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EL SALVADOR: THE NATURAL DISASTERS OF 1982 AND THEIR EFFECTS ON ECONOMIC AND SOCIAL DEVELOPMENT

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INTRODUCTION

From 16 to 20 September 1982, El Salvador was affected by persistent rains which were concentrated in the central, southwestern and coastal areas and caused numerous deaths and considerable damage to agriculture, housing and transport infrastructure. An estimate of damages and their impact over the medium-term are presented in this report, which also includes a list of measures that must be undertaken and that should be considered by agencies providing international asistance urgently required by El Salvador under its present circumstances.

This disaster augmented the distress caused by the drought that also occurred in 1982 and that cast even more gloom over the already negative economic forecasts made at the beginning of the year. The two natural phenomena intensified the economic and social disruption suffered by the nation as a result of more than three years of internal armed conflict. The per capita income, which in 1981 had declined by 25 per cent in comparison with 1978, will probably be reduced by one third by the end of 1982. This acute crisis has caused a set back of more than 15 years in the average levels of well-being of the population, and has had devastating effects on future growth potential owing to the prolonged paralyzation of investment, the destruction of stocks and the unprecedented unemployment that affects more than one quarter of the labour force.

The excessive and persistent rainfall which occurred in mid-September caused floods and landslides and felled many trees. It also caused the death of 600 people and the destruction or damage of 3 500 dwellings, especially those built on the shores of rivers and creeks and in Colonia Montebello, a suburban area located in the outskirts of San Salvador. Agricultural production, soils and transportation infrastructure were also severely affected.

The damages, which were limited to a relatively small geographic area, are estimated at some 126 million dollars; or, approximately three per cent of the gross domestic product for 1981. A full

/recovery

recovery of the losses will be possible in most instances, except in the case of the agricultural soils that were washed away. In this context, the 1 500 hectares that were damaged - mainly in the Department of Ahuachapán - are of substantial importance in view of the country's high population density, which demands that all farmland be utilized to the fullest possible extent.

The rate of growth of the gross domestic product which, according to the most reliable mid-year estimates, was to decrease by 2.7 per cent, will now be reduced still further to 4.5 per cent as a result of the damages referred to above, particularly in the agricultural sector, whose decline will exceed 7 per cent, as compared with the 1.5 per cent forecasted prior to the drought and the rains. The decline in agricultural output will be somewhat greater than the one expected for the manufacturing sector, particularly because of the temporary intensification of problems related to the supply of imported inputs and of an appreciable reduction in the generation of electricity - not all atributable to the natural disasters - combined with a decrease in transportation activity because of damaged roads, a reduction in home ownership and in the provision of services as a whole. These declines will not be offset by an incresed activity in the construction industry during the remainder of this year in order to complete and repair buildings already under construction nor by the operating expenses which the Government has earmarked to meet the demands of the emergency, which will probably continue at least until the end of next year.

The disasters described in this report are therefore superimposed on a state of economic postration never before experienced by the country, at least not during the postwar period, and consequently their effects, which to a certain degree are rather moderate in comparison with other natural phenomena experienced in the region not too long ago, have had a serious impact on the country because of its precarious economic position.

/The present

The present report, prepared at the request of the Government of El Salvador, analyses some of the repercussions of the disasters on the country's economic and social development and outlines priority areas requiring immediate attention. In order to prepare it, CEPAL sent a fact-finding mission to El Salvador that was supported by the collaboration of the United Nations Development Programme (UNDP) and several governmental entities, especially the Ministry of Planning, the National Emergency Committee headed by the Ministry of the Interior, the Ministry of Agriculture and the Ministry of Public Works. The mission learned of the immediate effects of the natural disaster as described in detail in the document titled Informe de daños ocasionados por el temporal de los días 16 al 20 de septiembre de 1982 y requerimientos para acciones de emergencia (Report on the Damages Caused by the Rains of 16 to 20 September 1982 and Requirements for Emergency Action) prepared by the Ministry of the Interior. The speed with which the problems caused by the disasters are being faced was corroborated by the mission. The mission also noted the determination of the Salvadorean people to continue working and, in the case of the disaster victims, to do their utmost to become self-sufficient once again as soon as possible.

I. THE NATURAL DISASTERS OF 1982

1. Description of the Damages

In 1982, El Salvador suffered three natural disasters of differing magnitude, cause and effect that had varying impacts on the country's diverse social and economic sectors, already adversely affected by the armed conflict that has been taking place in recent years. Two of these natural phenomena also caused disasters in other neighbouring countries.[1/*]

On 19 June, a strong earthquake, which registered 5.6 degrees on the Richter scale, shook the central-western part of the country, causing damage or destruction to many rural and urban dwellings and buildings. Fortunately, no deaths occurred, although some people were slightly wounded.

The rainy season usually begins in May, reaches its first peak in June, then diminishes in July and August, increases to its maximum in September and ends in October. In the period July/August there usually occurs a dry spell which lasts between 10 and 20 days, and during which there is not enough rainfall to satisfy crop water requirements. Plants must therefore resort to water stored in the soil's root zone in order to survive.[2/]

In 1982 the dry spell of the rainy season - the so-called canícula - in El Salvador was very severe, specially in the eastern part of the country, since it began in early July and ended until about September 10,[3/] thus making it the worst event of this type in recent decades and surpassing those of 1972 and 1976. Soil water storage was not sufficient to meet crop demands, especially for corn, rice and cotton. Some crops were lost entirely or their yeld were drastically reduced as will be described later on.

During the second half of September - immediately after the canícula had concluded - a tropical depression was formed at a location of

* Please see notes on page 53

/250 kilometres

250 kilometres southwest of San Salvador that was to affect both Salvadorean and Guatemalan territory. Such tropical depressions are frequent during the month of September and follow a path parallel to the Pacific coast. They sometimes increase in force and become tropical storms or cyclones when they reach median latitudes.

In this case, however, the depression began its displacement towards the northwest, but on September 18 changed course and moved inland on the El Salvador-Guatemala border. It followed a path along the Guatemalan highlands and then moved out to sea over the western extreme of Guatemala and the southeastern part of Mexico. Even if the depression had not moved inland it would have produced heavy rains - known as temporales - which can at times last up to five days. In this case, the rains began on 17 September, and continued through 20 September; the main portion fell on 18 and 19 September and was concentrated within a period of 18 hours on those days. In the San Salvador area rainfall reached nearly 400 millimetres, and in the western part of the country exceeded 500 millimetres, which represent more than 20 per cent of the average annual rainfall. Winds of up to 90 kilometres per hour felled many trees and uprooted bushes in the higher areas; they also produced waves four to five metres high in the western seashore of the country.

The geologically young soils of the upland areas had been loosened by the June earthquake, and were subsequently subjected to shallow faulting due to the canícula. The rapid saturation of those soils and the strong winds of the temporal, caused heavy runoff, eroded many land tracks and swept away rocks and trees. Extraordinary floods - that of the Paz River, on the border with Guatemala, for example, exceeded by far the one induced by hurricane Fifi in 1974 which was the highest previously recorded - and mud flows occurred in rivers and streams. In the upland areas valuable soils for the production of coffee were destroyed. After the rivers reduced their flow slope upon reaching the coastal plain, the floods topped the banks and the water-mud-rock-trees flow innundated the adjacent low-lying lands, which became heavily silted and unfit for production.

/The Paz

The Paz River, located in the western portion of the country, altered its course and overflowed into both Guatemalan and Salvadorean territory; other smaller rivers located between the Grande de Sonsonate and the Paz rivers also overflowed their banks. Several hundred dwellings and a considerable extent of farmland located near the rivers were completely destroyed and sedimented, respectively. Many human lives and livestock were lost and extensive areas of land suitable for intensive farming became unusable. In the upland areas of the river basins, wherein land with 60-degree slopes are usually devoted to coffee growing, there occurred large landslides. In several hundreds of hectares coffee trees were lost together with the soil on which they were planted. On the other hand, the high waves referred to above coincided with a low tide, thereby preventing possible damage to the Port of Acajutla and the surrounding coastal area, although they obstructed the free flow of the rivers, they aggravated the flooding of the coastal lowlands.

The case of the city of San Salvador requires special attention. Located among the foothills of several volcanoes and relatively steep mountains, the city's growth in recent years has been made at the expense of clearing areas previously devoted to coffee production, while the forests located in the uplands were rapidly and indiscriminately cut down. The ecological system was therefore modified. There occurred a significant reduction in the retention and in filtration capacity of the soils for replenishing the already over-exploited groundwater reservoir which provides the city's drinking water supply. The upland areas received the full impact of the winds and the intense and persistent rains. The soils, further loosened by fallen trees, were swept away by the rain towards the natural drainage channels. Mud floods occurred and laid bare several hundreds of hectares of land. The mud flowed into recently urbanized areas of the city - which did not have an adequate drainage capacity for such an event - with such violence and swiftness that it swept away and buried hundreds of dwellings killing hundreds of Salvadoreans. Such was the case of Colonia Montebello, a district located in north-western San Salvador, wherein it has been impossible to recover

/all the

all the bodies of the victims and to accurately determine the extent of the damages. Furthermore, conditions in the same drainage sub-basin as well as in others located around the capital city, are such that there exists the threat of more mud flows similar to that which occurred in Montebello, thus threatening not only shun areas but residential middle-class districts as well.

