

SUPPLEMENTARY EL NIÑO EMERGENCY PROGRAM
(COASTAL HIGHWAY SYSTEM)

(EG-0187)

EXECUTIVE SUMMARY

BORROWER AND GUARANTOR:	Republic of Ecuador	
EXECUTING AGENCY:	Office of the President of Ecuador, through the Coordinating Unit of the El Niño Emergency Program and the Ministry of Public Works and Communications as the coexecuting agency	
AMOUNT AND SOURCE:	IDB:	<u>US\$48.0 million</u>
		US\$36.7 million (OC)
		US\$11.3 million (OC/IFF)
	Local counterpart funding:	<u>US\$12.0 million</u>
	Total:	US\$60.0 million
FINANCIAL TERMS AND CONDITIONS:	Amortization period:	25 years
	Grace period:	4 years
	Commitment period:	
	- Emergency-related components:	2 months
	- Other components:	6 months
	Disbursement period:	
	- Short-term rehabilitation:	12 months
	- Other components:	20 months
	Interest rate:	variable
	Inspection and supervision:	1%
	Credit fee:	0.75%
	Currency:	Single Currency Facility in United States dollars
OBJECTIVES:	<p>The specific objective is to reopen the coastal highway network damaged by El Niño (before the rainy season next winter). In addition, studies and final designs for the works to be undertaken in an "after-the-emergency" stage will be prepared, covering reconstruction activities to be financed under a new operation.</p> <p>The general objective is to support the actions needed for the protection and temporary rehabilitation of the coastal highway network, as part of the El Niño emergency program ("during-the-emergency" stage).</p>	

DESCRIPTION: The program contains the following components to achieve the aforementioned objective:

a. Emergency-related components:

(1) Short-term rehabilitation. Preparation, implementation and supervision of emergency works to rehabilitate the main coastal highway along some 1,000 km (30 projects) damaged by flooding during the 1997-1998 El Niño event, not included in other scheduled emergency projects funded from loan 1057/OC-EC. (2) Studies for rehabilitation works. This component includes a review and updating of technical studies prepared by the Ministry of Public Works for the short-term rehabilitation works. (3) Works supervision. This component includes supervision of the short-term rehabilitation works. (4) Technical-operational and environmental audits. This component includes technical auditing services to review the administrative procedures used to contract works and to supervise the contracts for preinvestment studies and designs, and report on the financial performance of the program. A specialized firm will be hired to ensure compliance with environmental responsibilities. The firm will also perform environmental evaluations of the program and of the work of contractors and supervisors (see paragraphs 3.17 and 3.28).

b. Other components:

(1) Preinvestment. This component includes the preparation of studies and final designs for highways and bridges for permanent reconstruction of the country's road network. (2) Special studies. This component includes preparation of the following special studies: (i) a plan for coping with emergencies affecting highways; (ii) a road management plan, including urgent activities such as rationalization of the use of equipment, quality control procedures for works, and an investment plan for urgent, priority rehabilitation works and periodic and routine maintenance; and (iii) technical studies on pavement design and quality control, focussing on asphalt mixtures of different thicknesses.

**ENVIRONMENTAL
REVIEW AND SOCIAL
ASPECTS:**

CESI reviewed the document and made the following recommendations:

Ensure that the contractors and works supervisors comply with their environmental responsibilities by

including such responsibilities in their terms of reference. Ensure that the environmental auditing firm verifies compliance.

POVERTY IMPACT: Not applicable

EXCEPTIONS TO BANK POLICY: Given the nature of the emergency and the extent of the damage caused by the El Niño event and in view of the natural disaster policy guidelines (OP-704), it is recommended that:

(i) the program components included in the "during-the-emergency" stage, use the same simplified special procedures that were approved for Loan 1057/OC-EC (El Niño Emergency Program) to procure goods and services, carry out the works, and select and contract consulting services; (ii) with respect to retroactive cost recognition, financing of eligible costs incurred after September 1, 1998, up to US\$10 million equivalent, be authorized provided they comply with requisites that are substantially similar to Bank procedures (see paragraph 3.33); and (iii) the executing agency be permitted to hire directly the same technical and environmental auditing firms that were contracted under loan 1057/OC-EC (see paragraphs 3.17 and 3.28).

PROCUREMENT LIMITS: International competitive bidding will be compulsory for construction contracts valued at more than US\$3 million, goods and related services valued at more than US\$300,000, and consulting contracts valued at more than US\$200,000.

For procurements requiring **international competitive bidding** ("during-the-emergency" stage), the Bank will simplify standard procurement procedures, as follows:

- a. **A single general procurement notice** will be published in *Development Business*. The notice will state that specific procurement notices will be published in certain national newspapers instead of in *Development Business*. The notices in the national press will specify that no restrictions will be placed on participation by foreign firms.
- b. For procurement of works and goods valued at US\$3 million or less, the Bank accepts the procedures for prequalification and qualification of contractors prepared by the MOP (see paragraph 3.22). In the procurement of works and goods, contracts will be awarded to the lowest

bidder. Contracts will be awarded by postqualification, whereby the lowest bidder is selected, subject to verification of his qualifications.

- c. For consulting services, the specific procurement notices will be published in national newspapers, inviting expressions of interest. Based on selection criteria previously established and approved by the Bank, the best firm will be chosen to negotiate the contract. This will replace the standard procedure involving prequalification, short lists, and invitations to bid.

For procurement of works by **direct contracting** or procurement requiring **limited bidding**, the simplified procedure contained in the Operating Regulations will be used, which is the same as the procedure approved for loan 1057/OC-EC (El Niño Emergency Program), adjusted to the conditions of this operation (see paragraphs 3.7 and 3.8) and to the following requirement:

- a. for the direct contracting of works valued at up to US\$500,000 and limited bidding for works valued at between US\$500,000 and US\$3 million and for the contracting of services for supervision and construction, the contracts will be based on lump sum amounts stated in United States dollars and payable in sucres at the exchange rate quoted by the Central Bank of Ecuador on the date of payment.

Contracts for the other program components (preinvestment) will be subject to the Bank's standard procurement procedures.

BENEFITS:

The program will help to alleviate serious problems with travel on highways along the Ecuadorian coast that were damaged by the torrential rains caused by the 1997-1998 El Niño event. In the short term, the main coastal highways linking the country's production centers will be rehabilitated, facilitating and reducing the cost of transporting goods and passengers year round. Safety will be enhanced, particularly on roads carrying the highest volumes of traffic. The project is expected to improve the living conditions of the affected population and contribute to the economic recovery of Ecuador's coastal region.

RISKS:

The following potential risks have been identified:

1. Quality of the works and contracting time. The works for this program must be contracted within 2 months after the effective date of the loan contract and executed rapidly, which could entail the risk of jeopardizing the quality and standards of the projects. To minimize this risk, a list of eligible projects has been established in conjunction with the MOP and prioritized on the basis of the guidelines for the emergency stage, terms of reference for technical and environmental quality control procedures and design. Most of the works (80%) involve bituminous surface treatment, which does not require sophisticated asphalt plants and will provide more opportunities for using local manpower. This will improve competitiveness and open up the construction market.
2. Counterpart. Given Ecuador's economic and financial situation (drop in oil prices, banana exports, etc.) there is the risk that the counterpart will not be made available in a timely fashion. However, the government has informed the Bank that it has already identified the counterpart funds and will give priority to allocating them to this program.
3. Environmental risk. Although the project works involved are simple, there is always the risk of pollution from improper use of construction materials, inadequate management of work sites or the use of rights-of-way as dumps for trash and other waste. To alleviate these risks, the contracts for supervision of the works will demand strict compliance with the rules and procedures for environmental impact control established by the MOP.

