the hurricane.

Total investment required: US$ 2 050 000

Breakdown (US$)		Financing (US$)	2 050 000
- Manpower:	120 000	Local:	200 000
- National inputs:	230 000	External:	1 850 000
- Imported inputs:	1 700 000		

National agency in charge: National Fishery Institute

Tentative duration: 6 months

Estimated starting date: January 1989

Special observations:

No. II.5.5

PROJECT OUTLINE

Sector: Industry

Subsector: Fisheries

Project title: Rehabilitation of the PESCASA fishery corporation

Project objectives: To repair damage in order to recover normal levels of catch and sale of shrimp.

Description of activities to be carried out: Integral repairing of the processing plant at El Bluff including repairs to its roof, electricity generators, ice compressors, freezing facilities, etc. Construction of dock and drinking-water network. Construction and equipping of processing room.

Expected project output: Return to the levels of employment and shrimp exports maintained before the hurricane.

Total investment required: US$ 3 450 000

Breakdown (US$)		Financing (US$)	3 450 000
- Manpower:	450 000	Local:	450 000
- National inputs:	500 000	External:	3 000 000
- Imported inputs:	2 500 000		

National agency in charge: National Fishery Institute

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations:

No. 11.5.6

PROJECT OUTLINE

Sector: Industry

Subsector: Wood

Project title: Installation of five on-line sawmills along the Río Rama

Project objectives: To extract as much timber as possible from the affected forest.

Description of activities to be carried out: Purchase of five portable saws and other equipment.

Expected project output: 25 000 cubic metres of round logs.

Total investment required: US$ 16 000 000

Breakdown (US$)		Financing (US$) 16 000 000	
- Manpower:	1 000 000	Local:	3 000 000
- National inputs:	2 000 000	External:	13 000 000
- Imported inputs:	13 000 000		

National agency in charge: Forestry Corporation

Tentative duration: 3 months

Estimated starting date: December 1988

Special observations:

No. II.5.7

PROJECT OUTLINE

Sector: Industry

Subsector: Wood

Project title: Reactivation of the lumber industry at Bluefields

Project objectives: To increase wood production capacity in the region by developing the affected forests.

Description of activities to be carried out: Reconstruction of the building housing the sawmill; purchase of machinery and sawing equipment and extraction of timber.

Expected project output: Large quantities of wood for the reconstruction of dwellings and other facilities and for export. To increase employment availability in this sector.

Total investment required: US$ 9 450 000

Breakdown (US$)		Financing (US$) 9 450 000	
· Manpower:	600 000	Local:	1 000 000
· National inputs:	8 000 000	External:	8 450 000
· Imported inputs:	850 000		

National agency in charge: Forestry Corporation and Bluefields Lumber Corporation.

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations:

No. II.5.8

PROJECT OUTLINE

Sector: Industry

Subsector: Wood

Project title: Study on timber resources in forests affected by the hurricane

Project objectives: To identify with a high level of precision the usable timber resources in order to determine the real possibilities of extraction.

Description of activities to be carried out: Taking aerial photographs and interpreting them. Making an inventory of the timber available by variety or type.

Expected project output: Availability of proven data for use in negotiating effectively with foreign firms concerning extraction and marketing terms.

Total investment required: US$ 250 000

Breakdown (US$)		Financing (US$)	250 000
· Manpower:		Local:	
· National inputs:		External:	250 000
· Imported inputs:	250 000		

National agency in charge: National Resources Institute and Forestry Corporation

Tentative duration: 1 month

Estimated starting date: November 1988

Special observations:

No. II.5.9

PROJECT OUTLINE

Sector: Industry

Subsector: Food

Project title: Additional production of palm oil

Project objectives: To satisfy the domestic demand in the area.

Description of activities to be carried out: Installation of an oil processing plant.

Expected project output: Substitution of the productive capacity of palm oil for that of coconut oil.

Total investment required: US$ 3 000 000

Breakdown (US$)		Financing (US$)	3 000 000
- Manpower:	150 000	Local:	300 000
- National inputs:	650 000	External:	2 700 000
- Imported inputs:	2 200 000		

National agency in charge:

Tentative duration: 1 year

Estimated starting date: January 1989

Special observations: Coconut oil production was affected by the hurricane, and it seems inadvisable to reactivate it.

No. II.5.10

PROJECT OUTLINE

Sector: Industry

Subsector: Food

Project title: Rehabilitation of the Camilo Ortega sugar mill

Project objectives: To recover the productive capacity of this mill in order to bring it up to its export levels.

Description of activities to be carried out: Rehabilitation of installations, equipment and machinery.

Expected project output: Return to the production and employment levels maintained prior to the disaster.

Total investment required: US$ 5 000 000

Breakdown (US$)		Financing (US$)	5 000 000
- Manpower:	300 000	Local:	500 000
- National inputs:	700 000	External:	4 500 000
- Imported inputs:	4 000 000		

National agency in charge: Sugar Corporation

Tentative duration: 7 months

Estimated starting date: January 1989

Special observations:

No. 11.5.11

PROJECT OUTLINE

Sector: Industry

Subsector: Tourism

Project title: Development of the tourism infrastructure on Corn Island

Project objectives: To create conditions suitable for the development of tourism on this island.

Description of activities to be carried out: Construction of three 10-room hotels and of other service areas.

Expected project output: Encouragement of tourism by developing the natural conditions of the island and thereby generating employment and foreign currency.