It is therefore essential and urgent to remove the dwellings located in dangerous areas and to initiate reforestation, soil conservation and river control works in the upland areas, in order to avoid the results of possible new floods in the immediate future.

2. Emergency Measures Adopted

Governmental and non-governmental institutions began to attend to the needs of the storm victims immediately after the disaster. On 20 September the Government declared a national state of emergency and appointed a National Emergency Committee, headed by the Minister of the Interior, to administer to and provide temporary shelters for the affected population. Many wounded persons were treated by the Red Cross and in hospitals, while the homeless were transferred to relatives' homes or lodged in provisional shelters set up in schools, churches and other community centres, CONADES, an organization that had been established to provide assistance to persons displaced by the armed conflict, was entrusted with the task of attending these victims.

A preliminary assessment of the damage caused by the storm was prepared by the Emergency Committee and submitted to the international community with a request for aid to meet the most urgent needs.[4/] Only very general figures could be provided due to the short time available for preparing this assessment; therefore, the report provides only an order of magnitude estimated of the extent of the damages in each sector. In response to such appeal for international solidarity and to that made by the Office of the United Nations Disaster Relief Co-ordinator (UNDRO), certain countries and international organizations initiated a flow of aid

/from abroad.

from abroad. The Comittee, in collaboration with CONADES, was able to begin relocating several tens of thousands of victims and to provide them with food and medical care. Other governmental organizations initiated the repair - at least temporarily and partially - of drinking water and electric power supplies as well as the damaged road network. In rural areas the peasants undertook the search and recovery of the livestock they had lost, the harvesting and drying of the salvageable part of their corn crops, and the repair or reconstruction of their homes, fences, etc. to the best of their abilities. A national collection campaign to provide assistance in cash and in kind is also being carried out to aid the victims.

Despite the efforts undertaken so far, there are still matters which require assistance from the international community during the emergency stage. In the first place, assistance to prevent epidemics due to the unavoidable overcrowding in temporary shelters. In the second, the shipment of basic foodstuffs to replace those destroyed by the drought and the storm. Finally, the provision of urgently needed materials for the construction of housing for the victims and of earth-moving equipment required to remove rubble, restore the courses of rivers, etc.

/II. ESTIMATES

II. ESTIMATES OF THE DAMAGES

The results of the preliminary assessment of the damages described in the preceding chapter are presented heretofore. The estimates are based on information furnished by officials of the Government of El Salvador and on evaluations and estimate made by CEPAL in the affected areas.

It should be emphasized at this point that the estimates should be considered provisional, inasmuch as they are based on only partial information.

Estimates were made on the basis of the value of the number of units lost or damaged and on average replacement costs. Special methodologies were used to estimated certain types of losses, particularly with respect to the erosion and sedimentation of agricultural lands.

The estimates include indirect losses, which refer to both the income not received due to the paralyzation of or delay in the activities of certain economic sectors, and to the additional expenses required to provide certain services.

1. Effects on the Population and Social Conditions

It is estimated that approximately 600 lives were lost due to the storm and its aftermath, and that 20 000 victims required lodging in temporary shelters. Numerous families were broken up and many lost their main income provider. Relocation in temporary shelters has also brought about an increase in transportation costs to work centres. A considerable reduction in family income has been added to the human and material losses suffered.

The great number of victims is no doubt attributable to the fact that many of the dwellings swept away were located in areas close to streams and rivers in urban zones, and near the coast and waterways on the coastal plain in rural areas, sites which are already in disaster prove areas during the rainy season and at high tide. Another contributing factor was the mud flow that killed some 350 people and swept away hundreds of dwellings in Colonia Montebello located in the

/north-western

north-western part of the capital city. In spite of the warnings provided by the Meteorological Service whenever there are storms approaching, the country does not have an early warning system and organization required for the timely evacuation of people.

2. Damages in the social sectors

Of all, the social sectors housing suffered the most damages.

a) Health

Health services in El Salvador, particularly preventive medicine, were already quite precarious even before the natural disasters occurred. The floods, the formation of extensive pools, the still undetected existence of decomposing bodies and the overcrowding in temporary shelters have all aggravated this situation.

The July earthquake caused damages to 10 health centres located in the central and south-western parts of the country. Although the storm did not affect the country's health infrastructure, with the exception of the steam and hot water system in the Ahuachapán hospital, there exists the possibility that certain diseases may proliferate. Cases of malaria and dengue fever, for example, will certainly increase notably in the months to come because of conditions favourable to proliferation of the vector transmitting these diseases. Some cases of rabies have already been detected and an epidemic might break out if animals that transmit this disease come into contact with the bodies of victims that have not been located or buried. Overcrowding and contaminated water in rural areas may bring about measles and diarrhoea epidemics, especially among children. Furthermore, sufficient supplies of anti-rabies vaccine, anti-malaria medicines and insecticides are not available, and consequently emergency supplies for oral rehydration of infants and anti-rabies vaccines from abroad are required. In some areas of the capital a campaign has been undertaken to exterminate stray dogs.

/The cost

The cost of repairing damages to health infrastructure is estimated at 465 000 U.S. Dollars, whereas the cost of necessary vaccines and medicines will be close to 2 million U.S. Dollars. Inasmuch as the treatment of those wounded by the storm and the earthquake was attended to using the normal operating budgets of the country's health institutions, these expenses have not been included in the list of damages. (See Table 1.)

b) Housing

Housing was one of the sectors most affected by the storm and the earthquake, as mentioned previously; however, it has not been possible to accurately assess the damages. Consequently, CEPAL has made estimates based on on-the-spot assessments and on figures furnished by the Salvadorean authorities. In accordance with these figures, some 100 middle-class and some 700 slum dwellings were totally destroyed in urban areas, and more than 1 000 in rural areas. In addition, over 300 middle-class dwellings and some 1 500 slum dwellings were damaged by the storm and the earthquake. Therefore, in urban areas a total of some 1 800 dwellings were completely destroyed and an equal number were partially damaged in both urban and rural areas. Direct replacement and repair costs to ensure acceptable safety standards, including replacement of household effects, have been estimated at approximately 6.7 million U.S.Dollars. (See Table 1.)

Because of the possibility of the occurrence of new floods and mud flows, especially in the urban areas near rivers and streams and the Montebello district, some 500 middle-class dwellings and approximately 3 000 slum dwellings - some of which are already in poor repair - must be evacuated and replaced by new dwellings located in safe places, thereby providing decent housing to the inhabitants of city slums. This indirect cost has been estimated at 10.4 million U.S. Dollars, after deducting the costs of damages in partially affected dwellings that should be replaced rather than repaired. (See Table 1.)

/Table 1

Table 1

EL SALVADOR: DAMAGES IN THE SOCIAL SECTORS

(Thousands of dollars)

Sector	Costs			Imported components
	Total	Direct	Indirect	
Total social sectors	21 100	8 200	12 500	5 695
Health sector	2 415	65	1 950	2 115
Health campaigns	1 950	-	1 950	1 950
Repair of damages in health centres	465	65	-	165
Housing sector	17 085	6 735	10 350	3 300
Dwellings destroyed (1 500)	4 220	4 220	-	845
Dwellings damaged (1 800)	1 875	1 875	-	375
Household effects	640	640	-	10
Dwellings that should be evacuated (3 500) a/	10 350	-	10 350	2 070
Education sector	1 600	1 400	200	280
Repairs to educational centres	1 600	1 400	200	280

Source: CEPAL estimates made on the basis of information provided by the Ministry of Public Works, the Ministry of Planning and the Pan-American Health Organization (PAHO/WHO).

a/ Includes some of the damaged dwellings; however, the amount of damages has been deducted from the total to avoid double accounting.

/The total

The total housing sector losses, caused by both the September storm and the June earthquake, amount to an estimated figure of 17 million U.S. Dollars.

The Housing Department of the Ministry of Public Works, in close collaboration with the Social Fund for Housing, has made plans for a minimum-housing programme in urban areas to be implemented in the immediate future for 10 000 low-income families, at a cost of approximately 26 million U.S. Dollars. This will make it possible not only to satisfy the demand directly and indirectly atributable to the disasters but also to contribute to eradicate marginalization in urban areas, especially in San Salvador.

c) Education

Several dozen school centres were affected by the June earthquake, whereas only a few indirect damages resulted after the storm due to the overcrowding of the refugees they sheltered. Repair of these damages is estimated at 1.6 million U.S.Dollars. (See Table 1.)