**THE PROJECT'S
PLACE IN THE
BANK'S COUNTRY
AND SECTOR
STRATEGY:**

The Bank's natural disaster policy (OP-704) is to cooperate with countries prior to, during, and after emergencies, assist them in protecting themselves from the impact of disasters and in effectively restoring their socioeconomic development. It also provides assistance for the adoption of appropriate measures to prevent or reduce losses caused by natural disasters.

The proposed program complies with the objectives of the Bank's natural disaster policy and is consistent with the policy that led the President of Ecuador to declare a national state of emergency in Executive

Decree 425 of July 2, 1997. The government has maintained this state of emergency in areas where coastal roads have been rendered impassable by the El Niño event.

Although El Niño ended in June of this year, its effects and consequences are still being felt in the area targeted by the proposed program. Therefore, the main components of this operation should be considered as part of the "during-the-emergency" stage, in accordance with the guidelines established in loan 1057/OC-EC. They are intended to bring transportation and socioeconomic development in the region back to normal.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

Conditions precedent to the first disbursement:

(i) approval of the program Operating Regulations, the coexecution agreement between COPEFEN and the MOP, and an agreement on the selection of consulting firms to provide supervision with MOP/CORPECUADOR (see paragraph 3.7); (ii) review and approval of the terms of reference and simplified design for emergency rehabilitation of the roads in the program (see paragraph 3.10); (iii) review and approval of the terms of reference and contracts for supervision of construction works (paragraph 3.30); (iv) review and approval of the contracts for the technical and operating audit firm (see paragraphs 2.13, 3.17 and 3.28).

Other special conditions:

(i) contracting of the firm in charge of environmental assessments and monitoring of the program within a period of 30 days after the date of signature of the loan contract (see paragraphs 2.13, 3.17, and 3.28); (ii) presentation of an annual maintenance plan and a report on maintenance performed on the program works in the preceding year (see paragraph 3.13); (iii) follow-up meetings (see paragraph 3.36); (iv) mechanism for ex post review of design, works, supervision, and audit of the emergency program, adopted by the Controller General of the Republic (see paragraph 3.27); and (v) presentation of progress and special reports (see paragraph 3.37).

I. FRAME OF REFERENCE

A. Macroeconomic framework

- 1.1 Ecuador's economy continued to deteriorate in 1998. It suffered from two severe blows, one natural (El Niño) and the other external (the drop in oil prices), experienced in a political environment dominated by presidential and congressional elections. All these factors helped to create a projected fiscal and balance of payments of deficits of 7% and 8% of GDP, respectively.
- 1.2 The previous government's economic policy was unable to provide a suitable response to the process of economic deterioration. Inflation continued to climb, reaching 34% per annum at the time of the change in government. Last September 14, the Central Bank hiked the exchange-rate band by 15%, which pushed annual devaluation of the sucre to 48%.
- 1.3 One of the priorities of the government that took office last August 10 is to reestablish economic stability by increasing fiscal revenues, modernizing the State, divesting itself of public companies, and providing targeted subsidies.
- 1.4 This process has already begun with the elimination of the general subsidies on gas, electricity and diesel. In compensation, a system of monthly allowances of 100,000 sucres (about US\$17) for poor mothers and of 50,000 sucres (about US\$8) for the elderly is being introduced. The net impact of these measures will be to reduce the fiscal deficit by 1.6% of GDP. The government has begun talks with the International Monetary Fund and expects to reach an agreement by the first quarter of 1999 at the latest.

B. State of emergency caused by the 1997-1998 El Niño

- 1.5 On July 2, 1997, the government issued a national state of emergency decree and ordered the civil defense agency to draw up a contingency plan. The plan defined the responsibilities of various government agencies in three stages – before, during, and after the emergency. The El Niño Emergency Program Coordinating Unit (COPEFEN) was established to coordinate execution of the activities provided for in the plan (Executive Decree 740 of October 13, 1997). In April 1998, it was provided with suitable operating and financial capacity and the Vice President of Ecuador was given the task of coordinating government actions to cope with the emergency and plan reconstruction of the affected areas.
- 1.6 The climate changes associated with El Niño began in October 1997. The average sea level rose to a peak of 45 centimeters above normal (December 1998), the average sea temperature rose to 30°C as compared with normal values of 26.5°C, and accumulated rainfall in

Guayaquil during the year was over 4,000 millimeters (about four times higher than normal).

- 1.7 Given the extent of the damages anticipated, the government asked various international agencies for support to finance actions in the three stages mentioned (before, during and after the emergency). The activities that required financing included protection and rehabilitation of the road system, sanitation services, power grids, schools and educational services, flood protection works, shelters and housing, food supplies and health services.
- 1.8 Estimates made when preparing the El Niño emergency program (October 1997) placed the cost at close to US\$231 million or 2.1 percent of GDP. The program received financial support from the World Bank, the Andean Development Corporation and the IDB and is currently under way.

C. Impact of the 1997-1998 El Niño

1. On the country

- 1.9 El Niño had its heaviest impact on the Ecuadorian coastal region. Fifty percent of the country's population lives in that region, most agricultural, commercial and export activities take place there and the largest city - Guayaquil - is also the country's main seaport. Flooding occurred in extensive zones along the coast. On steep land, the rainfall led to oversaturation of slopes and landslides occurred that destroyed roads, bridges, housing and other infrastructure. Access between large urban areas and most rural areas was seriously threatened and some provinces were completely closed to human and vehicular traffic. The situation lasted longer than expected, since the rains continued in May 1998 and the sea level rose again. Things began to improve in June 1998.
- 1.10 The population on the Ecuadorian coast was hardest hit. The daily lives of virtually all the 6.5 million inhabitants were affected by floods, torrential rains, high seas and tides, overflowing rivers, and landslides. By June 1998 there had been 286 deaths, 162 injuries, and 36 disappearances. Some 29,000 properties suffered serious damage and another 60,000 experienced less severe damage. The economic costs and damage to infrastructure continue to affect Ecuador's coast.
- 1.11 The impact of El Niño on the country's population and economy up to June 1998 is summarized in the following table.

IMPACT OF EL NIÑO ON THE PUBLIC AND THE ECONOMY

I. Population directly affected (number of people)				
Population suffering personal injury			Population suffering property damage	
Deaths	Injured	Disappeared	Serious damage	Less serious damage
286	162	36	29,023	29,568
II. Economic costs (US\$ millions)				
Damage to infrastructure		Reduction in potential GDP		
Road infrastructure	204.4	Agricultural value added	128.0	
Housing	35.5	Wages (included in value added)	25.0	
Health, potable water and sewerage	35.5	Value added as % of agricultural GDP	5.0	
Schools	20.1	Owing to calculation difficulties, operating costs (medicine, civil defense, evacuations, etc.) and losses in the business and tourism sectors have not been included.		
Electric power infrastructure	19.0			
Urban infrastructure	3.0			
TOTAL INFRASTRUCTURE	317.5	Sources: Población (at June 15, 1998), ECLAC. Costos económicos: Vos, Velasco and Labastida "Efectos Económicos y Sociales de El Niño", 1998.		

- 1.12 Given the serious effects of El Niño and the resulting interruption in basic and major services, the economic cost to the country has been large. The cost of the damage to infrastructure and physical assets (housing, sanitation, schools, health facilities, transportation and urban infrastructure) and of protection for hydraulic and energy works is now put in the aftermath of the disaster at US\$317.5 million. For the El Niño program (partially financed with loan 1057/OC-EC), the emergency funding needed to restore physical infrastructure to the point where it can be operated again was estimated at about US\$161.5 million, or approximately 50% of the damage occasioned by the disaster. Since the focus of the program is to repair emergency situations, the funding available from August 1998 for rehabilitation of works is limited.
- 1.13 Production losses mainly affected the agriculture and fisheries sectors in the form of unplanted crops, flooding, difficulties in transportation and the migration of marine species. The losses amount to an estimated US\$128 million (5% of agricultural GDP), US\$25 million of which are due to lost wages. Equivalent unemployment is some 2.5 million person/days of work. Many of the unemployed on the coast migrated temporarily to the sierra, swelling the unemployment indexes in the country's main cities. The economic costs continue to rise owing to restrictions on infrastructure services, principally transportation. Farming and fishing on the coast are currently suffering the most.