Total investment required: US$ 840 000

Breakdown (US$)		Financing (US$)	840 000
- Manpower:	260 000	Local:	80 000
- National inputs:	180 000	External:	760 000
- Imported inputs:	400 000		

National agency in charge: Nicaraguan Tourism Institute

Tentative duration: 1 year

Estimated starting date: February 1989

Special observations:

6. TRADE SECTOR

SUMMARY: TRADE SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.6.1	Rehabilitation of the infrastructure of the Nicaraguan Supply Corporation (ENABAS)	16 000	12 000
II.6.2	Credit for rehabilitating private wholesale trade	2 000	1 800
II.6.3	Credit for rehabilitating retail trade in the areas affected	2 000	1 800
II.6.4	Rehabilitation of the network of sales of food for immediate consumption	2 900	2 030
II.6.5	Renovation of the commercial land-transport fleet	2 700	2 700
	Total	25 600	20 330

No. II.6.1

PROJECT OUTLINE

Sector: Trade

Subsector: Wholesale

Project title: Rehabilitation of the infrastructure of the Nicaraguan Supply Corporation (ENABAS)

Project objectives: To repair damaged infrastructure in order to facilitate the wholesale distribution of basic commodities to Bluefields, Rama, La Esperanza and neighbouring areas.

Description of activities to be carried out: Reconstruction of destroyed warehouses and repairing partial damage. Restoration of refrigeration capacity.

Expected project output: Re-establishment of this corporation's territorial network of warehouses in support of the flow of commodities to the areas affected.

Total investment required: US$ 16 000 000

Breakdown (US$)		Financing (US$)	16 000 000
- Manpower:	3 000 000	Local:	4 000 000
- National inputs:	7 000 000	External:	12 000 000
- Imported inputs:	6 000 000		

National agency in charge: Nicaraguan Supply Corporation (ENABAS)

Tentative duration: 6 months

Estimated starting date: November 1988

Special observations:

No. II.6.2

PROJECT OUTLINE

Sector: Trade

Subsector: Wholesale

Project title: Credit for rehabilitating private wholesale trade

Project objectives: To repair the damaged infrastructure of some 60 wholesale trade establishments.

Description of activities to be carried out: Provision of a suitable public institution with the legal mechanisms and financial resources needed to grant easy credit to merchants.

Expected project output: Re-establishment of the normal distribution of goods to retail merchants.

Total investment required: US$ 2 000 000

Breakdown (US$)		Financing (US$) 2 000 000	
· Manpower:	300 000	Local:	200 000
· National inputs:	900 000	External:	1 800 000
· Imported inputs:	800 000		

National agency in charge: Nicaraguan Supply Corporation (ENABAS)

Tentative duration: 6 months

Estimated starting date: November 1988

Special observations:

No. II.6.3

PROJECT OUTLINE

Sector: Trade

Subsector: Retail

Project title: Credit for rehabilitating retail trade in the areas affected

Project objectives: To support retail merchants.

Description of activities to be carried out: Restoration of the physical infrastructure of retail trade through the granting of easy credit by a suitable public institution.

Expected project output: Availability of merchandise required by the consumers of Bluefields, Corn Island, Rama, La Esperanza and neighbouring areas.

Total investment required: US$ 2 000 000

Breakdown (US$)		Financing (US$) 2 000 000	
- Manpower:	300 000	Local:	200 000
- National inputs:	900 000	External:	1 800 000
- Imported inputs:	800 000		

National agency in charge: Nicaraguan Supply Corporation (ENABAS)

Tentative duration: 6 months

Estimated starting date: November 1988

Special observations:

No. II.6.4

PROJECT OUTLINE

Sector: Trade

Subsector: Public food supply

Project title: Rehabilitation of the network of sales of food for immediate consumption

Project objectives: To re-establish the services offered by restaurants, coffee houses, bars, etc., in Bluefields, Corn Island, Rama, La Esperanza and neighbouring areas in order to satisfy the needs of the population and to promote tourism.

Description of activities to be carried out: Restoring the infrastructure of centres serving food to the public.

Expected project output: Restoration of normal daily living.

Total investment required: US$ 2 900 000

Breakdown (US$)		Financing (US$) 2 900 000	
- Manpower:	900 000	Local:	870 000
- National inputs:	1 200 000	External:	2 030 000
- Imported inputs:	800 000		

National agency in charge: Nicaraguan Supply Corporation (ENABAS)

Tentative duration: 5 months

Estimated starting date: December 1988

Special observations:

No. II.6.5

PROJECT OUTLINE

Sector: Trade

Subsector: Wholesale

Project title: Renovation of the commercial land-transport fleet

Project objectives: To improve commercial transport in the area affected.

Description of activities to be carried out: Purchase of 80 trucks. Supply of 768 000 gallons of fuel.

Expected project output: Effective satisfaction of normal transport needs.

Total investment required: US$ 2 700 000

Breakdown (US$)		Financing (US$)	2 700 000
· Manpower:		Local:	
· National inputs:		External:	2 700 000
· Imported inputs:	2 700 000		

National agency in charge: Nicaraguan Supply Corporation (ENABAS)

Tentative duration: 6 months

Estimated starting date: January 1989

Special observations:

7. TRANSPORT AND COMMUNICATIONS SECTOR

SUMMARY: TRANSPORT AND COMMUNICATIONS SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.7.1	Rehabilitation of the Sébaco-Matagalpa-Jinotega section: Sixth Region	235.8	210
II.7.2	Rehabilitation of the Jinotega-Asturias-Pantasma-Wiwili section: Sixth Region	2 727.5	2 300
II.7.3	Rehabilitation of the stretch of roadway La Mora-El Carmen-Waslala-Iyos section: Sixth Region	4 534	4 000
II.7.4	Rehabilitation of the San Gabriel-Mancotal-Las Cruces section: Sixth Region	600	500
II.7.5	Rehabilitation of the Santa Rita-San Dionisio-Esquipulas-Muy Muy section: Sixth Region	1 100	1 000
II.7.6	Rehabilitation of the San Ramón-El Jobo-Matiguas section: Sixth Region	1 345	1 200
II.7.7	Rehabilitation and reconstruction of the Matiguas-Río Blanco-Mulukuku section: Sixth Region	4 407.5	3 960
II.7.8	Rehabilitation and reconstruction of the Pueblo Nuevo-La Colonia-Abisinia-El Cua-Bocay section: Sixth Region	2 342.5	2 100
II.7.9	Rehabilitation of the Matagalpa-Apante section: Sixth Region	905	800
II.7.10	Rehabilitation of the La Mora-La Chata-El Portillo-El Cua section: Sixth Region	1 275	1 100
II.7.11	Rehabilitation of the inter-urban route linking Managua, Masaya, Granada and Tipitapa with branch roads to Guanacaste and Nandaime: Sixth Region	2 800	2 500
II.7.12	Rehabilitation of paved access roads to the principal road in the Fourth Region	2 000	1 700
II.7.13	Rehabilitation of the San Benito-El Rama section: Fifth Region	100	80
II.7.14	Repair of slightly damaged bridges in the Fifth Region	910	800
II.7.15	Rehabilitation of the Acopaya-San Carlos section: Third Special Zone	2 046	1 800