3. Damages to Infrastructure

Damages to infrastructure were mainly due to the September storm.

a) Highway Transport

Rains caused erosion and landslides on highways. River overflows eroded the surface of some highways and roads. No significant damage to bridges or culverts occurred, as opposed to the case of Guatemala.

Damages occurred mainly on the highways and secondary roads located in the western part of the country. Internal traffic was rapidly restored as a result of the determined efforts of the maintenance squads of the Ministry of Public Works. International traffic with Guatemala on the highways connecting San Salvador with La Hachadura (CA-2) and El Jobo (CA-8) was totally interrupted because of the damage or destruction of several bridges in Guatemalan territory. All international traffic with Guatemala

/was consequently

was consequently channeled onto the San Salvador-Santa Ana-San Cristôbal highway (CA-1).

The cost of repairing direct damage to highways is estimated at a total of 12.5 million U.S. Dollars. Of this, 3.5 million would be allocated for repairing asphalt surfacing, road shoulders and other items on paved highways. The remaining 9 million are earmarked for cleaning and rehabiliting the secondary roads network. It is estimated that about 2.8 million of the total would be required for importing materials which are not manufactured in the country.

It is estimated that use of a longer alternate route for international traffic to Guatemala, will, for at least six months until bridges in the neighbouring country are repaired, result in indirect transportation costs of some 125 000 U.S. Dollars.[5/] Total costs for this sector would consequently amount to 12.6 million U.S. Dollars. (See Table 2.)

b) Railway Transport

Damages to railway infraestructure were caused by the rains and refer exclusively to the burial of tracks by rubble and earth, to landslides and to the destruction or deterioration of a large number of railway sleepers on the lines that run from Acajutla to San Salvador and from the Guatemalan border to San Salvador, in the western portion of the country closest to Guatemala.

Traffic was interrupted for about one week while provisional repairs were made. This occasioned losses in revenue. In addition, definitive repairs will require the acquisition of earth moving equipment.

The Autonomous Executive Port Commission (CEPA), which also administers the railways system, has estimated that repairs of direct damages caused by the storm will amount to 345 000 U.S. Dollars. The loss of revenue while provisional repairs were made will probably amount to 80 000 U.S. Dollars. Four hundred thousand dollars more would be required to import earth moving equipment.

/Table 2

Table 2

EL SALVADOR: DAMAGES TO INFRASTRUCTURE

(Thousands of dollars)

Sector/subsector	Damages			Imported components
	Total	Direct	Indirect	
Total infrastructure	20 341	15 508	4 833	7 947
Highway transport	12 625	12 500	125	2 750
Asphalt highways	3 625	3 500	125	1 850
Secondary roads	9 000	9 000	-	900
Railway transport	825	345	480	540
Repairs to tracks	425	345	80	140
Earth-moving equipment	400	-	400	400
Ports and airports	1 240	1 120	120	860
Electricity sector	3 176	426	2 750	2 402
Damage to Ahuachapán power plant	2 685	185	2 500	2 290
Distribution systems	491	241	250	112
Water supply and sewerage systems	445	397	48	235
Telecommunications	1 280	570	710	560
Urban and interurban telephone service	700	570	130	230
Relocation of towers and antennas	580	-	580	330
Other subsectors	750	150	600	600

Source: CEPAL estimates based on information provided by the Ministry of Public Works, the Autonomous Executive Port Commission, the Lempa River Hydroelectric Executive Commission, the National Water Supply and Sewerage System Administration, the National Telecommunications Administration, and other public and private organizations.

/Total damages

Total damages in this sector, therefore, including both direct and indirect costs, are estimated at 835 000 U.S. Dollars, of which 540 000 would be allocated for equipment and materials manufactured abroad. (See Table 2.)

c) Ports and Airports

The jetty in the port of Acajutla was subjected to considerable damages that consisted of the breaking of those parts of the pier most exposed to the force of the waves, the partial loss of warehouse and other installations roofs, the flooding of the control panels and the cathode protection equipment employed to prevent corrosion of the metal portions of the dock, the sinking of mobile loading equipment and the partial sedimentation of the mooring area.

Because of the time of year in which the disaster occurred, the warehouses located on the dock were not being used. Thus, docking, loading and unloading operations were not affected and will consequently not produce any loss of income.[6/]

The cost of repairing damages to infrastructure and replacing mechanical and electrical equipment has been estimated by the Autonomous Executive Port Commission (CEPA) at 1.12 million U.S. Dollars. An additional indirect cost of 120 000 U.S. Dollars is estimated for re-equipping and modernizing the main meteorological station in Acajutla. The total cost would therefore amount to 1.2 million U.S. Dollars, of which 860 000 would be required for imported equipment and materials. (See Table 2.)

Damages to the port were covered by insurance. No damages took place in the country's airports, also administered by the CEPA.

d) Electricity Service

None of the electrical power plants nor any of the transmission lines of the River Lempa Executive Hydroelectric Commission were affected by the storm, and the Cerrón Grande and Güija plant dams fully performed

/their

their flood control functions for the first time. Had this not been the case, the Lower Lempa plains would have been subjected to considerable flooding.

The principal damages were confined to the breaking of the channel that discharges waste waters from the Ahuachapán geothermoelectric power plant to the Pacific Ocean. The plant's waste be diverted towards the Paz River on the Guatemalan border instead. The distribution system for rural electrification and for certain cities, such as Santa Ana, Sonsonate, Ahuachapán and San Salvador, were considerably damaged which fact caused the interruption of this service for a relatively brief period of time.

Repairs to the channel will require a four months' time period and an investment of approximately 185 000 U.S. Dollars. Since provisional repairs to the distribution lines in the affected rural and urban areas will cost some 241 000 U.S. Dollars, the total direct cost for the sector will amount to 426 000 U.S. Dollars.

Indirect losses or damages caused by a reduction in revenues in the affected systems will amount to approximately 250 000 U.S. Dollars until the damaged lines are fully repaired. Furthermore, in order to avoid affecting fishing in the delta of the Paz River - the use of which is regulated by an international treaty signed by Guatemala and El Salvador - due to the discharge of waters with a high content of boron, arsenic and other materials from the Ahuachapán power plant, it may be necessary to stop one of the three 30-MW capacity units for a period of three months. This would allow for an acceptable degree of dilution of the salts in the river. The energy not produced at Ahuachapán could easily be replaced with hydroelectric power supplied by the Cerrón Grande plant; however, since the capacity of the transmission line from the plant to San Salvador is insufficient, a steam power plant would have to be put into operation. This would have an additional indirect cost of about 2.5 million U.S. Dollars.

The total damages in this sector would thus amount to 3.2 million U.S. Dollars, of which 2.4 million would refer to imports, especially fuel for power generation. (See Table 2.)

/e) Water

e) Water Supply and Sewerage Systems

Runoff caused by the storm seriously affected electrical and pumping equipment in the water supply system of 20 rural communities and in civil engineering works of urban systems operated by the National Water Supply and Sewerage System Administration (ANDA).

It is estimated that 45 000 people in rural areas were deprived of normal drinking water service and are probably consuming polluted water. The repair or replacement of equipment may require at least four months' time. Service was not interrupted in urban systems and the repair of damaged civil engineering works is being carried out rapidly.

Direct damages to this sector are estimated at 379 000 U.S. Dollars. Indirect damages - referring to uncollected revenue due to the interruption of the services - at 48 000 U.S. Dollars. This means a total loss of 445 000 U.S. Dollars, of which 235 000 would be required for the purchase of equipment abroad. (See Table 2.)

f) Telecommunication Services

Aerial urban and interurban transmission lines were affected by the winds, and telephone conduits and other underground works in 14 cities were affected by flooding. Some 9 000 private telephone lines were without service for about 15 days. The access road to the land station located at El Picacho near San Salvador was also cut off in several locations.

In addition to direct damages, the disasters caused indirect effects, especially in the Picacho area, where, aside from the land station of the National Telecommunications Administration (ANTEL), there are also antennas and relay stations which belong to CEL and private television companies. Erosion of the hillsides - which was the cause of the mud flows at Montebello - has come so close to these installations that it may be necessary to shift them to safer places before new rains destroy them.

/The direct

The direct costs of repairing and replacing urban and interurban lines and the access road to the El Picacho relay station are estimated at 570 000 U.S. Dollars, whereas the revenue lost by ANTEL due to the interruption of the service amounts to some 130 000 U.S. Dollars. The indirect cost of shifting the relay antennas to a safer place would amount to 580 000 U.S. Dollars more.

Repair of both direct and indirect damages to these services would consequently amount to 1.3 million U.S. Dollars, of which 560 000 would be required to import equipment and materials. (See Table 2.)

g) Other Sectors Affected

The country's stream gaging and meteorological station networks, whose density was one of the most appropriate for the requirements of the Latin American region, was also damaged. Four stream gaging stations were completely swept away by the floods and others were obstructed with silt. Several meteorological stations were also damaged by wind, rain and runoff. Their repair or replacement will require 150 000 U.S. Dollars.