2. On the highways

- 1.14 The condition of roads on the coast has a crucial impact on the Ecuadorian economy, since 80% of the country's nonoil exports (bananas, shrimp, tuna, cacao, fish, fish meal, wood, etc.) come from agribusiness and the fishing industry in the provinces of El Oro, Guayas, Manabí, Los Ríos and Esmeraldas. The drop in exports of these products reflects the direct impact of El Niño on the harvest as well as the difficulties in transporting produce from farms to wholesale centers and from the latter to the ports. Furthermore, the coast supplies markets in the sierra with many agricultural products and difficulties in delivering these supplies during El Niño helped to speed up inflation. In their current condition, the coastal highways are passable but very precarious and it is feared that when winter comes serious transportation problems will reappear unless the necessary works are carried out quickly.
- 1.15 A diagnostic assessment performed by the Ministry of Public Works and Communications (MOP) in May and June 1998 estimated that about 8,000 km of roads were affected countrywide. Close to 2,500 km are paved roads in the coastal region (provinces of Esmeraldas, Guayas, Manabí, Azuay, Los Ríos, Cañar, El Oro and Loja). Thirty-four bridges on main and secondary roads in those provinces and 467 minor structures (drains and containing walls) were destroyed. In the other provinces, damage was reported to 14 bridges and about 380 minor structures. It should be noted, however, that the condition of the roads was quite poor prior to the disaster, which undoubtedly contributed to the damage caused by the phenomenon. Direct damage to the main road system (primary, secondary, tertiary, local roads and bridges) is estimated at close to US\$204 million. This estimate is based on what it would cost to return the infrastructure to the condition it was in prior to El Niño.

D. El Niño emergency program (IDB, World Bank and CAF loans)

1. Background

- 1.16 The El Niño emergency program, which totals US\$231 million, is financed with external funding of US\$25 million from the Andean Development Corporation (CAF), US\$80 million from the World Bank and US\$105 million from the IDB. The local contribution is US\$21 million.
- 1.17 The CAF funds were mainly used for projects, works and different actions in the prevention stage, prior to the phenomenon. The IDB and World Bank funds have been used thus far to deal with program areas in the "before" and "during" the emergency stages.
- 1.18 COPEFEN has entered into agreements with the Ministry of State, the Ministry of Agriculture, the Ministry of Public Works and

Communications, the Ministry of Urban Development and Housing, provincial councils, municipalities, regional development agencies such as the Emergency Social Investment Fund (FISE), the UNDP and the National Red Cross. They have also been used for institutional strengthening of the civil defense system. Total program funding earmarked for emergency activities to restore infrastructure services is close to US\$100 million (rehabilitation of roads and bridges, waterworks, protection for cities, sanitation works).

- 1.19 The current distribution of financing under that program is shown in the following table.

COPEFEN. Financial program as of August 7, 1998
(US\$ millions)

Source	Approved	Committed	Available
IDB	105.0	82.2	22.8
World Bank	80.0	56.7	23.3
CAF	25.0	25.0	0.0
Subtotal, external	210.0	163.9	46.1
Ecuadorian government	21.0	4.0	17.0
Total	231.0	167.9	63.1

2. IDB loan 1057/OC-EC

- 1.20 By August 1998, the Bank had disbursed US\$46 million, or 55% of the total loan (US\$105 million). This funding has been used to cover temporary shelter for the victims, emergency flood protection works, sanitation works, emergency road works, works to protect cities, waste and debris removal and management program, food supplies, and humanitarian assistance for victims, and to strengthen the civil defense system.
- 1.21 As of August 1998, total commitments came to US\$82.2 million, of which US\$16 million are for rehabilitation of the Cuenca-Molleturo-Empalme highway and US\$6 million for strengthening of the civil defense system (social and environmental mitigation measures), which will enable the country to prepare for future natural disasters.
- 1.22 The COPEFEN/MOP agreement signed in December 1997 made it possible to carry out emergency works on coastal highways that had been damaged, allowing limited, temporary access to areas that had been cut off when highways and roads were closed. Between December 1997 and June 1998, a total of 119 works were contracted, chiefly consisting of landslide removal, replacement and/or building of drainage and other minor concrete structures, construction of walls to contain and divert water, rapid replacement of breached landfills and other emergency activities. To date, COPEFEN has authorized disbursements of US\$10 million equivalent. These

emergency works were mainly performed without designs on the basis of hours of team work and at specific amounts for each project, with the result that the roads covered under this emergency stage require rehabilitation in order to be useable for the next three to five years.

- 1.23 Some projects, whose works have not begun yet, have been contracted by the MOP using standard contracts that do not follow the model contract agreed upon with the Bank. They will not be eligible for financing from Bank funds and COPEFEN has required the MOP to cancel them. The new authorities that have been running the MOP since August 1998 have begun to take special steps to overcome these difficulties so that the projects can be cleared and included in the emergency rehabilitation program and Bank financing can be used.
- 1.24 **Technical-operational audit.** The contracting of the firm to perform the technical-operational audit of the program was delayed and the original contractual deadline needed to be extended. It is expected that this firm will be hired by the end of November 1998.
- 1.25 **Environmental impact assessment.** An environmental specialist was contracted for COPEFEN, who is responsible for verifying the projects and works in the program. However, a specialized firm needs to be engaged to take charge of evaluating the environmental impact of projects, particularly road rehabilitation, sanitation and potable water projects. It is expected that the firm will be contracted by late november 1998.
- 1.26 **Lessons learned.** Since no technical and operational evaluations exist, it is hard at this time to draw any direct conclusions as to unit costs of the physical works completed and the efficiency of the contracting procedures used under the program, particularly for purposes of making valid comparisons for new operations of this kind. However, it has been possible to revise the structure and the plan for implementing the new supplementary emergency road rehabilitation operation based on the following preliminary findings: (i) to have a technical and financial classification of the capacity of the contractors, (ii) to have basic (not detailed) designs with benchmark quantities and costs, (iii) to implement a competitive system for the selection of contractors (minimum unit costs), (iv) to use rational assumptions in scaling the magnitude of the works and to prepare competitions for qualified contractors, (v) develop terms of reference and quality control procedures for the firms that will supervise these emergency works, (vi) have contractors bear responsibility for the quality of the works for at least two years, (vii) draw up lump sum construction and supervision contracts (in United States dollars) and eliminate price escalation clauses based on unit costs, (viii) require that the Bank's procurement procedures for works and services go hand in

hand with similar or equivalent procedures found in national legislation.

E. The highway sector

- 1.27 The highway system is very important in Ecuador's economic life; roads are the basic infrastructure to meet the demand for transportation services in the country. Paralyzation of the railways, the nonexistence of river transport, and the scant relative importance of air transport make it more urgent for the highway infrastructure to be in good operating condition. Consequently, the government has made a considerable effort to expand the national primary and secondary road network. However, many of the highways are now over 20 years old and have surpassed their design horizon and pavements have outlived their useful life.
- 1.28 The highway and road network is 43,250 km long, with approximately 9,415 km (22%) of main roads, including 5,623 km of primary roads and 3,792 km of secondary roads, all of which are under the direct responsibility of the MOP. The rest of the system is made up of tertiary roads, rural roads and local roads operated by the provincial and municipal governments and the Ministries of Agriculture and Social Welfare.
- 1.29 As of mid-1997, 55% of the 9,415 km of main roads were classified as being in poor to very poor condition, 30% in average condition and 15% in good condition. Subsequent evaluations (May 1998) indicate that just 3% of the network is in good condition.
- 1.30 **Concessions and decentralization.** Since 1996, the MOP has granted concessions to about 690 km of roads to private companies. They involve four corridors, i.e., Rumichaca-Ibarra-Guayllabamba (256 km); Alóag-Latacunga-Ambato-Riobamba (153 km); 1/ the Santo Domingo de los Colorados-Babahoyo-Juján interchange (214 km); and Naranjal-Peaje el Guabo (70 km).
- 1.31 Under MOP executive decrees, decentralization agreements to transfer road maintenance administration and operation have been signed with: the Pichincha Provincial Council (CPP) for interurban roads (General Rumiñahui expressway - 12 km) and the Alóag-Santo Domingo de los Colorados highway (100 km); the Guayas Provincial Council (CPG) for approximately 500 km; and the Metropolitan District of Quito for administration of the northern, southern and eastern access roads to the city. The MOP also has some 300 agreements with municipalities, provincial councils and regional

1/ IDB-PRI financing for this project is pending approval, subject to acceptance of the resettlement plan. The concessionaire is working with its own resources on maintaining the surface of the corridors and rehabilitating the pavement.

development agencies involving contracts of loan and restitution for machinery to be used in the expansion and maintenance of local and tertiary roads.