Number	Title	Investment	External financing
II.7.16	Reconstruction of roads used in transporting farm produce	20 000	18 000
II.7.17	Machinery and equipment needed for the construction of road works	25 000	25 000
II.7.18	Wooden bridges for roads in the tertiary road network: Fourth, Fifth and Sixth Regions and Third Special Zone	2 000	1 300
II.7.19	Reactivation of river transport on the following rivers: the Siguio, the Rama, the Nico and the Escondido	600	500
II.7.20	Rehabilitation of river transport in the South Atlantic Region	2 510	2 510
II.7.21	Repair of port installations and equipment	12 000	10 000
II.7.22	Rehabilitation of railway lines	600	500
II.7.23	Strengthening of planning	300	200
II.7.24	Rehabilitation of the telephone systems of Bluefields, El Bluff, El Rama and various small localities	680	600
II.7.25	Renovation and modernization of the telephone system in the eastern area: Fifth Region and Second and Third Special Zones	15 000	13 000
	Total	106 018.3	95 660

No. II.7.1

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the Sébaco-Matagalpa-Jinotega section: Sixth Region

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Reconstruction and paving of 356 metres of roadway which were destroyed and repairing 400 metres which were damaged.

Expected project output: Restoration of this section to a condition that would permit normal vehicular traffic and minimize transportation costs.

Total investment required: US$ 235 840

Breakdown (US$)		Financing (US$)	235 840
- Manpower:	47 160	Local:	25 840
- National inputs:	35 380	External:	210 000
- Imported inputs:	153 300		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 1 year

Estimated starting date: January 1989

Special observations:

No. II.7.2

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the stretch of roadway Jinotega-Asturias, Pantasma-Wiwili section: Sixth Region

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Reconstruction of seven kilometres of destroyed roadway and various repairs over 90 kilometres.

Expected project output: Restoration of this roadway to a condition that would permit normal vehicular traffic and minimize transportation costs.

Total investment required: US$ 2 727 500

Breakdown (US$)		Financing (US$) 2 727 500	
· Manpower:	927 350	Local:	427 500
· National inputs:	818 250	External:	2 300 000
· Imported inputs:	981 900		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 3 years

Estimated starting date: 1989

Special observations:

No. II.7.3

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the La Mora-El Carmen-Waslala-Iyos section: Sixth Region

Project objectives: To re-establish key road infrastructure.

Description of activities to be carried out: Removal of debris and collapsed structures, filling in and compacting sunken and undermined areas, repairs to the El Carmen, Babasca, Waslala 1 and 2, Kusuli and Las Lajas bridges. Construction of the Carpas, Manceras, Yaosca 1 and 2 and Guabo bridges.

Expected project output: Restoration of conditions permitting traffic on this section and provision of easy access to relatively isolated rural farm areas.

Total investment required: US$ 4 534 000

Breakdown (US$)		Financing (US$)	4 534 000
- Manpower:	1 213 400	Local:	534 000
- National inputs:	1 008 600	External:	4 000 000
- Imported inputs:	2 312 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 5 years

Estimated starting date: 1989

Special observations:

No. II.7.4

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the San Gabriel-Mancotal-Las Cruces section: Sixth Region

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Repairs to 30 kilometres of damaged roadway.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 600 000

Breakdown (US$)		Financing (US$)	600 000
- Manpower:	204 000	Local:	100 000
- National inputs:	180 000	External:	500 000
- Imported inputs:	216 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations:

No. II.7.5

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the Santa Rita-San Dionisio-Esquipulas-Muy Muy section: Sixth Region

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Repairs to 55 kilometres of damaged roadway.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 1 100 000

Breakdown (US$)		Financing (US$) 1 100 000	
· Manpower:	374 000	Local:	100 000
· National inputs:	396 000	External:	1 000 000
· Imported inputs:	396 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 2 years

Estimated starting date: 1990

Special observations:

No. II.7.6

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the San Ramón-El Jobo-Matiguas section: Sixth Region

Project objectives: To re-establish key road infrastructure.

Description of activities to be carried out: Repairs to 54 kilometres of damaged roadway and reconstruction of two kilometres of destroyed roadway.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 1 345 000

Breakdown (US$)		Financing (US$)	1 345 000
- Manpower:	457 300	Local:	145 000
- National inputs:	403 500	External:	1 200 000
- Imported inputs:	484 200		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 2 years

Estimated starting date: 1990

Special observations:

No. II.7.7

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation and reconstruction of the Matiguas-Río Blanco-Mulukuku section: Sixth Region

Project objectives: To rehabilitate key road infrastructure

Description of activities to be carried out: Removal of debris and collapsed structures, filling and compacting, reconstruction of five kilometres of roadway and of the Wilike, Wilikon and Mulukuku bridges and rehabilitation of 77 kilometres of damaged roadway.

Expected project output: Re-establishment of normal vehicular traffic conditions on this section and the provision of easy access to relatively isolated rural localities and productive farming areas.