4. Damages to Agriculture

a) Losses in Agricultural Production

Agricultural production prospects for the 1982/1983 crop were already discouraging at the beginning of this year. It was estimated that overall production of the seven main agricultural products would suffer a decline of 3.4 per cent due to various causes. Some related to extra-economic factors with influence on the country's productive activities, and the more specific disorders related to the application of the Agrarian Reform Law, the increase in costs of inputs used in agricultural production, and the low prices paid for export products which discourages export activities.

These already known factors were compounded by the meteorological phenomena of 1982, especially the prolonged dry spell during the rainy

/season.

season. In addition to the expected decline, these phenomena may result in a final decline of 13.5 per cent - when compared with the previous agricultural cycle - in the production of the seven main agricultural products. This fact, besides the direct impact on production, employment and the generation of foreign exchange, will impose a food shortage in 1983. (See Tables 3 and 4.)

El Salvador normally produces a high percentage of the grains required for domestic consumption; in some years, it has even produced surpluses for export. The sole exception being wheat which cannot be produced locally. Table 4, however, indicates that in 1983 there will occur shortages of all basic foodstuffs and that it will therefore be necessary to import corn, sorghum, wheat, vegetable oil and beans.

The shortage of foodstuffs in 1983 will imply an expenditure of 76 million dollars, only 12 million of which may be attributed to the canícula and the heavy rains in September. Of all the products, corn, a basic staple of the Salvadorean diet, will be the most critical since some 100 000 tons will have to be imported at a cost of more than 21 million U.S. Dollars. (See Table 5.)

Export products, which have been declining continously since the 1978/1979 harvest, will suffer the effect of the disasters, especially coffee and cotton. The natural disasters, particularly the canícula, affected the cotton harvest especially, which had been declining as a result of the reduction of the land area devoted to this crop. At the present time the area devoted to cotton represents one third of that cultivated in the previous two years, owing to a drop in prices, the instability derived from enforcement of the agrarian reform, and other economic and political factors.

In the case of coffee, in addition to the natural phenomena described, investment in some areas had decreased due to the drop in prices. Furthermore, to comply with the International Coffee Agreement, the country was forced to retain part of its annual quota, which lead to an accumulation of stocks in excess of 700 000 bags. In addition, the rains caused erosion in the area of Ahuachapán, destroying plantations

/Table 3

Table 3

EL SALVADOR: ESTIMATED LOSSES IN STAPLE AND EXPORT PRODUCTS DUE TO THE DISASTERS OF 1982

Product	1980/1981	1981/1982	1982/1983		
			Originally planned	Post-disaster	Losses
	Millions of 1981 dollars				
Total	518.1	499.6	482.7	431.5	51.4
Corn	106.4	101.0	97.6	81.8	15.8
Beans	30.0	28.8	27.7	24.2	3.5
Rice (Milled)	30.8	25.5	23.4	16.1	7.3
Sorghum	27.8	24.8	22.7	20.0	2.7
Coffee	205.9	202.3	188.4	177.8	10.6
Cotton	79.3	76.9	71.0	60.3	10.7
Sugar cane	37.8	40.3	52.0	51.2	0.8
	Growth rates				
	-9.9	-3.6	-3.4	-13.6	
	Percentage of losses in 1982/1983				
					11.9

Source: CEPAL estimates based on information provided by the Ministry of Agriculture and Livestock.

/Table 4

Table 4

EL SALVADOR: ESTIMATED LOSSES IN BASIC GRAINS AND EXPORT PRODUCTS, 1982/1983

(Thousands of tons)

Product	1980/1981	1981/1982	1982/1983		
			Originally planned	Post-disaster	Losses
Corn	519.0	493.0	476.3	399.2	77.1
Beans	39.3	37.7	36.3	31.7	4.6
Rice (Milled)	59.9	49.4	45.4	31.2	14.2
Sorghum	150.4	133.8	122.5	107.9	14.6
Coffee	158.7	155.8	145.1	137.0	8.1
Cotton (Lint)	115.3	111.8	103.2	87.7	15.5
Sugar cane	1 798.3	1 920.5	2 476.1	2 439.8	36.3

Source: For 1981/1982 production, CEPAL, Notas para el estudio económico de América Latina, El Salvador, 1981 (E/CEPAL/MEX/1982/L.22); for 1982 production, information provided by the Ministry of Agriculture and Livestock.

/Table 5

Table 5

EL SALVADOR: FOOD AVAILABILITY AND REQUIREMENTS, 1983

(Tons)

Product	Production planned	Production expected	Stocks a/	Avail-ability	Require-ments	Balance	Value in thousands of 1981 dollars b/ Production planned	Avail-ability	Require-ments	Balance
Total							176 361	168 354	245 335	-76 981
Corn	476 270	420 485	18 144	438 629	521 629	-83 000	97 635	89 919	106 934	-17 015
Beans	36 287	33 607	14 288	47 895	49 895	-2 000	27 687	36 544	38 070	-1 526
Rice (Milled)	45 359	34 246	7 257	41 503	63 503	-22 000	23 360	21 374	32 704	-11 330
Sorghum	122 469	87 828	-	87 828	167 828	-80 000	22 657	16 248	31 048	-14 800
Wheat	-	-	-	-	120 000	-120 000	-	-	25 080	-25 080
Vegetable oil c/	9 906	8 420	-	8 420	22 680	-14 260	5 022	4 269	11 499	-7 230

Source: CEPAL estimates based on information provided by the Ministry of Agriculture and Livestock.
a/ As of 31 September 1982.
b/ Domestic prices were used except in the case of wheat and vegetable oil which are international prices.
c/ From cottonseed and soybeans.

/in one of

in one of the country's prime coffee-growing areas. Recovery will be extremely difficult since erosion occurred on lands with slopes over 60 per cent, in which it is both difficult and expensive to construct soil conservation works. These works will necessarily have to be carried out as soon as possible in order to avoid more extensive erosion of the upland areas.

Damage to sugar cane was minimal and was confined to small areas upturned by the wind. The impact on production and the availability of sugar cane to meet the international quota assigned to the country does not seem to be of great importance. (See Table 5.)

In summary, losses in agricultural production which are directly attributable to the meteorological phenomena, as indicated in Tables 3 and 4 could reach as much as 61.4 million U.S. Dollars at 1982 prices, thereby compounding the already foreseen deficit in production. (See Table 6.)

b) Damage to Livestock

Floods brought about by the intensive rains swept away part of the livestock in the coastal areas of Sonsonate and Ahuachapán. Six hundred heads of cattle were lost, most of them in their growing stage. Although the number of heads lost is not great in comparison with the country's total livestock population, its replacement will take time, and the supply of meat for national consumption will necessarily be reduced in the near future.

c) Damage to Fisheries

Fishing was affected by the storm, not only for physical damages but for the need to shelter fishing vessels as well, which results in losses of revenue. On this occasion, fishing boats - mostly shrimp boats - did not go out to sea for eight days. This resulted in a total loss of income on the order of 350 000 U.S. Dollars and the consequent reduction in foreign exchange generated by a product earmarked mainly for export.

/Two of

Two of the country's 15 shrimp boats[7] were damaged in port; their repairs amount to 640 000 dollars. Although the boats were insured, the time they are out of commission will cause a reduction in the revenues of this sector. (See Table 6.)

d) Damage to Land, Plantations and Infrastructure

i) Irrigation Infrastructure. In the Zapotitán District, infrastructure was damaged by the heavy rainfall, the saturation of the soils and the material swept along by the water. Damages consist mainly of the silting of canals and erosion of drainage ditches. Some irrigation gates were swept away by the currents. In other cases, pumping equipment was found buried by sediment, but they may still be rehabilitated. A total of approximately 960 000 U.S. Dollars will be required to repair and rehabilitate the damage in irrigation system. (See Table 6.) Such rehabilitation is of special urgency in view of the proximity of the dry season, during which agricultural production can only be carried out under irrigation. Furthermore, these are micro-regions which generate substantial employment levels because of the high economic value of the crops they produce, such as vegetables and agro-industrial inputs.

ii) Damage in the Uplands of the San Salvador Volcano. One of the areas most affected by the storm, in view of the damage imposed, was surely the uplands located in the San Salvador volcano. The soils on the volcano's slopes - geologically young and still in formation - became oversaturated and collapsed in an avalanche of mud, rocks and tree trunks. A 100-metre wide ravine was formed as a result in an area where only a small stream had existed before.