F. Bank participation in the highway sector

- 1.32 **Loan 227/IC-EC. Highway rehabilitation and improvement program.** The main purpose of this program was to improve part of the country's main highway system. It was modified to include an emergency program in the south (Loja province) and completion of the Cuenca-Molleturo-Empalme highway, including environmental compensation works. The latter could not be completed with the resources allocated and it was necessary to continue its financing with proceeds from loan 723/OC-EC. Similarly, some of the socioenvironmental activities are being covered out of loan 1057/OC-EC, which is currently being executed, as described below.
- 1.33 **Loan 723/OC-EC. National highways program.** This program, which is close to completion (February 1999), has achieved partially positive results in terms of road construction and improvement and urgent works (as a result of earthquakes and floods). However, the construction works on the Cuenca-Molleturo-Empalme highway (conclusion of a previous program - loan 227/IC-EC - which was prepared in the 1980s when environmental considerations were not included in the studies) have encountered serious geological problems owing to instability in the area. The operation also caused social and environmental problems. The MOP is now conducting technical, social and environmental studies to address this situation, monitored directly by the Bank. The highway is currently closed to traffic owing to problems with landslides. 2/
- 1.34 The operation also included significant institutional strengthening components for the MOP, particularly: (i) advisory services and technical assistance for the purchase of computer equipment and training plans; (ii) preparation of an inventory and evaluation of bridges; (iii) advisory services on managing construction and supervision of works; (iv) support for the Environmental Impact Department (DIA) to improve environmental management linked to roads; (v) technical assistance for highway administration planning and decentralization; and (vi) technical assistance to strengthen the Finance Directorate's financial and accounting system.

2/ Loan 1057/OC-EC (see paragraph 1.21) included up to US\$16 million to rehabilitate the Cuenca-Molleturo-Empalme highway, cover environmental and social needs through activities involving hydrogeological analysis, determination of alternatives for sites to dump debris from landslides, improvements in highway drainage, and analysis of damages caused to the population in the zone in order to establish indemnity procedures and amounts.

- 1.35 Nonetheless, previous MOP administrations did not take the initiative necessary to implement the restructuring and strengthening recommendations, which are medium-term activities that require policy decisions. In the first stage, new and specific actions should be defined with MOP authorities to retrieve all the studies and recommendations made by the consultants. Activities to restructure and strengthen the MOP should be carried out during preparation of the highway reconstruction program.
- 1.36 **Sector loan for the modernization of transportation (loan 842/OC-EC).** Execution of this operation has been slow, but results in the modernization and privatization of ports are promising. The new government has expressed interest in continuing with execution and expects to comply with conditions for the second tranche of the loan in the first half of 1999.
- 1.37 **Nonreimbursable technical-cooperation funding.** MIF funds (ATN/MT-4908 and ATN/MT-5877) are being used to promote concessions and privatization of ports, airports and roads. Progress has been made in modernizing and privatizing Guayaquil, the country's main port, and these actions are being expanded to the remaining ports. The executing agency, Consejo Nacional de Modernización del Estado (CONAM) [National Council for Modernization of the State], is making a start on studies for concession of the Quito and Guayaquil airports.
- 1.38 **Loan 1057/OC-EC.** This loan for US\$70.8 million was approved at the end of 1997 to cope with the emergency caused by El Niño. As part of the operation, US\$34.2 million was reallocated from eight operations under way (loans 978/OC-EC, 892/OC-EC, 843/SF-EC, 596/OC-EC, 919/SF-EC, 913/SF-EC, 874/OC-EC and 900/SF-EC). The combined funds allocated to the program total US\$105 million, and execution is satisfactory. A specific component was included in this same operation to complement actions to address the environmental and social impact of the construction of the Cuenca-Molleturo-Empalme highway under loans 227/IC-EC and 723/OC-EC.
- 1.39 Experience with CONAM in the execution of these operations has been good. CONAM has chiefly been responsible for defining transportation policies in general and is a relatively new executing agency for Bank programs, with excellent operational and administrative organization. On the other hand, the institutional weaknesses of the Ministry of Public Works and Communications, the old executing agency of works in the transportation sector (roads), have delayed some of the projects and close monitoring and control by the Bank is required.
- G. Supplementary El Niño emergency program. Coastal highway system
- 1.40 **Natural disaster operating policy.** The chief purpose of Bank participation in addressing natural disasters is to help the member

countries to protect themselves and effectively resume their socioeconomic development. It also tries to take steps to support the initiatives of the countries before, during and after emergencies caused by natural disasters.

- 1.41 The policy establishes that emergency measures include financing for temporary actions to rehabilitate economic infrastructure and the environment, to be carried out as quickly as possible. Actions are also supported to institute a permanent reconstruction and recovery program for the infrastructure affected by a natural disaster.
- 1.42 The purpose of the program proposed here is consistent with the objectives and actions established in the Bank's natural disaster policy and with the plans of the Ecuadorian government which considers it urgent to rehabilitate the main roads on the coast to overcome the detrimental effect that their current condition has on the country's economy, even though the direct impact of El Niño ended in July 1998.
- 1.43 **During the emergency.** The Bank's policy during an emergency includes financing for immediate assistance to prevent or minimize the loss of human life. Activities in this stage can include short-term rehabilitation of roads, waterworks, sanitary works, health care facilities, and the provision of emergency shelter.
- 1.44 The Ecuadorian government is maintaining the state of emergency with respect to highways until such time as short-term rehabilitation makes the roads passable and reduces the damage they could suffer if they are not rehabilitated before the next rainy season. It should be noted that a plan for permanent recovery of the system which would ensure useful life of the infrastructure for 10 to 25 years in this environmentally fragile zone requires detailed engineering and environmental studies for the entire system and at the project level, and at least 12 months are required to conduct the field studies and prepare the work plans. Therefore, reconstruction will come after the proposed short-term rehabilitation in order to permit regional integration with acceptable transportation services and reduce physical damages and economic costs, which would otherwise build up during the study, design and reconstruction periods.
- 1.45 Accordingly, the Bank and the MOP will develop special terms of reference for the design of temporary rehabilitation works (for a useful life of three to five years for the wearing course and for five to 10 years for minor drainage works), with the idea that during this period permanent rehabilitation and reconstruction plans will be designed and implemented with a 10- to 25-year economic horizon. The short-term rehabilitation plan will rapidly repair some 1,000 km of roads to provide access and minimum safety for public travel and safe transportation.

- 1.46 The rehabilitation includes 61 projects over 2,500 km at a direct cost estimated by the government through the MOP (September 1998) of close to US\$105 million. The government estimates that it will have close to US\$63 million available (see the table in paragraph 1.19), but part of these resources have been identified by the World Bank for bridge reconstruction. The remaining funds from the IDB and the local counterpart will be sufficient to cover the requirements for 1,500 km of roads with 31 projects identified. Approximately 1,000 km (30 projects) have been identified for the proposed program, with a direct cost of US\$44 million (see the table in paragraph 2.16).