Total investment required: US$ 4 407 500

Breakdown (US$)		Financing (US$) 4 407 500	
· Manpower:	1 189 850	Local:	447 500
· National inputs:	991 500	External:	3 960 000
· Imported inputs:	2 226 150		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 5 years

Estimated starting date: 1989

Special observations:

No. II.7.8

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation and reconstruction of the Pueblo Nuevo-La Colonia-Abisinia-El Cum-Bocay section: Sixth Region

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Repairs to 84 kilometres of damaged roadway and reconstruction of five kilometres of roadway that was destroyed.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 2 342 500

Breakdown (US$)		Financing (US$) 2 342 500	
- Manpower:	796 450	Local:	242 500
- National inputs:	702 750	External:	2 100 000
- Imported inputs:	843 300		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 3 years

Estimated starting date: 1989

Special observations:

No. II.7.9

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the Matagalpa-Apante section: Sixth Region

Project objectives: To re-establish key road infrastructure.

Description of activities to be carried out: Repairs to 32 kilometers of damaged roadway and to two kilometers of destroyed roadway.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this sector.

Total investment required: US$ 905 000

Breakdown (US$)		Financing (US$) 905 000	
- Manpower:	307 700	Local:	105 000
- National inputs:	271 500	External:	800 000
- Imported inputs:	325 800		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 2 years

Estimated starting date: 1989

Special observations:

No. 11.7.10

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the La Mora-La Chata-El Portillo-El Cua section: Sixth Region

Project objectives: To re-establish key road infrastructure.

Description of activities to be carried out: Repairs to 24 kilometres of damaged roadway and to 6 kilometres of destroyed roadway.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 1 275 000

Breakdown (US$)		Financing (US$) 1 275 000	
- Manpower:	433 500	Local:	175 000
- National inputs:	382 500	External:	1 100 000
- Imported inputs:	459 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 2 years

Estimated starting date: 1989

Special observations:

No. II.7.11

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the inter-urban route linking Managua, Masaya, Granada and Tipitapa with branch roads to Guanacaste and Nandaime: Fourth Region

Project objectives: To restore the level of service which the route offered prior to the disaster.

Description of activities to be carried out: Filling in work, cleaning up debris and removal of obstructions from culverts and drains; minor repairs to the Mayaris, La Barranca, El Arroyo and Ochomogo bridges. Reconstruction of 11.3 kilometres of destroyed roadways.

Expected project output: Elimination of possibility of further damage and/or of obstructions during the rainy season.

Total investment required: US$ 2 800 000

Breakdown (US$)		Financing (US$) 2 800 000	
· Manpower:	560 000	Local:	300 000
· National inputs:	840 000	External:	2 500 000
· Imported inputs:	1 400 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations: This set of activities complements those provided for in Project II.7.12. This project is part of the priority phase of rehabilitation.

No. II.7.12

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of paved feeder roads to the principal road in the Fourth Region

Project objectives: To restore the previous level of service.

Description of activities to be carried out: Cleaning and filling-in operations over a total length of 100 kilometres of feeder roads to the main road network.

Expected project output: Prevention of further damage and/or of obstructions during the rainy season.

Total investment required: US$ 2 000 000

Breakdown (US$)		Financing (US$) 2 000 000	
· Manpower:	680 000	Local:	300 000
· National inputs:	600 000	External:	1 700 000
· Imported inputs:	720 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 6 months

Estimated starting date: December 1988

Special observations: This set of activities complements those provided for in Project II.7.11.

No. II.7.13

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the San Benito-El Rama section: Fifth Region

Project objectives: To rehabilitate key infrastructure.

Description of activities to be carried out: Reconstruction and paving of a badly sunken 80-metres stretch of roadway, and minor repairs.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this section.

Total investment required: US$ 100 000

Breakdown (US$)		Financing (US$) 100 000	
· Manpower:	20 000	Local:	20 000
· National inputs:	15 000	External:	80 000
· Imported inputs:	65 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 3 months

Estimated starting date: December 1988

Special observations:

No. II.7.14

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Repair of slightly damaged bridges in the Fifth Region.

Project objectives: To rehabilitate key road infrastructure.

Description of activities to be carried out: Repairing minor damage to the La Cusuca, Siguia, Piedra Colorada, El Rama and Verbena bridges.

Expected project output: Normal vehicular traffic conditions and minimal transportation costs on this sector.

Total investment required: US$ 910 000

Breakdown (US$)		Financing (US$) 910 000	
- Manpower:	309 400	Local:	110 000
- National inputs:	273 600	External:	800 000
- Imported inputs:	327 600		

National agency in charge: Ministry of Construction and Transport.

Tentative duration: 1 year

Estimated starting date: 1989

Special observations:

No. II.7.15

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Rehabilitation of the Acoyapa-San Carlos section: Third Special Zone

Project objectives: To re-establish key road infrastructure.

Description of activities to be carried out: Repairs to 15 kilometres of roadway and to the bridge at Camastro; reconstruction of the Garrabito, Tepenaguazapa and La Emboscada bridges.

Expected project output: Re-establishment of roadworthiness on this section and the provision of easy access to relatively isolated rural localities and productive farming areas.

Total investment required: US$ 2 046 000

Breakdown (US$)		Financing (US$) 2 046 000	
- Manpower:	409 000	Local:	246 000
- National inputs:	307 000	External:	1 800 000
- Imported inputs:	1 330 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 3 years

Estimated starting date: 1989

Special observations:

No. II.7.16

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Reconstruction of roads used in transporting farm produce.

Project objectives: To re-establish the tertiary road network.

Description of activities to be carried out: Reconstruction of 1 758 kilometres of roadway in the Fourth, Fifth and Sixth Regions and in the Third Special Zone.

Expected project output: A feeder-road network providing farm produce and inhabitants of rural areas with access to the main and secondary road network.

Total investment required: US$ 20 000 000

Breakdown (US$)		Financing (US$) 20 000 000	
- Manpower:	8 000 000	Local:	2 000 000
- National inputs:	4 000 000	External:	18 000 000
- Imported inputs:	8 000 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 3 years

Estimated starting date: 1989

Special observations:

No. II.7.17

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Machinery and equipment needed for the construction of road works

Project objectives: To provide the Ministry of Construction and Transport with the machinery needed to repair and maintain roads and to deal with emergencies.