The physical damage so far has not been excessive. It is estimated that an investment of 750 000 U.S. Dollars would suffice to undertake minimum soil conservation and reforestation works. (See Table 6.) Nevertheless, these soils - sandy loams of volcanic origin with non-cohesive lapilli - face the potential danger of new mud and stone flows, even under less severe weather conditions.[8]

/Table 6

Table 6

EL SALVADOR: DAMAGE IN THE AGRICULTURE AND LIVESTOCK SECTOR

(Thousands of dollars)

Item	Damages		Indirect effects	Imported components a/
	Total	Direct		
Total agricultural sector	87 538	74 438	13 100	
Agricultural production	73 400	61 400	12 000	
Crop losses	61 400	61 400	-	22 100
Food imports	12 000	-	12 000	12 000
Livestock	63	63		
Cattle lost (600 heads) b/	43	43	-	-
Fences destroyed	20	20	-	10
Fisheries sector	990	640	350	
Vessels damaged	640	640	-	500
Production losses	350	-	350	350
Land, plantations and infrastructure	13 085	12 335	750	
Zapotitán Irrigation District	960	960	-	100
San Salvador volcano lands	750	-	750	-
Coffee lands and plantation (500 hectares)	8 925	8 925		6 925
Eroded or lost coastal lands (3 000 hectares)	2 200	2 200	-	-
Other damages	250	250	-	25

Source: CEPAL estimates based on information provided by the Ministry of Agricultural and Livestock and the Ministry of Planning.

a/ Losses in exchange since production is not exported.

b/ 75 cows, 225 heifers and 300 calves.

/The works

The works mentioned above would only refer to the area in which large gullies have already been formed. However, in other areas located in the outskirts of San Salvador there exist some 20 000 hectares of soils equally susceptible to the same type of damage. They should also be protected by means of erosion control, terracing and reforestation works to avoid similar events in the future. A provisional estimate of the cost of such works would be about 36 million U.S. Dollars. Although this expenditure could not be considered directly attributable to the disaster caused by the rains under reference, it is nevertheless of an urgent nature.

iii) Damage to Other Agricultural Lands. In the Provinces of Ahuachapán, Sonsonate and Santa Ana - particularly in Ahuachapán - the rains also eroded soils and created mud flows which increased river flows and destroyed high quality farmland. These mud flows took place in the medium and high altitude areas of Ahuachapán and Santa Ana, which are mainly devoted to coffee production. Although these lands have a 60 per cent slope, it is nevertheless highly productive because of the type of crops cultivated in them. Works are to be carried out in this area to protect the plantations that were not damaged. It should be noted, nevertheless, that the approximately 500 hectares of eroded and definitely lost lands represent a great loss for the affected land owners; when considering total country coffee production, however, the loss is not so great. It is estimated that the cost of lands lost have a value of 6.9 million U.S. Dollars, the equivalent amount of their probable production over a period of five years. This estimate has been made taking into consideration the average national yield of coffee during the past five years and the average export price of coffee in 1981. In addition, the loss of the coffee plantation itself is estimated at 2 million U.S. Dollars more.

The low-lying lands of the coastal area located west of Sonsonate, towards the Guatemalan border, which are used to produce corn and beans, were also affected by the floods. It is estimated that nearly 1 000 hectares of these lands lost their uppermost layer of soil, thus

/giving

giving rise to a loss in assets which is estimated at 2 million U.S. Dollars. Also eroded or sedimented by the floods were 2 000 hectares more with the resulting reduction in productivity. The cost of rehabilitating these lands is estimated at some 200 000 dollars. (See Table 6.)

iv) Other Damages. A part of infrastructure for coffee drying and processing was destroyed by the pressure of the water and the flooding of 1 500 square metres of drying surfaces. Their repair is most urgent since the coffee crop is ready for harvest and the drying process is important to ensure the quality of the coffee. It is estimated that repairs of these damages will have an additional cost of 200 000 U.S. Dollars (See Table 6.)

5. Damages to Industry and Commerce

No important direct damages were detected in the industry and commerce sectors. Nevertheless a reduction in industrial activity is expected for the remainder of the year due to the indirect effect posed by the shortage of foreign exchange required to import raw materials. Commerce will also be indirectly affected due to increased transport costs, particularly with respect to products purchased in Guatemala.

6. Summary of Damages

The natural disasters of 1982 affected, in decreasing order of magnitude, the following sectors: agricultural production; housing; transportation, and agricultural lands, plantations and infrastructure. The disasters adversely affected the productive apparatus that generates most of the country's foreign exchange as well as the basic foodstuffs for the population; substantially deteriorated the precarious housing conditions of the lower strata of the population; disrupted internal transportation in the western area of the country as well as international traffic with Guatemala, and destroyed or eroded agricultural lands, plantations and infrastructure in the country's most productive areas. Other sectors

/suffered

suffered only minor damages and temporary declines in sales, or incurred in additional expenses when performing their normal operations.

Table 7 provides a summary of the damages caused by the disasters, which are estimated to a total of 129 million U.S. dollars.[9/] Of this amount, 61 million refer to agriculture and livestock production losses; 37 million to losses in the country's assets; and the remaining 30 million to revenues that will not be earned because of paralyzation of normal activities, additional operating costs and the import of foodstuffs. It is estimated that, at the most, 10 million U.S. Dollars can be recovered through reinsurance.

The damages described will also have a negative effect on the balance of payments, as will be seen later on. It is estimated that approximately 30 million U.S. Dollars of agricultural and livestock products will not be exported as a result of the disasters; consequently, some 25 million U.S. Dollars will have to be spent on importing food, fuel, equipment and materials not available or not manufactured locally.

The relative magnitude of the direct and indirect damages may be better understood when compared with some macroeconomic indicators. They represent one fourth of the Government's budgeted expenditures and three per cent of the gross domestic product in 1981. And this has come about when the country's economy is already deeply depressed by other factors. Therefore, the extent and type of the damages will further deteriorate the country's already difficult economic position.

/Table 7

Table 7

EL SALVADOR: SUMMARY OF THE DAMAGES CAUSED BY THE DISASTERS

(Millions of dollars)

Item	Damages		Indirect effects	Import or export components
	Total	Direct		
Total	128.9	98.1	30.4	
Social sector	21.1	8.2	12.5	
Health	2.4	0.0	2.0	2.1
Housing	17.1	6.7	10.4	3.3
Education	1.6	1.4	0.2	0.3
Infrastructure	20.3	15.5	4.8	
Highway transport	12.6	12.5	0.1	2.8
Railway transport	0.8	0.3	0.5	0.5
Ports	1.2	1.1	0.1	0.9
Electricity service	3.2	0.4	2.8	2.4
Water supply and sewerage systems	0.4	0.4	0.0	0.2
Telecommunications	1.3	0.6	0.7	0.6
Other sectors	0.8	0.2	0.6	0.6
Agricultural and livestock sector	87.5	74.4	13.1	
Agriculture	73.4	61.4	12.0	34.1
Livestock	0.1	0.1	-	-
Fisheries	1.0	0.6	0.4	0.8
Lands, plantations and infrastructure	13.1	12.3	0.7	7.0

Source: CEPAL, based on official information.

/III. EFFECTS

III. EFFECTS ON THE ECONOMY

1. Effects on General Economic Development

It should be noted at the outset that the influence of the recent natural disasters on El Salvador's overall economic situation represents, above all, a retrogression that has had negative repercussions on an economy heavily damaged by the internal conflict that has paralyzed investment, destroyed physical assets and reduced per capita income by more than one third over that of 1978. The growth rate of the gross domestic product estimated for 1982, taking into account these effects, is -4.5 per cent (see Table 8), as compared with a contraction of close to 10 per cent both in 1981 and 1980.

It may be deduced from this - and the original forecasts so demonstrate - that the negative tendencies of the overall economic situation would diminish in 1982, since the contraction already experienced had arrived at such a point that it would be unlikely for it to continue descending at this rate. That is to say, the productive sectors appeared to have started to adapt themselves in some way or another to the unstable situation and even gave rise to hopes for investment in certain areas. The natural disasters, however, dashed such hopes. Their effects at the macro-economic level have had repercussions on the growth rate of the gross domestic product, the balance of payments, and in the revenue and expenditures of the Salvadorean Government. They will also be reflected, although to a lesser degree, in the country's external indebtedness.

2. Effects on the Gross Domestic Product

It has already been pointed out that the disasters increased the negative overall growth rate from 2.7 per cent to 4.5 per cent, which meant, in rough terms, that the country will fail to produce goods and services for a value of some 70 million dollars at current prices.

Within this panorama, agriculture, which has been the most affected sector, will suffer a contraction of more than 7 per cent, as compared with the mid-year estimated reduction of 1.5 per cent.