II. THE PROGRAM

A. Objectives

- 2.1 The general objective is to support, under the El Niño emergency program ("during the emergency" stage), the actions needed to protect and temporarily rehabilitate the coastal highway network damaged by the El Niño event, in order to bring the region's vehicular traffic and socioeconomic development back to normal.
- 2.2 The specific objective is to reopen the coastal highway network damaged by El Niño (before the rainy season next winter). In addition, studies and final designs for the works (preinvestment) to be undertaken in an "after the emergency" stage will be prepared, covering reconstruction activities to be financed under a new operation.

B. Design of the program

- 2.3 The design of the program is based on the government's Emergency Decree of July 2, 1997, declaring a national state of emergency, which defined a contingency plan to cope with the three stages of the emergency (before, during and after). COPEFEN [El Niño Emergency Program Coordinating Unit], which was established to coordinate the plan, has made satisfactory progress in carrying out the principal activities, within the planned guidelines.
- 2.4 The proposed program covers short-term road rehabilitation activities not included in the existing program being financed by the Bank and other multilateral lending agencies (IBRD and CAF) and local funds. The MOP has identified approximately 1,000 km of coastal roads (30 projects) in very poor condition and these will form part of the proposed program.

C. Program description and components

- 2.5 To attain the above objectives, the program includes financing: (a) **during the emergency stage**, for short-term rehabilitation of damaged roads, studies to review the works, supervision of the works, and technical and environmental impact auditing; (b) **in other components**, preparation of studies and designs for projects (preinvestment) for the permanent reconstruction of the network damaged by El Niño and special studies to contribute to this goal.
- 2.6 Eligible projects must comply with the following general and specific criteria: they must be located in the emergency zone declared by the government, their state of repair must be ascribable to the effects of El Niño, an assessment of their urgency, magnitude, risk and impact must exist, and must have technical designs reviewed and approved by the Bank.

1. Direct costs. Rehabilitation works (US\$40.7 million)

2.7 The projects consist of rehabilitating works with a useful life of from three to five years. The current design standards of each road will be maintained, i.e. they will be repaired through patching or a subbase and/or base, and/or triple bituminous surface treatment or an equivalent binder layer, as necessary. In special cases where the traffic count is 6,000 vehicles a day or more, an asphalt concrete layer of up to 5 cm will be laid as the wearing course. This type of repair will be performed on no more than 20% of all the roads in the program.

2.8 Ditches and channels will be cleaned, drains and curbs will be rebuilt and/or new ones will be built, debris from landslides will be removed, and failed landfills will be reconstructed. Roads will be provided with traffic signs and protection for safe travel. The signage (horizontal and vertical) will comply with the requisites established in MOP manuals.

2. Studies and supervision of rehabilitation works (US\$3.5 million)

2.9 The technical studies prepared by the MOP (profiles and budgets) for the short-term emergency rehabilitation works (3 to 5 years) will be revised and updated by a technical team (local consultants) contracted by the ministry under terms of reference agreed upon with the Bank. For minor works, the design horizon will be from 3 to 10 years.

2.10 The program will finance supervision of the emergency rehabilitation construction works for all the program's roads. Supervision will be performed applying the agreed terms of reference and procedures, and will be performed in parallel with the activities of the contractors. Works will not begin until supervision is in place.

3. Preinvestment (US\$4.5 million)

2.11 The program includes preparation of studies and final designs for roads and bridges for the reconstruction stage, and they must be programmed to cope with any natural disasters that may arise in the future. Also included are procedures for managing environmental liabilities and controlling any adverse environmental effects caused by the reconstruction works. Consultants will be hired for this purpose, following the Bank's standard procedures for contracting consulting services.

4. Special studies (US\$1 million)

2.12 The program includes execution of the following special studies: (i) highway emergency plan; (ii) preparation of a road management plan including urgent activities such as rationalization of the use

of equipment, procedures for controlling the quality of works, and an investment plan for urgent and priority rehabilitation and periodic and routine maintenance; and (iii) technical studies on quality design and control of pavements, focussing on pavements with asphalt mixtures of different thicknesses. Consultants will be hired for this purpose, following the Bank's standard procedures for contracting consulting services.

5. Technical and environmental audits (US\$200,000)

- 2.13 Given the nature of the program, which entails a large number of scattered works to be executed concurrently and involves a large number of contracts and very tight execution schedules, technical audit services will be engaged to assist with supervision of the works, with responsibility for reviewing the administrative procedures used to contract the works and for supervision of the contracts for preinvestment studies and designs. The audit will also report on financial performance of the program. A specialized firm will be hired to ensure compliance with environmental responsibilities. The firm will also perform environmental evaluations of the program and of the contractors and supervisors (see paragraphs 3.17 and 3.28). Contracting of the technical auditing firm is a condition precedent to the first disbursement. The auditing firm will be hired to perform environmental assessments and monitoring within 30 days after the date of signature of the loan contract.
- 2.14 Quarterly reports will be presented to COPEFEN and the MOP, with copies to the Bank, during the program.

6. Administration (US\$600,000)

- 2.15 COPEFEN's administrative costs are put at US\$600,000 for this program. The MOP will defray the administrative costs of the proposed program (personnel, offices, transportation, logistics, etc.) using funds from its budget for the corresponding fiscal year, which will not be included in the counterpart.

7. Contingencies (US\$4.4 million)

- 2.16 Given the emergency nature of the works and considering that some of the rehabilitation works will be carried out during the rainy season, US\$4.4 million is being allocated to cover contingencies.

8. Financial expenses (US\$5.1 million)

- 2.17 At the government's request, interest expenses (US\$4.3 million) accruing on the financing under the program are being charged to the borrower, together with the credit fee and fees for inspection and supervision.

D. Cost and financing

- 2.18 The supplementary program will cost US\$60 million, with the Bank contributing US\$48 million and the local counterpart contributing approximately US\$12 million equivalent. A breakdown of the financing for the program is shown in the following table.

PROGRAM COST AND FINANCING
(US\$ millions)

Investment category	IDB		Local	Total	Percent
	OC/IFF	OC			
1. Direct costs	<u>11.2</u>	<u>22.2</u>	<u>7.3</u>	<u>40.7</u>	67.8
- Rehabilitation works	11.2	22.2	7.3	40.7	
2. Studies and supervision		<u>3.5</u>		<u>3.5</u>	5.9
- Study of rehab. works		0.5		0.5	
- Supervision of works		3.0		3.0	
3. Preinvestment		4.5		4.5	7.5
4. Special studies		1.0		1.0	1.7
5. Technical and environmental audits		0.2		0.2	0.3
6. Administration		0.6		0.6	1.0
7. Contingencies		4.4		4.4	7.3
8. Financial costs	<u>0.1</u>	<u>0.3</u>	<u>4.7</u>	<u>5.1</u>	<u>8.5</u>
- Inspection and supervision	0.1	0.3	0.0	0.4	
- Credit fee	0.0	0.0	0.4	0.4	
- Interest	0.0	0.0	4.3	4.3	
Total	11.3	36.7	12.0	60.0	100.0

III. PROGRAM EXECUTION

A. Borrower, executing and coexecuting agencies

- 3.1 The borrower will be the Republic of Ecuador and the executing agency will be the Office of the President of the Republic through the Coordinating Unit (COPEFEN) which is also executing the El Niño emergency program, since this operation supplements the activities planned under the original program financed with funds reallocated from other Bank loans and loan 1057/OC-EC.
- 3.2 The Ministry of Public Works and Communications (MOP) will be the coexecuting agency and will act on the basis of the Operating Regulations agreed upon with the executing agency.