Description of activities to be carried out: Purchase of machinery and equipment.

Expected project output: Reduced operating costs of the Ministry of Construction and Transport and the independence and flexibility it needs to act directly in emergency situations.

Total investment required: US$ 25 000 000

Breakdown (US$)		Financing (US) 25 000 000	
- Manpower:		Local:	
- National inputs:		External:	25 000 000
- Imported inputs:	25 000 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration:

Estimated starting date:

Special observations:

No. II.7.18

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Roads

Project title: Wooden bridges for roads in the tertiary road network: Fourth, Fifth and Sixth Regions and Third Special Zone

Project objectives: To reduce economic and financial costs of the construction of roads in productive farm areas.

Description of activities to be carried out: Construction of wooden bridges for roads in the tertiary road network, using technology developed by UNIDO and the lumber available in the zones affected by the disaster.

Expected project output: A stock of short bridges, the creation of productive employment and the development of renewable natural resources.

Total investment required: US$ 2 000 000

Breakdown (US$)		Financing (US$) 2 000 000	
- Manpower:	600 000	Local:	700 000
- National inputs:	700 000	External:	1 300 000
- Imported inputs:	700 000		

National agency in charge: MIDINRA

Tentative duration: 1 year

Estimated starting date: As soon as possible

Special observations: This project includes technical co-operation from UNIDO for one year. This initiative could be significantly expanded to include other regions and tertiary road networks.

No. II.7.19

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Water transport

Project title: Reactivation of river transport on the following rivers: the Siquio, the Rama, the Mico and the Escondido

Project objectives: To make the necessary water vessels available.

Description of activities to be carried out: Purchase of 200 wooden boats with 40-outboard motors.

Expected project output: The facilitation of the transport of goods and people by water and the minimization of operational costs.

Total investment required: US$ 600 000

Breakdown (US$)		Financing (US$) 600 000	
· Manpower:	100 000	Local:	100 000
· National inputs:	100 000	External:	500 000
· Imported inputs:	400 000		

National agency in charge: Authority delegated by the Office of the President in the Fifth Region

Tentative duration: 6 months

Estimated starting date: 1989

Special observations:

No. II.7.20

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Water transport

Project title: Rehabilitation of water transport in the South Atlantic Region

Project objectives: To make available the water vessels needed for the transport of goods and people.

Description of activities to be carried out: Purchase of a 1 000-tugboat, two 1 000-ton barges, a 150-passenger vessel and a 1 000-ton vessel.

Expected project output: Facilitation of the transportation of goods and people by water and the minimization of operational costs.

Total investment required: US$ 2 510 000

Breakdown (US$)		Financing (US$) 2 510 000	
- Manpower:		Local:	
- National inputs:		External:	2 510 000
- Imported inputs:	2 510 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 6 months

Estimated starting date: 1989

Special observations:

No. II.7.21

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Port facilities

Project title: Repair of port installations and equipment

Project objectives: To repair port infrastructure on the Atlantic Coast (Arlen Siu, El Bluff, Bluefields, and lakeside ports).

Description of activities to be carried out: Rehabilitation of damaged infrastructure and purchase of the necessary equipment.

Expected project output: Availability of the port terminals needed which would facilitate the handling of cargo and the movement of passengers.

Total investment required: US$ 12 000 000

Breakdown (US$)		Financing (US$) 12 000 000	
- Manpower:	1 000 000	Local:	2 000 000
- National inputs:	1 000 000	External:	10 000 000
- Imported inputs:	10 000 000		

National agency in charge: National Port Authority (ENAP)

Tentative duration: 1 year

Estimated starting date: 1989

Special observations:

No. 11.7.22

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Railways

Project title: Rehabilitation of railway lines

Project objectives: To rehabilitate the necessary railway infrastructure.

Description of activities to be carried out: Rehabilitation of the rail network and the foundations of bridges.

Expected project output: Adequate operation of the railways.

Total investment required: US$ 600 000

Breakdown (US$)		Financing (US$) 600 000	
- Manpower:	100 000	Local:	100 000
- National inputs:	100 000	External:	500 000
- Imported inputs:	400 000		

National agency in charge: Ministry of Construction and Transport

Tentative duration: 1 year

Estimated starting date: 1989

No. II.7.23

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Technical assistance

Project title: *Strengthening of planning*

Project objectives: a) To optimize the use of the scarce investment resources available; b) to co-ordinate and rationalize the use and combination of the various modes of transport; c) to minimize overall costs (infrastructure costs plus operating costs) of the system, and d) to make the transportation system less vulnerable to unforeseen events.

Description of activities to be carried out: a) seeking technical assistance in the form of multilateral or bilateral co-operation; b) making a team of five national counterpart professionals available; c) preparing sectoral and subsectoral diagnostic studies and identifying policy strategy options; submitting the alternatives identified to a process of optimization and evaluating the resulting projects and measures.

Expected project output: Availability of a duly programmed set of instruments, whose application would help to optimize the transportation system.

Total investment required: US$ 300 000

Breakdown (US$)		Financing (US$) 300 000	
- Manpower:	60 000	Local:	100 000
- National inputs:	40 000	External:	200 000
- Imported inputs:	200 000		

National agency in charge: Department of Planning and the Budget

Tentative duration: 2 years

Estimated starting date: 1980

Special observations: The national contribution would consist in the participation of five local officials and in the bearing of the operating expenses of the working group (tools, secretariat, etc.). The external contribution would finance an expert for two years and cover computers, photocopy machines, etc.

No. II.7.24

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Communications

Project title: Rehabilitation of the telephone systems of Bluefields, El Bluff, El Rama and various small localities.

Project objectives: To re-establish this essential means of communication in the above-mentioned localities.