/Table 8

Table 8

EL SALVADOR: GROSS DOMESTIC PRODUCT BY ECONOMIC ACTIVITY, 1981, AND FORECASTS FOR 1982

(Growth rates)

Item	1981	1982 Forecasted before the disaster	1982 Probable after the disaster
Gross domestic product	-9.5	-2.7	-4.5
Goods	-11.7	-3.4	-6.5
Agriculture	-10.1	-1.5	-7.4
Mining	-2.1	-1.3	-1.3
Manufacturing industry	-15.8	-5.9	-6.5
Construction	-1.3	-5.1	0.0
Services	-7.7	-2.2	-3.0
Electricity, gas and water	-3.2	2.0	-4.0
Transportation, warehousing and communications	-11.8	-0.5	-6.5
Commerce and finances	-12.6	-5.1	-6.0
Home ownership	1.5	2.0	-0.1
Community, social and personal services	-4.6 } -2.4	-1.9	-3.7
Public administration	2.4 }		2.4

Source: For 1981, the Central Reserve Bank. The year 1982 has been estimated by CEPAL on the basis of information provided by the Economic Studies Department of the Central Reserve Bank.

/Losses

Losses in this sector, as indicated in the chapter on agriculture, refer both to production for the domestic market - in which losses were greater - and for exports, particularly of cotton. Their effects will influence the balance of payments, as will be seen later on, because of the need to import grains - in addition to the imports already required to cover the deficit predicted - and because of reduced sales abroad.

Following, by order of relative importance, are the losses forecasted in transportation activities and home ownership, owing to the total or partial destruction of approximately 3 500 urban and rural dwellings. The gross domestic product of these sectors will consequently show a decline as will, to a lesser degree, also be experienced in commerce and personal services. Industry will show a slightly greater decline, essentially attributable to suspensions in the supply of electricity. In any case, the year's negative performance of this sector will have been influenced mainly by the decrease in internal Central American demand and by the difficulties in obtaining foreign exchange for importing inputs. The decline in the overall gross product would have been even greater without the reactivation expected for the construction sector between now and the end of the year, in addition to that of the public sector as a result of the inevitable increase in its operating expenses due to face the emergency situation.

3. Effects on the Balance of Payments

The balance of payments was affected in 1982 by a drop of close to 28 million Dollars in exports that could largely be ascribed to the effects of the drought and the floods. This decline accentuated the already depressed conditions of the export market prior to the disaster, and was felt with regard to traditional products (11 million Dollars less for coffee, 6 million less for cotton and 3 million less for sugar) and to a much lesser extent with regard to manufactured products destined for the Central American market, due to the transportation problems and production irregularities linked to the disasters some exporters will face. (See Table 9.) Furthermore, imports will have to be increased

/Table 9

Table 9

EL SALVADOR: BALANCE OF PAYMENTS

(Millions of dollars)

	1980	1981	1982 Forecasts	
			Before the disaster	After the disaster
Exports fob	1 072.1	793.1	795.1	767.1
Coffee	615.2	452.6	409.4	398.2
Cotton	82.8	52.6	58.6	52.1
Sugar	13.2	13.4	18.5	13.4
Shrimp	13.4	18.7	23.4	23.4
Others	347.5	255.8	285.2	280.0
Imports	-906.7	-915.1	-933.0	-963.0 a/
Balance of services	-196.7	-193.4	-196.2	-193.5
Income	195.4	197.8	190.0	190.0
Expenditures	392.1	391.2	386.2	383.5
Donations (net)	48.9	28.2	140.0	160.0
Balance in current account	17.6	-287.2	-194.1	-229.4
Capital movement (net)	-213.8	208.1	234.6	234.6
Official and bank capital	181.5	250.4	272.2	272.2
Withdrawals	231.7	328.9	358.4	358.4
Amortizations	50.2	78.5	86.2	86.2
Undetermined capital	-400.4	-45.0	-37.6	-37.6
Special drawing rights	5.1	2.7	-	-
Exchange of net reserves	-196.2	-79.1	40.5	5.2

Source: Central Reserve Bank of El Salvador.

a/ The greatest impact of the 1982 meteorologic phenomena on imports will be felt in 1983.

/to cope

to cope with reconstruction requirements and with additional needs for fuel, as referred to in the preceding section. The balance in current account will therefore be increased by some 35 million Dollars to reach a figure close to 230 million Dollars. It may be pointed out, however, that this imbalance is less than the one experienced in 1981, which amounted to 287 million Dollars.

Two factors explain why the effects of the disasters on the 1982 balance of payments are rather moderate. The first is the expectation of a substantial increase in donations (from 28 to 160 million Dollars between 1981 and 1982), which cannot be explained as a consequence of the sending of international aid in response to the disasters but rather by the fact that a substantial loan from the North American Aid Programme to Central America and the Caribbean arrived as a donation. The second derives from the fact that the supply deficit in basic grains - corn, beans, rice, sorghum and vegetable oil - which will necessarily have to be filled with imports amounting to 50 million Dollars, will be reflected in purchases abroad in 1983, since most of these products will be harvested in the last quarter of 1982 and the shortages attributable to the disasters will only become evident in the middle of next year.

It is expected that the climatic phenomena under discussion will have little bearing on future external indebtedness. During 1982 the country counted with a greater fluency of foreigh financing facility, by the end of 1982, the medium and long-term external public debt will have reached 987 million Dollars. (See Table 10.) Its share in the gross domestic product, which had risen to 23 per cent in 1978, reached 68 per cent in 1981. Table 10 also shows that the rate of indebtedness accelerated as of 1979, shifting its composition in favour of bilateral official sources and away from multilateral agencies and private banks, which showed negative figures. The Salvadorean Government came to absorb a substantial portion of the external debt, from 4.6 per cent in 1976 to 82.4 per cent in 1982.

Finally, although the debt service increased less rapidly than the cumulative balance, inasmuch as exports decreased drastically in the last four years, its burden on the availability of foreign exchange rose from 3.1 per cent in 1979 to 14.5 per cent in 1982.

/Table 10

Table 10

EL SALVADOR: MEDIUM AND LONG-TERM FOREIGN INDEBTEDNESS

(Millions of dollars)

	As of 31 December						
	1976	1977	1978	1979	1980	1981	1982
Balance	282.9	280.4	339.1	398.6	447.6	651.9	986.9
Disbursed		51.0	74.5	75.1	99.6	189.0	359.0
Service		63.9	32.0	30.7	39.1	39.3	64.2
Amortization		53.5	15.8	15.7	20.6	14.7	24.0
Interest		10.4	16.2	15.0	18.5	24.6	40.2
By debtor	282.9	280.4	339.1	398.6	477.6	651.9	986.9
Central Government	172.0	152.7	204.7	260.6	141.1	502.0	813.5
Remainder of Government	6.3	6.3	5.9	5.4	4.5	4.5	4.1
State-owned corporations	97.7	82.9	95.7	104.4	114.1	125.7	129.1
Intermediate public financing corporations	46.9	38.3	32.7	28.0	17.7	19.5	40.0
By creditor	282.9	280.4	339.1	398.6	477.6	651.9	986.9
Agencies							
International	173.9	198.3	252.4	306.2	343.9	415.3	510.8
Governmental	46.7	64.3	72.6	82.0	129.6	232.8	462.6
AID	38.8	41.3	42.4	43.1	57.6	141.5	351.2
Eximbank	5.0	4.7	13.7	18.2	18.2	18.2	16.8
France	-	-	-	4.7	29.3	40.7	40.2
Venezuela (FIVE)	1.3	16.8	15.2	14.3	17.5	25.5	40.0
Others	1.6	1.5	1.3	1.7	7.0	6.9	13.4
Private banks	62.2	17.0	14.0	10.4	4.2	1.9	3.6

Source: Central Reserve Bank of El Salvador.

/4. The public

4. The Public Sector and the Plan for Economic Reactivation

The effects of the meteorological phenomena of 1982 will necessarily be reflected in a contraction of current revenue and in an increase in the Government's operating expenses, thus the negative balance in current savings will double the amount programmed prior to the disaster to a figure close to 270 million Colons.[10/] (See Table 11.) The changes in receipts and expenditures appearing in this table under After the disaster should not strictly be attributed to it, since they also include adjustments - particularly with respect to expenditures - derived from the revision of investment programmes in face of the inflation process. In any case, with respect to current revenue, tax receipts - which were expected to exceed those of the previous year by 50 million Colons - will not even reach the value of those of 1981. This was due to a decline in indirect taxation and an even greater decline in taxes to the foreign trade (more than 35 million Colons) as a consequence of the reduced revenue obtained from exports and because many imports of consumer goods will not be subject to custom duties since they consist of official donations.

At first a slight increase in operating expenses was envisioned; however, that expectation was modified in view of the greater disbursements required for urgent repairs and direct assistance to the population because of the storm. An increase of 40 million Colons is expected for such expenses. A significant variation is also expected with regard to forecasts concerning real investment. For the same reasons, this item will increase from 230 in 1981 to almost 410 million Colons.

In summary, the significant increase in the Government's total expenditures - both operating and investment expenditures - combined with the contraction of income already mentioned, could result in an increase in the fiscal deficit to more than 860 million Colons, equivalent to more than 80 per cent of current revenue and 9 per cent of the gross domestic product. It appears unlikely that this deficit will be covered if sufficient external financing is not obtained. (See Table 11.)

/Table 11

Table 11

EL SALVADOR: CENTRAL GOVERNMENT INCOME AND EXPENDITURES

(Millions of colons)

	1982	1981	1982[a/] Before the disaster	1982[a/] After the disaster[b/]	1983[c/]
1. Curret revenue	1 040.6	1 107.1	1 128.0	1 073.4	1 360.3[d/]
Tax revenue	989.3	990.3	1 041.0	986.4	...
Direct	312.0	297.2	299.1	299.1	...
Indirect	302.3	370.6	387.0	369.4	...
On foreign trade	375.0	322.5	354.9	317.9	...
2. Operating expenses	1 077.3	1 233.5	1 253.2	1 342.2	1 378.9
Wages	617.7	657.5	726.0	726.0	...
Other operating expenses	459.6	576.0	527.2	616.2	...
3. Current savings (1-2)	-36.7	-126.4	-125.2	-268.8	-18.6
4. Capital expenditures	483.8	539.7	453.6	593.6	491.4
Real investment	380.2	381.1	231.6	409.0	...
Debt amortization	23.3	56.9	94.6	94.6	...
Other capital expenditures	80.3	101.7	127.4	90.0	...
5. Total expenditures (2+4)	1 561.1	1 773.2	1 706.8	1 935.8	1 870.3
6. Deficit	-520.5	-666.1	-578.8	-862.4	-540.0
7. Deficit financing	520.5	666.1	578.8	862.4	540.0
Internal financing	394.5	475.0	239.6	...	...
External financing	125.9	191.1	339.2	...	...

Source: Ministry of Finance.
Note: 1 colon = US$ 0.40
a/ Forecasts based on real data until September.
b/ To a certain extent these also include revisions of revenue and expenditures not directly linked to the natural disasters.
c/ Estimates that include the revenue from the tax reform under discussion when this report was being prepared.
d/ Includes 1 208.3 million colons in normal revenue and 152 million colons as a result of the reforms.

/The unparalleled

The unparalleled depression afflicting the country as a result of non-economic factors, which has been accentuated by the natural disasters discussed in this report and added to the growing external and public finance imbalances, has prompted the Salvadorean authorities to formulate a National Reactivation Plan. Considerable progress in the definition and structuring of such Plan had been achieved when the present report was being prepared, giving rise to hopes that it would be in full effect by 1983. Its basic goals may be summarized as: a) reconstruction of damaged infrastructure; b) adoption of sound decisions to reduce the budgetary deficit; c) increase of exports; d) improvement of foreign exchange reserves and the balance of payments; e) maximum utilization of installed industrial capacity; f) fostering of existing irrigation and agro-industry projects; g) putting public corporations on a sound basis to enable them to finance their own reconstruction, operating, and investment programmes without drawing on the General Fund, and h) making credit more easily accessible to agriculture and industry, particularly with regard to export activities.

IV. REQUIREMENTS FOR NEW INTERNATIONAL CO-OPERATION

1. General

As explained in the preceding chapters, the natural disasters caused extensive material damages to social and physical infrastructure and dealt a severe blow to agricultural production. The latter is the country's main source of foreign exchange and fiscal revenues and has also traditionally generated the largest number of jobs.

As emphasized before, in 1982 the natural phenomena accelerated the country's rapid economic and social deterioration over the last three years caused by well-known non-economic factors and by the problems associated with the recently effected banking, foreign trade and land tenure reforms. Family and national income has decreased sharply and it is expected that, as long as the internal conflict persists, it will continue to decline. It must be emphasized that the natural disasters will aggravate all these problems. On the one hand, unforeseen expenditures will have to be made to rehabilitate or replace existing capital assets instead of increasing them, and at a cost much higher than their original value; and, on the other, imports of basic grains will have to be made in order to feed the population. The country's present economic capacity, both with respect to savings and the external sector, will thus be affected in the immediate future.

Some rehabilitation and reconstruction efforts, such as the provision of food, should be undertaken on an urgent basis. In order to prevent new and greater disasters, immediate measures must be taken to replace and repair destroyed or damaged dwellings and those which are in danger of destruction from new floods. The same is true of soil conservation measures in the upland areas located around San Salvador and on the volcanic ranges located in the Sonsonate, Ahuachapán and Santa Ana Provinces, and to the rehabilitation and reconstruction of lost and damaged infrastructure and the import of basic grains.

El Salvador can be successful in these endeavours only if it receives additional international assistance, above and beyond that already provided to support development plans. The country still has

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some foreign indebtedness capacity since its present debt service represents a reasonable fraction of its exports. Nevertheless new international sources of financing must be found in a world in which such financing is currently limited.

In this context, it is necessary to determine the aid that will be required for the phases of emergency and of rehabilitation and reconstruction of damaged property. This does not mean, however, that these phases must follow a rigorous chronological order; quite the contrary, in some cases they may and should be approached simultaneously and complementarily.

2. Characteristics of the Required International Assistance

It is possible at this stage to point out the needs which the international assistance should fill, even though neither the exact amount of Government expenditure nor the amount of international aid that must be requested can be determined with accuracy at the present time.

In the first place, it would be desirable - in view of the difficulties that the Government will face after the disasters which worsen the situation imposed by the aroused confrontation - to set up a programme of direct support, flexible enough in regard to counterpart contributions. In other words, loans are to be obtained under very soft terms and should be able to cover up to the total cost of each project.

In the second place, to facilitate emergency and rehabilitation tasks, unused funds of existing loans could be re-allocated to activities which are at present of higher priority than those originally envisaged.

It might also be advisable to grant financing by programmes, and not by projects, in order to avoid delays in reconstruction or rehabilitation and to simplify procedures and conditions normally required for evaluating loan requests.

As far as support for the balance of payments is concerned, El Salvador could resort not only to its traditional sources of financing, such as the Central American Monetary Council, the Central American Bank for Economic Integration, the International Monetary Fund and bilateral sources, but it should also attempt to sell its coffee surpluses on non-traditional markets.

/Finally,

Finally, as far as technical co-operation is concerned, the country could request more assistance than it is presently receiving from the Reserve Fund of the United Nations Development Programme and from the United Nations Special Programme for Emergency Relief and Development Assistance, established by General Assembly resolution 3202 (S-VI).

3. Prioritary Fields for International Financial Assistance

It is not necessary to complete a detailed reconstruction plan in order to identify projects, programmes or sectors requiring immediate attention on the part of the Government and the international community. The damages specified in this report clearly identify the sectors that should receive highest priority. Such activities, which are summarized below and listed in Table 12, refer to the phases which occur after a disaster has struck: emergency, rehabilitation and reconstruction. It should be borne in mind, however, that this does not mean that a chronological order must be followed in carrying out the tasks at hand nor that they should be included as an integral part of national development plans.

Priority attention should definitely be accorded to housing, food, health, soil erosion control and the refinancing of agricultural and livestock production, in addition to the important areas.

a) Emergency

As a result of the floods, some 1 000 families lost their means of subsistence, either because they lost their work implements or because of the death of family members who contributed to household income. It is therefore urgent to provide food for some 50 000 people over a period of three months, the time in which it is expected they can reorganize their lives and again enter the labour force.

Construction materials and tools are also required in order for aproximately half the number of the families indicated above to reconstruct their homes - at least temporarily - on lots already made available by the Government.[11/]

/Table 12

Table 12

SUGGESTIONS ON POSSIBLE INTERNATIONAL ASSISTANCE TO EL SALVADOR REQUIRED TO REPAIR DAMAGES CAUSED BY THE DISASTERS OF 1982

Phase and Sector	Financial Co-operation		Technical Co-operation	
	Description of Programme or Project	Possible Sources of Co-operation	Description of Programe or Project	Possible Sources of Co-operation
a) Emergency Phase				
Social Sectors	Provision of food to 50 000 for a period of three months	Governments; FAO/WFP		
	Provision or donation of construction materials and tools for 500 dwellings	Governments; Private organizations	Assistance in human settlements planning	Governments; United Nations, OAS
	Provision or donation of anti-rabies vaccine, insecticides and anti-malaria drugs	Governments; PAHO/WHO, Red Cross	Assistance in the design of preventive compaigns	PAHO/WHO; Governments, Red Cross
	Repair of drinking water supply systems in rural areas and of the hot water and steam system of the Ahuachapán hospital	Governments; IDB, IBRD	Assistance in reorienting existing loans	PAHO/WHO; IDB, IBRD
Agricultural and Livestock Sector	Erosion control and reforestation in upland areas around San Salvador	Governments, IFAD	Assistance in the formulation and supervision of the programme	FAO, Governments
b) Rehabilitation Phase				
Social Sectors	Financing of minimum housing programme to replace dwellings damaged by the mud flows and those located in sorrounding areas	Governments; CABEI; IDB, IBRD	Assistance in the planning of human settlements	Governments; United Nations, HABITAT

/(Continued)

Table 12 (Continued)

Phase and Sector	Financial Co-operation: Description of Programme or Project	Financial Co-operation: Possible Sources of Co-operation	Technical Co-operation: Description of Programme or Project	Technical Co-operation: Possible Sources of Co-operation
b) Rehabilitation Phase (Conclusion)				
Agricultural and Livestock Sector	Import of 12 million dollars worth of basic grains	Governments	Assistance to small farmers for replacement of crops and farm implements	FAO/TCD
	Rehabilitation of the Zapotitán District irrigation and drainage system	CABEI; IDB, Governments		
Public Sector	Refinancing of loans to farmers and co-operatives whose crops were lost	CABEI; IDB; IBRD, Governments		
c) Reconstruction Phase				
Social Sectors	Implementations of minimum housing programmes to eliminate marginalization in urban centres	Governments; CABEI; IDB, IBRD		
	Establishment of schools and health centres in new settlements	Governments; CABEI; IDB; PAHO/WHO; UNESCO, UNICEF		

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Table 12 (Conclusion)

Phase and Sector	Financial Co-operation: Description of Programme or Project	Financial Co-operation: Possible Sources of Co-operation	Technical Co-operation: Description of Programme or Project	Technical Co-operation: Possible Sources of Co-operation
c) Reconstruction Phase (Conclusion)				
Infrastructure	Definitive restoration of the railway network	Governments, CABEI		
	Rectification of river channels in western part of the country	Governments		
	Establishment of meteorological and hydrological forecasting system and strengthening of civil defence organization	Governments; WMO; UNDRO, UNDP	Training of personnel in meteorological and hydrological forecasting and in organization for disasters	WMO; UNDP; UNDRO; UNESCO, Governments
Agricultural and Livestock Sector	Financing to increase agricultural production for domestic consumption and export; re-establishment of livestock population levels	IDB; IBRD; Goverments, FAO	Establishment of an efficient system for crop forecasting	FAO, Governments
	Reclaiming of silted soils on the western coastal plain	IDB, IFAD		
Public Sector	Establishment of a special fund for immediate needs, and of a minimum deposit of emergency materials, in the event of future disasters, preferably at the subregional level	CABEI; Red Cross, Governments	Inclusion of disaster vulnerability study in all economic development projects	UNDP; UNDRO; CEPAL/ILPES, DCTD
			Identification of disaster-prone areas, establishment of anti-disaster design and construction standards	UNDP; UNDRO; OAS; WMO, UNESCO
			Inclusion of disaster forecasting and prevention programmes and projects in the national development plan	UNDP; CEPAL/ILPES, DCTD

It is also urgent to repair drinking water supply systems in rural areas to avoid the consumption of polluted water and the occurence of epidemics among the population.

The campaign for the elimination of stray dogs must be continued, as well as those to prevent malaria and other diseases; the necessary medicines and insecticides should be acquired.

The need to initiate without delay the necessary works to halt progressive erosion of the soils located in the upland areas surrounding San Salvador and on the volcanic ranges of the Sonsonate, Ahuachapán and Santa Ana Provinces is also of great importance.

b) Rehabilitation

This phase will require the establishment of a programme to replace the dwellings destroyed or damaged by the mud flows in Montebello and the surrounding areas which are still in danger of destruction from similar disasters. Since the Government will provide suitable land for this project, financing - on special conditions - will be required for their construction.

In addition to the substantial basic grains deficit forecasted for 1983 at the beginning of the agricultural cycle, the prolonged canícula from July to September and the storm in mid-September destroyed many crops and reduced the productivity expected of others. Consequently, substantial quantities of basic foodstuffs will have to be imported before shortages begin to take effect at the beginning of next year.

The Zapotitán irrigation and drainage systems will have to be rehabilitated so that it may be used during the following dry season and thus reduce the expected food shortages.

It will also be necessary to refinance farmers and co-operatives that lost their crops by providing them with special term financing to enable them to meet their obligations.

Finally, direct financing will be required to support the country's balance of payments in view of the reduction in exports resulting from the disasters.

/c) Reconstruction

c) Reconstruction

Without disregarding the need to encourage the natural overlapping of reconstruction and rehabilitation efforts and of these, in turn, with work carried out during the emergency phase, a minimum housing programme should be undertaken to eradicate marginalization in urban areas in danger of being destroyed by new floods, and school and health centres for the population should be established in the new settlements planned by the Government.

Determined efforts should be made to restore the railroad network and to rectify the channels of rivers located in the western area of the country adjacent to Guatemala. A hydrometeorological early warning system will also have to be set up which, on a real-time and continuous basis, will enable the Government to alert the population against new disasters. Civil defence systems should also be strengthened to evacuate the population in time to reduce damages as much as possible on similar occasions.

Special lines of credit should also be established to promote an increase of domestic and export-oriented agricultural production and for bringing livestock population to pre-disaster levels.

Another task to be undertaken is the reclamation of the lands which became located on the western coastal plain which became heavily sedimented, by removing the material deposited there, so that they can be used again for production.

Finally, a special reserve fund should be set up - preferable in co-operation with other countries in the subregion in order to benefit from economies of scale - for emergency situation, together with a minimum reserve of emergency materials in anticipation of future disasters.

4. International Technical Co-operation

The international financial co-operation programmes and projects referred to above would have to be supplemented with technical assistance over and above that which is presently provided by international organizations and friendly Governments. Such technical co-operation would

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essentially be aimed towards formulating specific projects for the emergency, rehabilitation and reconstruction phases, and also towards facilitating the obtention of the external financing they would require. Such co-operation would also aim at incorporating post-disaster needs into the national development plans.

Technical assistance would be required for planning the new human settlements envisaged to attend to the populations's housing needs, as well as for the design and implementation of preventive health campaigns and the urgent formulation of request to reorient existing loans for rural sanitation.

Technical co-operation might be required for the design and implementation of the reforestation and soil erosion control programme in the upland areas affected by the storm.

The establishment of an efficient crop forecasting system to determine future crop deficits or surpluses might also be a field for international technical co-operation.

External technical assistance is also required to train and specialize Salvadorean personnel in meteorological and hydrological forecasting and in the organization to attend disasters of all kinds. For this purpose certain subregional schemes, that have already been proposed in this context and have taken on new relevance in the light of the disasters, might be utilized.

Studies of the technical and economic feasibility of new projects should also include the variable of disaster provenance. Technical co-operation is also required to prepare a land-zoning map of the country according to vulnerability to different kinds of disasters and to formulate and establish anti-disaster design and construction standards.

Finally, the variable of disasters - including programmes and projects for prevention, forecasting and post-disaster organization - should be incorporated into the national development plans.

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1/ See Guatemala: Repercusiones de los fenómenos meteorológicos ocurridos en 1982 sobre la situación económica del país (E/CEPAL/MEX/1982/R.4)

2/ See Ministerio de Agricultura y Ganadería de El Salvador y Centro Agronómico Tropical de Investigación y Enseñanza, Agricultura en zonas afectadas por canícula interestival en El Salvador, 1982.

3/ See Ministerio de Agricultura y Ganadería de El Salvador, Instituto Salvadoreño de Recursos Naturales, Boletines Agrometeorológicos de El Salvador, 1982.

4/ See Comité Nacional de Emergencias, Informe de daños ocasionados por el temporal de los días 16 al 20 de septiembre de 1982 y requerimientos para acciones de emergencia, San Salvador, 23 September, 1982.

5/ In the case of Guatemala the indirect transport costs were much higher and are estimated at around 3.3 million U.S. Dollars in view of the large volume of cargo which was handled through the port of Acajutla and which - as a result of the destruction of Puerto de San José in the neighbouring country - will be increased further in the next six months.

6/ On the contrary, because of the damages to Puerto de San José in Guatemala, it is expected that higher than normal income may be produced over the next six to nine months, since at least part of the cargo that formerly entered the Guatemalan port will now be transferred to Acajutla.

7/ A third boat, a tuna vessel under Peruvian flag, was also damaged, and repairs will cost approximately 1.4 million U.S. Dollars. As it could not be ascertained whether the boat was fishing for a Salvadorean or Peruvian company, this cost was not included in the total estimates.

8/ On 2 November another mud flow occurred in Montebello without, however, taking any victims.

9/ The prolonged canícula also affected Nicaragua and Guatemala, whereas the storm only affected El Salvador and Guatemala. Preliminary estimates place the damages in Guatemala at a value of 80 million U.S. Dollars and the number of deaths at 600. Damages due to the drought in Nicaragua are also estimated at 80 million U.S. Dollars.

10/ One Salvadorean Colon equals 0.40 U.S. Dollars.

11/ It is estimated that the other half of the affected families who lived in urban areas have found lodging with relatives, and that those in rural areas are rebuilding their homes with their own resources.