B. Other agencies

- 3.3 CORPECUADOR is another national agency involved in the sector. It is an entity under public law with its own capital base, created by congress under Law 120 of August 7, 1998, with the capacity to acquire rights and contract obligations. It is headquartered in the city of Guayaquil. Its main objective is the rehabilitation and reconstruction of zones destroyed by El Niño and its maximum duration will be 10 years.
- 3.4 CORPECUADOR will participate in the process of selecting consultants to supervise the works in the proposed program, under an agreement with the MOP. However, the MOP will be responsible for supervision and hiring of supervisory services as required and for compliance with the technical and operating standards.

C. Operating framework

- 3.5 COPEFEN will bear primary responsibility for program administration and financial monitoring. The MOP will be responsible for executing the highway rehabilitation works, their supervision and compliance with the environmental aspects of the program, including the contracting of studies and final designs for the road reconstruction projects. Under a direct agreement with the MOP, CORPECUADOR will be responsible for selecting firms to supervise the construction of the rehabilitation works, using the procedures for contracting consulting services herein established. This process will require the Bank's nonobjection. The MOP will also present to the Bank for the latter's nonobjection, the terms of reference and scope for supervision of the construction works prior to start up of the works. **The approval of the terms of reference and the model contract for supervision of the construction works is a condition precedent to the first disbursement for this operation.**

- 3.6 The MOP's activities will be governed by the coexecution agreement with COPEFEN, approved by the Bank. The agreement sets out general guidelines and specific criteria for program operations.

D. Program execution

- 3.7 The executing agency through COPEFEN and the MOP will carry out the program's activities by applying the Operating Regulations similar to those used by COPEFEN in the program currently under way (loan 1057/OC-EC), but specifically for the sole coexecuting agency under the proposed program and to include the specific requirements for this operation described in the paragraph below. Based on these Operating Regulations, a coexecution agreement or contract will be concluded between COPEFEN and the MOP. For the selection of the consulting firms to supervise the construction works an agreement will be entered into between the MOP and CORPECUADOR to determine this role. Adoption of these procedures has the advantage of speeding up contracting and implementation of the rehabilitation works. **Approval of the Operating Regulations, the coexecution agreement between COPEFEN and the MOP, and the agreement for the selection of supervision firms between the MOP and CORPECUADOR will be a condition precedent to the first disbursement.**

- 3.8 The operating procedures in coexecution agreement will include the following: (i) frequency of participation and selection of a building contractor or a consulting firm from among the group invited to present offers; (ii) the maximum number of contracts for works and/or services and the amount that can be awarded to a given company or firm, based on financial and execution capacity (availability of equipment); (iii) the indivisibility of the works to be contracted directly (costing US\$500,000 or less), since the list of 30 projects will correspond to a maximum of 30 contracts; and (iv) the maximum cost of direct contracts may not be over US\$3 million per contractor.

E. Selection, programming and execution of the investments

1. Project selection

- 3.9 The program will finance emergency works to rehabilitate the main highways in the coastal provinces. The roads have already been identified and no changes are anticipated in those listed. However, if the MOP finds it necessary to make changes to the program during execution, it will submit duly justified requests to the Bank.
- 3.10 The roads selected are important on account of their functionality and importance in the local network and their place in national systems to which they are linked. They are subject to substantial use, measured in terms of average daily traffic and the types of vehicles that travel them. **The terms of reference and the**

simplified designs for rehabilitating the selected roads will be reviewed and approved by the Bank prior to the first disbursement.

2. Rehabilitation works

- 3.11 Given the nature of the emergency declared by the government for rehabilitation of the coastal highway system (see paragraph 1.15), the MOP has begun to select consultants to update the emergency designs and to hire construction contractors, using funds available under the El Niño emergency program (loan 1057/OC-EC). The program is expected to begin work simultaneously on almost all of the selected roads.
- 3.12 The emergency rehabilitation works will take from three to five months to complete. Given the high probability that the rainy season in this area will begin in December 1998 or January 1999 and last until July 1999, contracts will have to be awarded for all of the works within two months after the effective date of loan contract so that they can be completed by the next dry season (August-December 1999). The activities are mostly simple, such as cleaning ditches and removing vegetation, and the works involve the use of local materials and asphalt sealers (80% of the works) which maximize the use of local labor. Just 20% of the works, which need new wearing courses, require the use of some heavy construction equipment. There are enough construction companies in the country to build the programmed works.

3. Routine maintenance

- 3.13 The government, through the MOP, will administer routine maintenance of the highways in the program for a period of two years, under contracts with the builders of the short-term rehabilitation works. It will continue to take responsibility for routine maintenance of program roads.

4. Preinvestment studies and designs for reconstruction

- 3.14 The program includes preinvestment activities to make a thorough analysis of the damages and plan permanent solutions (with 10 to 25 years' useful life). Owing to the technical complexity and environmental fragility of the affected zone, it will be necessary to follow standard procurement procedures for these consulting services.
- 3.15 It will take approximately 16 months to prepare the preinvestment studies and designs. This period includes the time needed for selection and contracting, which should begin in the first three months after the loan contract is signed.

5. Special studies

- 3.16 The program includes special studies to provide the MOP with a tool for dealing with future road emergencies and a highway management plan that includes urgent activities. The use of the MOP's construction equipment also needs to be rationalized and procedures must be established for quality control of the works. Also required are technical studies on the design and quality control of pavements, and particularly pavements with asphalt mixtures of different thicknesses. These activities could be contracted within four months after the effective date of the loan contract becomes effective and executed in 12 months, at most. Standard procedures will be followed in contracting these consulting services.

6. Environmental procedures

- 3.17 COPEFEN has an environmental specialist hired under the El Niño emergency program (loan 1057/OC-EC), and it will contract a specialized firm to evaluate and monitor the environmental impact of the projects financed under that program. For the present program, borrower will hire a firm to be responsible for the environmental assessments of the projects in the new operation and will start these tasks when the supplementary program gets under way (see paragraph 3.30). **The firm will need to be hired within 30 days after the date of signature of the loan contract.**
- 3.18 On account of the program's objectives and its nature, which mainly includes short-term rehabilitation projects in affected zones or regions, the potential environmental impact is expected to be brief and temporary. The engineering measures needed to prevent or control these impacts are simple, since the project will be carried out on existing roads. The inclusion of suitable technical specifications and application of basic rules of procedure will guarantee the success of the program from the environmental standpoint.
- 3.19 The projects involve activities that require the inclusion of environmental management measures, since they entail the operation of machinery, equipment and asphalt plants (20% of the works). The bidding documents and contracting of supervision firms for construction works will include environmental specifications to control air pollution from exhaust and water and/or soil pollution from combustible residues, grease and asphalt waste. The terms of reference and bidding documents for contracting the designs for works and supervision incorporate these requisites.
- 3.20 The environmental management plan for each project will have a *monitoring program* that will furnish the project managers and supervisory firms with indicators of the quality of the natural and social environment and the effectiveness of the mitigation measures. The supervision should include the use of *environmental*

inspectors with explicit responsibilities for monitoring and enforcing environmental specifications and procedures during project execution. **The MOP's Environmental Impact Department (DIA) will bear overall responsibility.** This management plan seeks to ensure effective compliance by the executing agency and to establish a clear system of penalties for all players in the program.

F. Procurement procedures

- 3.21 The procedures to be used will be the same as those authorized by the Bank for the "during the emergency" stage of the El Niño emergency program.
- 3.22 The MOP has prepared a list of prequalified contractors according to criteria approved by the Andean Development Corporation and has a list of over 60 contractors based on financial and technical capacity to carry out the projects. This list has been used in contracting for emergency rehabilitation works funded under loan 1057/OC-EC. The project team has agreed to use this list of prequalified contractors for the program in light of the nature of the emergency works. That is why the Bank is not demanding any additional prequalification provided that the cost of the works does not exceed US\$3 million. The MOP indicated, however, that this list will be updated through the publication of a general procurement notice inviting interested firms to prequalify. Companies that comply with the requisites will be prequalified and may be included in short lists or called upon to submit quotes directly.
- 3.23 For limited bidding on one or several works, the MOP will send invitations to at least six prequalified companies. In special cases identified by the MOP, the short list may be reduced to not less than three firms. The MOP will be required to justify such decisions to COPEFEN and the Bank.
- 3.24 Companies may bid on one or several works, individually or collectively. The invitation will specify the works to be performed, the information available, the deadline for indicating intention to bid and the deadline for presenting the bids. The firms may examine the documentation in the MOP's possession and perform visual inspections of the roads prior to presenting their economic and technical bids. Awards will go to the lowest bidders and the contracts will be signed with them, provided their technical bids are adequate.
- 3.25 The Bank will approve the model contract to be used by the MOP and no subsequent consultations or additional prior approvals of private contracts will be required. The Bank will periodically conduct ex post reviews of a sample of contracts to verify that the procurement procedures established in the loan contract have been

complied with. If substantial noncompliance is found, it may withdraw financing for the contracts in question (see paragraph 3.30).

- 3.26 The selection process is expected to be relatively rapid. No more than 21 days should elapse between the invitation and selection of the contractor, including 15 days for the contractor to visit the work and prepare its bid. However, during the program identification mission, the Bank and the MOP found that approval of the contracts by the Controller General required an additional 21 days as a minimum.
- 3.27 In order to comply with the period for carrying out the short-term rehabilitation works, all the works should be completed by December 1999 (see paragraph 3.12). Owing to the difficulty mentioned in the preceding paragraph, the Controller General will have to adopt an ex post mechanism for reviewing the construction and supervision contracts, similar to the one used by the Bank. It will approve the model contract for the works and verify each contract through ex post reviews. This procedure will permit the borrower to adequately address the emergency requirements, saving a substantial amount of time in making a start on the rehabilitation works. This contractual condition of eliminating ex ante reviews by the Controller General will apply to all activities concerned with designs, works, supervision, and emergency audits of the program (the sole exception of preinvestment activities).

G. Audits

- 3.28 For the technical and environmental audits, COPEFEN will hire in accordance with the terms and conditions agreed on with the Bank a firm to perform technical and operational audits and a firm to evaluate and monitor the environmental impact. The audit reports will be submitted to the Bank every three months as part of the progress reports. To this end, the service contracts for the technical and operational auditing firm will need to be in effect prior to the first disbursement. The firm performing the environmental evaluations and monitoring will need to be hired within 30 days after the date of signature of the loan contract (see paragraph 3.17).
- 3.29 The program's financial statements will be presented to the Bank annually. COPEFEN will consolidate information on the use of program funds. The external financial auditors contracted in accordance with Bank rules and procedures will have access to the accounting records and supporting documentation in the possession of the executing agency and the MOP.

H. Contracting of works and supervision

- 3.30 The MOP will use the model contract agreed upon by COPEFEN and the Bank for the contracts for rehabilitation works and supervision of construction, which will be for a lump sum in dollars (see paragraph 3.25). In other words, the contracts will not be subject to price or quantity adjustments. They will include penalties for delays in execution of the works and, consequently, for delivery of the roads later than the contractually-agreed date. The contracts will include performance guarantees that will compensate the MOP in the event of noncompliance. The supervision contracts will be similar and cost overruns for delays by contractors in completing the activities will not be recognized. **Approval of the terms of reference, the works supervision contracts, and the model contract is a condition precedent to the first disbursement.**

I. Commitments and disbursements

- 3.31 To facilitate the flow of funds to pay for program works, the MOP will present requests for funds directly to COPEFEN, which will use the procedures and technical, legal and accounting methods established for the transfer of resources under the original emergency program (loan 1057/OC-EC). Funds from the Bank loan will be disbursed to COPEFEN following existing rules and policies.
- 3.32 The Bank's funds will be fully disbursed within 20 months after the loan contract is signed. For activities in the "during the emergency" stage, the commitment term for the loan proceeds will be two months (see paragraphs 3.12, 3.16 and 3.30). For the other components, which consist of the preparation of preinvestment and specific studies, the commitment term will be four months (see paragraphs 3.15 and 3.16).

1. Cost recognition

- 3.33 Eligible costs incurred after September 1, 1998, of up to US\$10 million equivalent will be recognized, provided they comply with requisites that are substantially similar to Bank procedures.

2. Revolving fund

- 3.34 It is recommended that a revolving fund of up to the equivalent of 20% of the loan amount be established, in accordance with the Bank's policies.

J. Follow-up and reports

- 3.35 The Bank's Country Office in Ecuador will be responsible for supervising and monitoring the program, in close cooperation with the project team.

- 3.36 The Bank will hold follow-up meetings, the first of which will take place within 15 days after the loan contract is signed, or at another time agreeable to the parties. The follow-up meetings will be held quarterly. The MOP's updated designs, the process of contracting the works and supervision of construction works, and the program timetable will be reviewed at that meeting, which will also establish the dates for future follow-up meetings.
- 3.37 The borrower, through COPEFEN, will submit the following documents to the Bank:
- a. Monthly progress reports during the program, prepared on the basis of standards agreed upon with the Bank. These reports which cover technical, operating, environmental and financial aspects and will include audits as indicated below.
 - b. Any other reports that the Bank could reasonably request on the investments, commitments, and the pace of the program.
 - c. A report on the status of the program six months after the date on which the loan was approved.
 - d. A special report two months after 80% of the investment component has been concluded.

K. Final evaluation

- 3.38 The Bank will perform a final evaluation report within six months after disbursement in full of the loan. The report will contain a summary of the program and conclusions on execution, the problems encountered and lessons learned as compared with the original objectives.

IV. PROGRAM FEASIBILITY

A. Technical feasibility

- 4.1 The short-term rehabilitation works consisting of patching, resurfacing and repair and/or replacement of minor works are simple activities and are based on adequate specifications and quality control procedures (engineering and environmental). Therefore no technical problems are anticipated that could affect timely execution. Furthermore, since simple paving works are involved, such as surface asphalt treatment in most of the works (80%), with just 20% requiring the laying of asphalt concrete pavement, small and medium-sized construction companies will have more opportunity for participating in the works. This execution plan will make for greater competitiveness and ensure that sufficient construction capacity is available.

B. Institutional feasibility

- 4.2 The plan for the proposed program is substantially similar to the existing emergency program, with fewer financial agencies (excluding the IBRD and CAF) and a single coexecuting agency. COPEFEN, the executing agency for the proposed program, has quickly gained experience in the emergency program under way and the coexecuting agency (MOP) has a new administration which has agreed on the list of projects and on execution and supervisory procedures that are within its capacities, which will prevent the institutional problems that have arisen in other programs financed by the Bank. The execution plan is completely viable and COPEFEN and the MOP have the administrative and procedural capacity to carry it out. CORPECUADOR's activities will be limited to participating in the selection of firms to supervise the works.
- 4.3 Since the greatest difficulties encountered during the emergency program arose from the MOP's use of standard contracting procedures to contract road works, which are based on unit prices that do not offer the parties incentives for completion by the established deadlines, and from the lack of adequate supervision of contractors, COPEFEN will be responsible, as executing agency, for ensuring that the short-term rehabilitation projects in the "during the emergency" stage comply with the requirements. A model contract has been agreed upon with the Bank to surmount these shortcomings. For program monitoring, the contracts with the technical and environmental auditing firms engaged under the original emergency program (loan 1057/OC-EC) have been extended.

C. Economic feasibility

- 4.4 The program is economically feasible. Although no benefit-cost analysis has been performed for the projects, a cost-efficiency

analysis was conducted to define the types of works that will make the roads along and to and from the coast passable, substantially reducing transportation costs and times and the production losses that would continue to accrue if the program were not carried out. Short-term rehabilitation of the roads will prevent or reduce further deterioration that would occur next winter if they were not rehabilitated, which would lead to substantial increases in the cost of a future reconstruction program.