Description of activities to be carried out: Replacing external plants, switchboards, generating subsystems, microwave equipment, pylons, antennas, buildings and installations.

Expected project output: The re-establishment of telephone services for 600 subscribers in Bluefields, 100 subscribers in El Rama, 60 subscribers in El Bluff and 60 subscribers in various other municipalities.

Total investment required: US$ 680 000

Breakdown (US$)		Financing (US$) 680 000	
- Manpower:	130 000	Local:	80 000
- National inputs:	60 000	External:	600 000
- Imported inputs:	490 000		

National agency in charge: TELCOR

Tentative duration: 8 months

Estimated starting date: December 1988

Special observations:

No. II.7.25

PROJECT OUTLINE

Sector: Transport and communications

Subsector: Communications

Project title: Renovation and modernization of the telephone system in the eastern area: Fifth Region and Second and Third Special Zones

Project objectives: To provide a modern telephone subsystem which operates independently and telephone services for 5 000 subscribers.

Description of activities to be carried out: Obtaining microwave systems, establishing an interurban exchange in Jiugalpa and installation of 5 000 telephone lines.

Expected project output: Significant improvements in the quality and scope of service and establishment of a service which would be independent of the telephone exchange in Managua.

Total investment required: US$ 15 000 000

Breakdown (US$)		Financing (US$) 15 000 000	
· Manpower:	1 000 000	Local:	2 000 000
· National inputs:	1 000 000	External:	13 000 000
· Imported inputs:	13 000 000		

National agency in charge: TELCOR

Tentative duration: 5 years

Estimated starting date: 1990

Special observations:

8. DRINKING WATER AND SANITATION SECTOR

SUMMARY: DRINKING WATER AND SANITATION SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.8.1	Basic sanitation system for the city of Bluefields	10 000	9 000
II.8.2	Drinking-water-supply system for the city of Bluefields	12 000	11 000
II.8.3	Drinking-water supply and environmental sanitation for El Rama, La Esperanza and other settlements in the Fifth Region	2 500	2 200
II.8.4	Drinking-water supply and environmental sanitation for Corn Island: RAAS	1 100	950
II.8.5	Drinking-water supply and environmental sanitation for the Nueva Guinea area: Fifth Region	1 500	1 300
II.8.6	Rural drinking-water supply for the Fifth Region	6 000	3 600
II.8.7	Rural drinking-water supply for the South Atlantic Autonomous Region	2 100	1 500
II.8.8	Replacement of equipment for pumping drinking water in the Fourth, Fifth and Sixth Regions	350	300
II.8.9	System for the collection and disposal of solid wastes in the municipality of Bluefields: RAAS	120	115
	Total	35 670	29 965

No. II.8.1

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Sanitation

Project title: Basic sanitation system for the city of Bluefields

Project objectives: To improve the health conditions of the population by constructing an adequate system for the disposal of waste and the evacuation of rain water.

Description of activities to be carried out: Evaluation of alternative technologies for the disposal of human waste in Bluefields. Design and construction of the most adequate systems.

Expected project output: A sanitation system which will cater for the needs of approximately 41 000 people. Reduced risk of infectious diseases.

Total investment required: US$ 10 000 000

Breakdown (US$)		Financing (US$) 10 000 000	
· Manpower:	3 200 000	Local:	1 000 000
· National inputs:	4 300 000	External:	9 000 000
· Imported inputs:	2 500 000		

National agency in charge: Nicaraguan Institute of Aqueducts and Sewers

Tentative duration: 3 years

Estimated starting date: February 1989

Special observations:

No. II.8.2

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Drinking water

Project title: Drinking-water-supply system for the city of Bluefields

Project objectives: To improve the health conditions of the population through the construction of a piped drinking-water-supply system.

Description of activities to be carried out: Updating of engineering designs. Construction of collection and storage system, pumping stations and treatment plants. Construction of storage tanks, regulation and laying of mains and feeder pipes. Installation of pipelines to houses.

Expected project output: A system of water supply covering approximately 41 000 people. Improved health conditions for the population served.

Total investment required: US$ 12 000 000

Breakdown (US$)		Financing (US$) 12 000 000	
- Manpower:	3 600 000	Local:	1 000 000
- National inputs:	2 400 000	External:	11 000 000
- Imported inputs:	6 000 000		

National agency in charge: Nicaraguan Institute of Aqueducts and Sewers

Tentative duration: 3 years

Estimated starting date: February 1989

Special observations:

No. II.8.3

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector:

Project title: Drinking-water supply and environmental sanitation for El Rama, La Esperanza and other settlements in the Fifth Region

Project objectives: To improve the health conditions of 2 200 affected families by installing adequate drinking-water-supply and environmental sanitation systems.

Description of activities to be carried out: Identification of the settlements affected and design of the systems. Construction of works for collecting, piping, storing and treating drinking water. Laying of distribution pipelines and installation of 2 200 connections to houses. Construction of environmental sanitation facilities.

Expected project output: 2 200 families served by an adequate drinking-water-supply and environmental sanitation system in El Rama, La Esperanza, El Recreo and Presillas. Improved health conditions for the population served.

Total investment required: US$ 2 500 000

Breakdown (US$)		Financing (US$) 2 500 000	
· Manpower:	750 000	Local:	300 000
· National inputs:	550 000	External:	2 200 000
· Imported inputs:	1 200 000		

National agency in charge: Nicaraguan Institute of Aqueducts and Sewers

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.8.4

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector:

Project title: Drinking-water supply and environmental sanitation for Corn Island: RAAS

Project objectives: To improve the health conditions of approximately 900 affected families by installing adequate drinking-water-supply and environmental sanitation systems.

Description of activities to be carried out: Evaluation of technological alternatives and design of the systems. Construction of works for the supply of drinking water and the disposal of human waste. Evaluation of the project.

Expected project output: 900 families served by an adequate drinking-water-supply and environmental sanitation system. Improved health conditions for the population served.

Total investment required: US$ 1 100 000

Breakdown (US$)		Financing (US$) 1 100 000	
· Manpower:	300 000	Local:	150 000
· National inputs:	300 000	External:	950 000
· Imported inputs:	500 000		

National agency in charge: Nicaraguan Institute of Aqueducts and Sewers

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.8.5

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector:

Project title: Drinking-water supply and environmental sanitation for the Nueva Guinea area: Fifth Region

Project objectives: To improve the health conditions of approximately 2 000 affected families by supplying drinking water and environmental sanitation.

Description of activities to be carried out: Evaluation of the technological alternatives and designing ways of serving this dispersed population. Construction of works for the supply of drinking water (ground and/or surface water) and to ensure environmental sanitation. Implementation of programmes to teach the community to operate and maintain the facilities constructed.

Expected project output: Adequate drinking-water supply and environmental sanitation for 2 000 families. Improved health conditions for the population served.

Total investment required: US$ 1 500 000

Breakdown (US$)		Financing (US$) 1 500 000	
- Manpower:	500 000	Local:	200 000
- National inputs:	400 000	External:	1 300 000
- Imported inputs:	600 000		

National agency in charge: Office of the President: Fifth Region

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations:

No. II.8.6

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Drinking water

Project title: Rural drinking-water supply for the Fifth Region

Project objectives: To improve the health conditions of approximately 10 000 affected families, through an adequate supply of drinking water.

Description of activities to be carried out: Evaluation of alternative technologies and design of systems capable of meeting the needs of the rural population. Construction of works for the supply of drinking water (ground/surface/rain-water) and implementation of programmes to train the community to operate and maintain those works.

Expected project output: 10 000 families adequately supplied with drinking water. Improved health conditions for the population served.

Total investment required: US$ 6 000 000

Breakdown (US$)		Financing (US$) 6 000 000	
· Manpower:	2 400 000	Local:	2 400 000
· National inputs:	1 700 000	External:	3 600 000
· Imported inputs:	1 900 000		

National agency in charge: Office of the President: Fifth Region

Tentative duration: 4 years

Estimated starting date: February 1989

Special observations: External assistance will be required from an expert in rural drinking-water supply programmes. The construction of latrines is provided for in the housing reconstruction projects.

No. II.8.7

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Drinking water

Project title: Rural drinking-water supply for the South Atlantic Autonomous Region (RAAS)

Project objectives: To improve the health conditions of approximately 2 500 affected families, through an adequate supply of drinking water.

Description of activities to be carried out: Evaluation of alternative technologies and design of systems to meet the needs of the rural population. Construction of works for the supply of drinking water (ground/surface/rain-water) and the implementation of programmes to teach the community to operate and maintain those works.

Expected project output: 2 500 families adequately supplied with drinking water. Improved health conditions for the population served.

Total investment required: US$ 2 100 000

Breakdown (US$)		Financing (US$) 2 100 000	
- Manpower:	600 000	Local:	600 000
- National inputs:	700 000	External:	1 500 000
- Imported inputs:	800 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 2 years

Estimated starting date: February 1989

Special observations: External assistance will be required from an expert in rural water-supply programmes. The construction of latrines is provided for in the housing reconstruction projects.

No. II.8.8

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Drinking water

Project title: Replacement of equipment for pumping drinking water in the Fourth, Fifth and Sixth Regions

Project objectives: To maintain the productive capacity of the drinking-water-supply system.

Description of activities to be carried out: Identifying the equipment to be replaced. Purchase, transport and storage of equipment.

Expected project output: An installed capacity similar to that which existed prior to the disaster.

Total investment required: US$ 350 000

Breakdown (US$)		Financing (US$) 350 000	
- Manpower:	10 000	Local:	50 000
- National inputs:	40 000	External:	300 000
- Imported inputs:	300 000		

National agency in charge: Nicaraguan Institute of Aqueducts and Sewers

Tentative duration: 4 months

Estimated starting date: February 1989

Special observations:

No. II.8.9

PROJECT OUTLINE

Sector: Drinking water and sanitation

Subsector: Environmental sanitation

Project title: System for the collection and disposal of solid wastes in the Municipality of Bluefields: RAAS

Project objectives: To improve health conditions and urban administration in the Municipality of Bluefields by applying an adequate system for the collection and disposal of solid wastes.

Description of activities to be carried out: Design of a system for the disposal of solid wastes. Purchase of equipment and preparing the ground for the establishment and operation of the system.

Expected project output: System for the collection and disposal of solid wastes adequate for a population of 41 000.

Total investment required: US$ 120 000

Breakdown (US$)		Financing (US$) 120 000	
- Manpower:	5 000	Local:	5 000
- National inputs:	15 000	External:	115 000
- Imported inputs:	100 000		

National agency in charge: Office of the President: South Atlantic Autonomous Region

Tentative duration: 8 months

Estimated starting date: February 1989

Special observations:

9. ENERGY SECTOR

SUMMARY: ENERGY SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
11.9.1	Production, for export purposes, charcoal from the biomass from trees blown down in hurricane Joan	21 500	10 100
11.9.2	Production of charcoal for domestic consumption	2 010	915
	Total	23 510	11 015

No. II.9.1

PROJECT OUTLINE

Sector: Energy

Subsector: Biomass

Project title: Production, for export purposes, of charcoal from the biomass from trees blown down in hurricane Joan

Project objectives: To make good use of forest biomass which cannot be sawn for the production of exportable charcoal. To create sources of employment and income in the affected zones and to generate foreign exchange for the country. To facilitate access to timber which can be sawn.

Description of activities to be carried out: Installation of 2 000 conventional charcoal piles in 400 charcoal centres on the banks of navigable rivers in the affected zones. Purchase of power saws, storage of charred wood, transport of charcoal to storage areas (small launches), storage, transportation to port and processing for export.

Expected project output: Production of 84 000 tons of charcoal in 16 months. Exports worth US$6.5 million to 8.5 million.