D. Environmental feasibility

- 4.5 CESI reviewed this program on September 25, 1998. The program and each of the rehabilitation works contain measures to ensure that they are environmentally sound in terms of specifications, quality control procedures and the management of environmental liabilities (trash, dump sites). Moreover, COPEFEN and the MOP (through its Environmental Impact Department) have included environmental protection measures in their procedures. The program includes supervision of the environmental impact mitigation measures, which will be administered by COPEFEN and the MOP, and a component for the preparation of final designs for permanent road reconstruction works, with specific terms of reference.

E. Benefits

- 4.6 The program will help to alleviate serious problems with travel on highways on the Ecuadorian coast affected by the torrential rains caused by the 1997-1998 El Niño. In the short term, the main coastal highways linking the country's production centers will be rehabilitated, facilitating and reducing the cost of freight and passenger transport year round. Safety will be enhanced, particularly on roads carrying the highest volumes of traffic. The project will help to improve the living conditions of the affected population and contribute to the economic recovery of Ecuador's coastal region.

F. Risks

- 4.7 The following potential risks have been identified:

1. Quality of the works and contracting time

- 4.8 The works for this program must be contracted and executed rapidly, which could entail the risk of jeopardizing the quality and standards of the projects. To minimize this risk, a list of eligible projects has been established in conjunction with the MOP and prioritized on the basis of the guidelines for the emergency stage, terms of reference for designs, and quality and environmental control procedures for qualified consultants and contractors. Restrictions have also been established on breaking up contracts for works (under US\$500,000), through the use of limited bidding as in the earlier operation. Most of the works

(80%) involved bituminous surface treatment which does not require sophisticated asphalt plants and will provide more opportunities for using local manpower. This will improve competitiveness and open up the construction market.

2. Counterpart

- 4.9 Given Ecuador's economic and financial situation (drop in oil prices, banana exports, etc.) there is the risk that the counterpart will not be made available in a timely fashion. However, the government has informed the Bank that it has already identified the counterpart resources and will give priority to allocating them to this program.

3. Environmental risk

- 4.10 Although the works are simple, there is always the risk of pollution from improper use of construction materials, inadequate management of work sites or the use of rights-of-way as dumps for trash and other waste. To alleviate these risks, the contracts for supervision of the works will demand strict compliance with the rules and procedures for environmental impact control established by the MOP.

**LOGICAL FRAMEWORK
SUPPLEMENTARY EL NIÑO EMERGENCY PROGRAM
(COASTAL HIGHWAY SYSTEM)
(EC-0187)**

	OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	To mitigate the damage to the coastal highway network caused by El Niño improved conditions for the transport of goods and services in the region.	The condition of the roads in the short-term rehabilitation program has improved from "poor" to "average" and/or "good".	Bank follow-up with special missions to evaluate the condition of the network and the program studies and designs. Technical and operational and environmental audits of the program.	The organizations involved (COPEFEN, MOP, CORPE work in a coordinated and manner.
	To support the borrower in financing short-term rehabilitation works on the Ecuadoran coast (3 to 5 years). To design suitable road reconstruction projects for the medium and long term (10 to 25 years).	Short-term rehabilitation of 1,000 km of highway (30 projects) along the coast. Production of final designs for reconstruction of the coastal highway network and plans for coping with emergencies and for road management.	Standard Bank follow-up mechanisms through the Country Office in Ecuador.	All the players involved, in construction contractors and supervision firms, carry out program activities in a coordinated and efficient manner.
	Short-term rehabilitation of 1,000 km of coastal road (30 projects) through patching, resurfacing and laying of a bituminous wearing course, permitting participation by larger numbers of contractors (greater competition). Preparation of final designs and bidding documents for works to reconstruct the coastal highway network, based on agreed terms of reference, including general and specific specifications.	Completion of the works (1,000 km in 30 projects): - 20% by February 1999 - 40% by May 1999 - 100% by December 1999 Suitable maintenance by contractors for two years. Satisfactory evaluation of the studies and final designs of road reconstruction projects.	Reports by the firms supervising construction, technical and environmental audit reports, and quarterly reports by the project team.	The contractors and construction supervisors have the financial and technical capacity to perform the work. The technical capacity of the supervision firms is adequate to the required level.

	OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
	<p><u>"During the emergency" stage:</u></p> <ol style="list-style-type: none"> 1. Short-term rehabilitation involving 30 projects 2. Review of designs and supervision of the 30 rehabilitation projects 3. Contracting of the technical and environmental auditing services <p><u>"After the emergency" stage</u></p> <ol style="list-style-type: none"> 1. Preparation of studies and final designs for roads and bridges (preinvestment) for the reconstruction of the road network (10 to 25 years) 2. Preparation of special studies (institutional and technical) 	<p><u>"During the emergency" stage:</u></p> <ol style="list-style-type: none"> 1. Investment of US\$45 million 2. Investment of US\$3.5 million 3. Investment of US\$200,000 <p><u>"After the emergency" stage:</u></p> <ol style="list-style-type: none"> 1. Investment of US\$4.5 million 2. Investment of US\$1 million 	<p>Evaluation of MOP bidding documents for consultants by the project team.</p> <p>Items to be reviewed: sources of materials and dump sites, road safety, environmental liabilities, quality of the bituminous treatment (80%) and the asphalt paving (20%).</p> <p>Documents (plans and specifications) prepared in accordance with the terms of reference and modern engineering practices that are acceptable for the situation in the area.</p>	<p>The construction contractor has the necessary financial capacity to carry out the works efficiently.</p> <p>The local and/or international consultants or consulting firm has the professional staff of the MOP and the technical capacity to complete the scheduled activities on time.</p>

SUPPLEMENTARY EL NIÑO EMERGENCY PROGRAM (COASTAL HIGHWAY SYSTEM)

(EC-0187)

PROCUREMENT PLAN			
ACTIVITIES	PERIOD		
Emergency-related components	Commencement	Completion	Duration (months)
1. Consultants for the review of rehabilitation works designs	October 1998	December 1998	Two (2)
2. Consultants for supervision of rehabilitation works	December 1998	March 1999	Three (3)
3. Construction works (contractors)	December 1998	April 1999	Four (4)
4. Audits	December 1998	April 1999	Four (4)
Other components			
5. Preinvestment (studies and designs)	January 1999	July 1999	Six (6)
6. Special studies	January 1999	July 1999	Six (6)

PROPOSED RESOLUTION

ECUADOR. LOAN ____/OC-EC TO THE REPUBLIC OF ECUADOR
Complementary Program to Confront the "El Niño" Phenomenon
(Coastal Road Network)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Ecuador, as Borrower, for the purpose of granting it a financing to cooperate in the financing of the Complementary Program to Confront the "El Niño" Phenomenon (Coastal Road Network). Such financing will be for the amount of up to forty-eight million United States of America Dollars (US\$48,000,000) from the Single Currency Facility of the Ordinary Capital resources from the Bank, and will be subject to the "Terms and Financial Conditions" and "Special Contractual Conditions" of the Executive Summary of the Loan Proposal.

PROPOSED RESOLUTION

ECUADOR. PARTIAL PAYMENT OF INTEREST ON LOAN ____/OC-EC TO
THE REPUBLIC OF ECUADOR

Complementary Program to Confront the "El Niño" Phenomenon
(Coastal Road Network)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, as administrator of the Intermediate Financing Facility Account, hereinafter referred to as the "account", to enter into such contract or contracts as may be necessary with the República of Ecuador, as Borrower, and to adopt other pertinent measures to use the resources of the account to pay a part of the interest due by the Borrower on outstanding balances of the loan authorized by Resolution DE-____/98, in accordance with the provisions set forth in Document FN-263-2, as amended, approved by the Board of Executive Directors on December 21, 1983.