Total investment required: US$ 21 500 000

Breakdown (US$)		Financing (US$) 21 500 000	
- Manpower:	9 124 000	Local:	11 400 000
- National inputs:	11 400 000	External:	10 100 000
- Imported inputs:	1 016 000		

National agency in charge: CORFOP-INE-COMSONICSA

Tentative duration: 20 months

Estimated starting date: 1989

Special observations: This project supplements Project No. II.9.2.

No. II.9.2

PROJECT OUTLINE

Sector: Energy

Subsector: Biomass

Project title: Production of charcoal for domestic consumption

Project objectives: To make good use of forest biomass which cannot be sawn for the production of charcoal for domestic consumption. To take advantage of the installation of five portable sawmills to use the available biomass which cannot be sawn. To shift the production of charcoal from the Atlantic Region (where this resource is used indiscriminately) to the Pacific Zone.

Description of activities to be carried out: Fitting 60 metal kelns to the five portable sawmills. Purchase of power saws, storage vessels and the necessary ground transport. Production of charcoal and its transport to Managua.

Expected project output: Production of 5 000 tons of charcoal per year at a price which is competitive with production costs in the Atlantic Region. Gradual reduction of pressure on the forests as the source of supply of the capital.

Total investment required: US$ 2 010 000

Breakdown (US$)		Financing (US$) 2 010 000	
- Manpower:	430 000	Local:	1 095 000
- National inputs:	1 095 000	External:	915 000
- Imported inputs:	485 000		

National agency in charge: CORFOP-INE-CONSONICSA

Tentative duration: 2 years

Estimated starting date: 1 January 1989

Special observations: This project supplements Project No. II.9.1.

10. PUBLIC BUILDINGS SECTOR

SUMMARY: PUBLIC BUILDINGS SECTOR

(Thousands of US dollars)

Number	Title	Investment	External financing
II.10.1	Rehabilitation of rural day-care and food services for children in the Fifth and Sixth Regions and the Third Special Zone	610	520
	Total	610	520

No. II.10.1

PROJECT OUTLINE

Sector: Public Buildings

Subsector: Social welfare

Project title: Rehabilitation of rural day-care and food services for children in the Fifth and Sixth Regions and the Third Special Zone

Project objectives: To continue the social welfare services provided to rural families.

Description of activities to be carried out: The design and construction of two day-care centres and three lunchrooms for children in rural areas. Evaluation of the project.

Expected project output: Five buildings for use in providing services to children in rural areas.

Total investment required: US$ 610 000

Breakdown (US$)		Financing (US$) 610 000	
- Manpower:	180 000	Local:	90 000
- National inputs:	240 000	External:	520 000
- Imported inputs:	190 000		

National agency in charge: Nicaraguan Social Security and Welfare Institute

Tentative duration: 18 months

Estimated starting date: February 1989

Special observations: The Government will be able to finance only 50% of the project's manpower costs. This model project could be expanded upon by UNICEF.

III. DISASTER PREVENTION AND FORECASTING SECTOR

SUMMARY: DISASTER PREVENTION AND FORECASTING SECTOR

(Thousands of dollars)

Number	Title	Investment	External financing
III.1	Revision of hydrological guidelines for bridge and sewerage projects and other construction works	120	100
III.2	Study concerning the restoration of the ecological balance in the Arroyito basin: Fourth Region	120	100
III.3	Strategic stockpiles of prefabricated bridges	1 500	1 500
	Total	1 740	1 700

No. III.1

PROJECT OUTLINE

Sector: Disaster prevention and forecasting

Subsector: Technical co-operation

Project title: Revision of hydrological guidelines for bridge and sewerage projects and other construction works

Project objectives: To adopt new guidelines concerning the scaling and siting of structural works, roadways and railways.

Description of activities to be carried out: A review of updated hydrological series, including data on the recent disaster, with a view to redefining the hydrological guidelines for the design of construction works.

Expected project output: New hydrological guidelines for the design of construction works.

Total investment required: US$ 120 000

Breakdown (US$)		Financing (US$)	120 000
· Manpower:	10 000	Local:	20 000
· National inputs:	10 000	External:	100 000
· Imported inputs:	100 000		

National agency in charge: INETER

Tentative duration: 6 months

Estimated starting date: March 1989

Special observations:

No. III.2

PROJECT OUTLINE

Sector: Disaster prevention and forecasting

Subsector: Technical co-operation

Project title: Study concerning the restoration of the ecological balance in the Arroyito basin: Fourth Region

Project objectives: To propose a programme for the correction of waterway channels and soil conservation in the Arroyito river basin.

Description of activities to be carried out: An analysis of options and the formulation of recommendations concerning the most effective and economical means of preventing adverse ecological impacts in the Arroyito basin.

Expected project output: A technical proposal concerning the best option for re-establishing the ecological balance.

Total investment required: US$ 120 000

Breakdown (US$)		Financing (US$) 120 000	
- Manpower:	10 000	Local:	20 000
- National inputs:	10 000	External:	100 000
- Imported inputs:	100 000		

National agency in charge: DIRENA

Tentative duration: 6 months

Estimated starting date: March 1989

Special observations:

No. III.3

PROJECT OUTLINE

Sector: Disaster prevention and forecasting

Subsector: Emergency

Project title: Strategic stockpiles of prefabricated bridges

Project objectives: To set up a reserve stock of prefabricated bridge sections to meet temporary needs during the rainy season.

Description of activities to be carried out: Purchase of 500 metres of prefabricated single-lane bridges, in addition to tools and equipment for their assembly.

Expected project output: The availability of means of re-opening roadways whose bridges suffer deterioration or damage as a result of future floods.

Total investment required: US$ 1 500 000

Breakdown (US$)		Financing (US$) 1 500 000	
· Manpower:		Local:	
· National inputs:		External:	1 500 000
· Imported inputs:	1 500 000		

National agency in charge: Ministry of Construction and Transport (MCT)

Tentative duration:

Estimated starting date: Before May 1989

Special observations: