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SUMMARY

On 5 September 1995 the island of Anguilla, in the British West Indies, was struck by Hurricane Luis enduring very strong winds and its 20-foot storm surge. The island's housing and hotel infrastructure as well as its basic services of water supply, electricity and telecommunications were adversely affected. Beaches —the island's most attractive feature in its upscale tourism activities— were eroded and the environment in general was negatively impacted.

While in dollar terms the physical damages may be considered low, the hurricane impacted Anguilla's main source of national and personal income —the tourism sector— just when the main tourism season was about to begin. Furthermore, living conditions of the population have suffered a setback, since housing and other social sectors sustained severe damages and income will be reduced albeit temporarily due to reduced tourism activities.

The macro-economic position of the island —which had been improving steadily in recent years— will be negatively affected. Gross domestic product experience significant losses in growth both during 1995 and the following year. The island government's finances will incur into a deficit, reversing previous trends. Prices for construction materials are expected to rise as a result of the abnormal reconstruction demand. Imports of equipment, materials and specialized labour for reconstruction are expected to further increase the foreign exchange deficit.

The Government and the private entrepreneurs of the hotel sector are making special efforts to restore the island's infrastructure and services to pre-disaster conditions. For that purpose, use of insurance reimbursements is being made. However, the size of the reconstruction effort requirements for the public sector facilities and infrastructure is such that the government's financial capacity is already surpassed by demands.

The cooperation of the international community is essential if the reconstruction of the island's infrastructure and services is to be achieved. In brief, unless external cooperation is forthcoming the danger exists that the problems faced by the affected population may take longer to solve or may not be solved at all.

This study has been prepared at the request of the Government of Anguilla. It describes the results of an independent, objective assessment of the situation imposed by the disaster, together with the repercussions on the population and on the island's economic position. It also presents a number of projects and activities that are essential for the rehabilitation and reconstruction of the island, some of which require the technical and financial cooperation from the international community.

It is expected that the document will assist the Government of Anguilla to expedite its programme of reconstruction following the disaster, and to facilitate the obtention of external cooperation.

I. INTRODUCTION

1. Background

a) General considerations

On 5 September 1995 a very strong hurricane struck the island of Anguilla. In its path, Hurricane Luis' strong winds and accompanying storm surge and sea waves destroyed or damaged infrastructure and caused severe negative impacts on the island's environment.

While in dollar terms the damages may be considered low when compared to the effects of other natural disasters that have occurred in the Caribbean, Hurricane Luis affected Anguilla's main source of national and personal income —the tourism sector— at a time when the tourism season was about to begin.

This disaster is part of a series of similar calamities that have affected the Caribbean region in the present year. Indeed, the hurricane season of 1995 has been extremely active, with more than 16 tropical storms or hurricanes in the year. Furthermore, the island of Montserrat has been suffering the effects of a volcanic eruption.

The effects of this and other natural disasters in the Caribbean subregion are setting back the governments' efforts for social and economic development. Similar setbacks are occurring in the wider context of the entire Latin America and Caribbean region. 1/

While the damage sustained by Anguilla in this occasion has mainly affected the private tourism sector, the effects of the disaster on the other sectors and areas of the country's economy cannot be faced on its own by the government of the island. International cooperation will be needed to restore living and social conditions to pre-disaster levels.

b) The purpose of this report

This report has been prepared at the explicit request of the Government of Anguilla. Its purpose is to provide an independent, objective assessment of the damages caused by the disaster, as well as to outline some reconstruction activities to be undertaken by both the island's government and by the international community.

1/ Estimates made by ECLAC indicate that on an average year natural disasters cause material and production losses valued at more than 1,500 million US Dollars as well as more than 6,000 deaths. See Roberto Jovel, *Natural Disasters and their Economic and Social Impact,* CEPAL Review, number 38, Santiago, Chile, 1989.

The document presents a quantitative evaluation of the damages sustained by the different sectors as well as the effects to the macro-economic position of the island. The evaluation has been conducted using a comprehensive damage assessment methodology developed by the Economic Commission for Latin America and the Caribbean (ECLAC). 2/

The evaluation identifies the economic and social sectors that were hardest hit by the disaster, which will consequently require preferential attention during the reconstruction phase.

The report includes at the end a number of proposals for reconstruction projects for which no financing capacity exists in the island and which can be presented for consideration by the international donor community.

c) The mission

The mission was fielded by ECLAC, with financial support from the United Nations Development Programme (UNDP), at the specific request of the Chief Minister of the Government of Anguilla.

The team was composed of staff members of ECLAC that have a wide-ranging experience in damage assessment work following natural disasters, and which covered all fields that deserved attention in the case.

During the period 19 to 26 September the ECLAC mission worked very closely with the appropriate Anguillan Government officials. It held numerous meetings with them and with private sector representatives, and conducted on-site inspections of the affected areas to gather existing data and develop its own observations of the effects of the disaster.

This report describes the result of the work of the ECLAC mission. It takes into consideration numerous partial reports prepared by both government offices and private individuals and entities. It is the result of an independent study to assess the effects of the disaster as objectively as possible under the circumstances.

2. Description of the phenomenon and its overall effects

Luis was a hurricane that originated near Cape Verde and wreaked havoc on the northern Leeward Islands, causing more than a dozen deaths and thousands of millions of dollars in economic losses.

2/ See ECLAC, *Manual para la estimación de los efectos socioeconómicos de los desastres naturales*, Santiago, Chile, 1991.

It followed a path described in Figure 1 since its initial stage as a tropical depression, its subsequent conversion into a tropical storm and into a full-fledged hurricane of category 4 in the Saffir/Simpson scale, and its eventual disappearance in the North Atlantic Ocean. 3/

The center of the hurricane passed directly over Barbuda and very close to Antigua, St. Barthelemy, St. Maarten and Anguilla; its southern portion of the eye wall affected these islands with full force. (See Figure 1.)

In the particular case of Anguilla, it is reported that Luis exhibited sustained winds of up to 140 knots (250 kilometers per hour) and wind gusts of up to 325 kilometers per hour. 4/ These winds caused many building roofs to collapse, some structures were damaged considerably, and many window glasses were broken; these buildings included not only private houses and hotels and restaurants that had to close for several weeks, but public facilities such as schools, community centers and offices as well. Electricity, telephone and cable television poles and lines were also broken or brought down and these services were interrupted for considerable periods of time depending on the location and extent of the damage they sustained. Water supplies that depend on electricity to run pumps in well systems were also interrupted for similar periods, although they may not cover the whole island. Many trees —most notably palm trees— were toppled and even uprooted by the strong winds, and cannot be recovered; they sometimes fell over buildings causing further damage and destruction.

The hurricane was accompanied by a storm surge and sea waves of up to 6 meters in height that had a very negative effect on beaches, boats and infrastructure of all kinds located near the coast. Beaches in the western-most area of the island, where the main tourism facilities are located, were eroded in a very noticeably manner. Very large amounts of sand were eroded from the beaches and deposited in the adjoining sea bed. Some hotel facilities were left without sand at some key beach locations, and the footings of some hotels and ancillary structures were severely compromised by the loss of sand. 5/

Furthermore, the sea waves washed over and flooded some keys where other tourism facilities were located, damaging or destroying them completely. The storm surge also made many fishing boats to capsize or sent them aground, and destroyed many fishing traps used by artisan fishermen, thus crippling the small-sized fishery activity. In addition, sea waves entered into inland pools or lagoons, damaged existing levees and mangroves, and modified water salinity there with the corresponding effects on animal and vegetal life.

In parts of the eastern coast, the waves deposited large amounts of debris that had been collected by the storm in nearby islands. Many tree trunks and even small to medium pieces of coral reef were deposited in the beaches, and are being buried into the sand by the effect of the tides,

3/ Lawrence, Miles, *Preliminary Report on Hurricane Luis*, National Hurricane Center, Miami, November 1995.

4/ Oral communication by the meteorological officer at Anguilla's airport.

5/ In order to understand the matter it should be borne in mind that the quality of beaches has been one of the main attractions for the tourists that come to Anguilla.

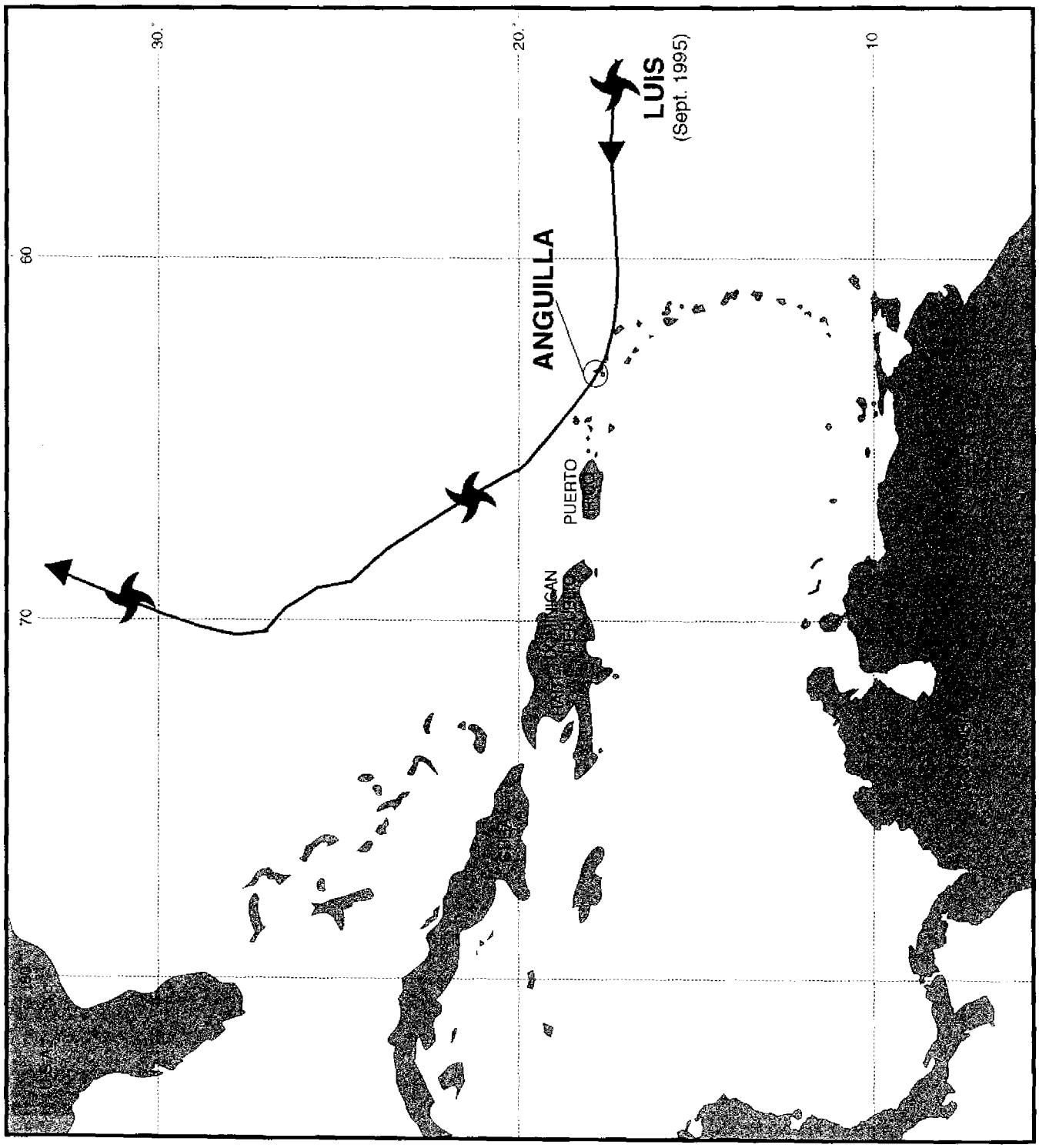

FIGURE 1

rendering the beaches unsafe and unattractive to tourists. Heavy earth moving machinery would be needed to clear long stretches of these beaches of the debris and restore them to pre-disaster conditions.

The hurricane produced rainfall of up to 346 millimeters as measured at the local airport in The Valley, which figure represents 65 per cent of the total amount that falls in an average year. These heavy rains have damaged or rendered useless furniture and other goods and materials that were in the buildings that lost their roofs, and have damaged the road network in the island.

The disaster therefore caused damages not only to infrastructure and services of many sectors as will be described later on, but also imposed considerable damage to the already fragile ecosystems of the island.

II. DAMAGE ASSESSMENT

1. Introduction

Estimates of the damage caused by Hurricane Luis on Anguilla were made on the basis of partial information. Authorities of the Anguillan Government had gathered some information concerning damages and losses on some social and economic sectors; private enterprises had made damage assessments that concerned their own activities.

In view of the urgent need to define reconstruction plans it was decided to undertake the assessment based on such preliminary and partial information, even though some degree of accuracy had to be sacrificed.

The information that was available came from Anguilla Government ministries and top managers of private enterprises, as well as from some individuals who —due to their recognized professional expertise— had relevant knowledge concerning a given subject. The ECLAC mission conducted on-site observations that made it possible to verify, supplement, adjust or discard the information received.

The data was then processed using a special damage assessment methodology developed by ECLAC on the basis of experience acquired in many other similar situations of disasters. 6/ This entailed estimating direct damages on the basis of replacing capital stock and inventories that had been totally destroyed 7/ and the cost of repairs to what had only been damaged. It also required calculating indirect damages from lost output in production and lost revenues in services brought about by the direct damages, and the higher outlays required to return the affected activities to normal conditions.

The results thus obtained provide an idea of the damage and can be considered to be sufficiently reliable for purposes of planning and programming investments to be made during the reconstruction period.

The value of damages was estimated in local currency (Eastern Caribbean Dollars) —at November 1995 prices— and converted into United States Dollars at the rate of 2.68 EC$ to the Dollar.

6/ See ECLAC, *Manual para la estimación...*, op. cit.

7/ Even though it is recognized that the value of lost assets is less than their replacement cost, the latter is a truer measure of the manner in which the national economy will be affected as a result of the reconstruction program to be undertaken. Replacement also includes some elements of improved technology for some items, such as higher-quality specifications for low-cost housing.

2. Social sectors

The winds of the hurricane, its high sea waves and the accompanying rainfall imposed direct and indirect damages in the housing, health and education sectors.

a) Housing

Even though most of the houses in Anguilla are made out of reinforced concrete —as a result of the devastation caused by Hurricane Donna which struck the island in 1960— damages of varying degree occurred as a result of the strong winds of Hurricane Luis and the accompanying rains.

The houses were damaged due to the entire or partial loss of the roof, partial or total loss of the roofing structure, rupture of the house ceilings together with their thermal isolation and electrical wiring, breaking of window panels and damage to window and door sills, damage to wall painting caused by the falling roof and ceiling or by rain, etc. On the outside electrical connections were damaged by falling trees or branches, and perimeter fences were destroyed or damaged. Some home furnishings were also damaged as a result of rain falling directly on them due to the absence of the roof and ceiling.

The above type of damages was common to all housing, regardless of size and quality. More intense damages were caused to houses owned by lower income families, where lower-quality construction techniques or inadequate maintenance were utilized by the owners.

It was estimated that 35 per cent of the houses in the island sustained damages of varying intensity. The number of houses that were completely destroyed, heavily damaged or only partially affected, classified by different types of housing, was determined as follows:

Quality of construction	Number of houses that were affected			
	Total	Destroyed	Major damage	Minor damage
Total	**455**	**30**	**155**	**270**
High	55	-	15	40
Medium	91	-	21	70
Medium-low	136	-	46	90
Low	173	30	73	100

For each category of damaged houses unit costs for reconstruction or repair were estimated. In addition to the housing infrastructure, replacement or repair costs were calculated for household goods and perimeter fencing.

The total direct cost of reconstruction and repair of housing was estimated as US$ 7,571,000. The large majority of these homes did not carry insurance. No indirect costs were identified for the sector. (See Table 1).

b) Health

Due to opportune forecasts and warnings no lives were lost and no major injuries were suffered by the population in Anguilla during and after the hurricane.

Health facilities in the island —including the new main hospital, the old hospital building and several clinics— were only slightly damaged due to the strong winds, partially losing roofs, ceilings and fencing. The rains that fell after the hurricane damaged some furniture and supplies that were under the damaged roofs A mobile dental care unit was destroyed by the winds.

A clinic was found to be located in the immediate vicinity of a flood-prone area; it should be moved to a safer location in the near future, before the next hurricane season.

Mosquitoes proliferated in certain areas of the island due to the pooling of rain waters and the spillover of large waves near the coast. This posed the possibility of mosquito-carried diseases such as dengue and others. Spraying of these areas was initiated promptly.

The direct damages to infrastructure, equipment and supplies of the health sector have been estimated at US$ 218,000. Damages to infrastructure were insured so that net direct losses will be lower. Indirect losses that include the relocation of a clinic and the mosquito-control campaign amount to an estimated US$ 90,000 Total damages in the health sector reach US$ 308,000 (See Table 1).

c) Education

Existing school infrastructure sustained damages of the same nature as housing units, although no building was completely destroyed. Roof covers and structures, ceilings, window panels, and outside fencing were either destroyed or damaged. Painting of walls, furniture, books and other teaching materials were damaged or destroyed by the rains.

Some schools were temporarily used as shelters during the critical hours of the hurricane and suffered minor damages as a result. Classes have been resumed using alternative classrooms while repairs are being undertaken.

Direct damages to the education sector are estimated at US$ 506,000. These damages were not covered by insurance The indirect costs of repairing and painting the school buildings due to

damages caused by uses as hurricane shelters were estimated as US$ 17,000. Total damages to the sector were thus US$ 523,000. (See Table 1.)

Table 1

DAMAGE AND LOSSES IN THE SOCIAL SECTORS

(Thousands of US Dollars)

Sector and subsector	Estimated damages and losses		
	Total	Direct	Indirect
Total	8,402	8,295	107
Housing	7,571	7,571	-
Total reconstruction (30 units)	1,881	1,881	
Major repairs (155 units)	3,550	3,550	
Minor repairs (270 units)	2,140	2,140	
Health	308	218	90
Repair of hospitals	142	142	
Mobile dental care unit	50	50	
Repair of clinics & material	26	26	
Relocation of clinic	40	-	40
Mosquito control programme	50	-	50
Education	523	506	17
Repair of 7 school buildings	420	403	17
Replacement of furniture, equipment and books	103	103	

Source: ECLAC, on the basis of official figures and direct field observations and estimates.

3. Infrastructure

Infrastructure was damaged in the subsectors of water supply and sanitation, electricity generation and distribution, ports and airports, communications, and roads. In some cases, there occurred losses of revenue in the utilities that render these services. Losses were partially covered by insurance.

a) Water supply and waste water disposal

Water supply systems in the island cover about eighty per cent of the island's population; the remainder collect and store rain waters and are also served through communal water connections. Most major hotels and resorts have individual water supply systems.

Waste water disposal is done mainly through septic tanks. Hotels and resorts have their own treatment plants and use treated sewage discharge to irrigate gardens.

The hurricane did not damage the wells or pumps that provide water to the system, nor were the transmission and distribution lines damaged; hotel water supply systems suffered only minor damages. However, since electrical power to run the pumps was unavailable for a relatively long time period, water service was interrupted. No water was supplied during the month of September and the aqueduct operated at half its capacity during October. It is expected that the system will function at between 85 to 90 per cent of full capacity through March of 1996 due to the reduced demand from many commercial clients.

Some individual home septic tanks were flooded and overflowed due to the heavier than normal rains that accompanied the hurricane and may not have been cleaned properly. However, no major health problems have resulted.

The subsector suffered indirect losses, from projected lost revenues, that amount to an estimated US$ 41,000; no direct losses were identified. (See Table 2).

b) Electricity

Electrical power is supplied by the Anguilla Electricity Company (ANGLEC), a privately owned utility. Winds of the hurricane and its accompanying rains damaged buildings and ancillary equipment at the power plant, but the main damage was sustained by the transmission and distribution grids where 75 per cent of the lines were downed, and by residential connections.

While power transmission and distribution capacity was restored by the utility within a month of the disaster, the latter's revenues have been diminished due to decreased power demand given the absence of economic activity mainly in the tourism sector. The level of pre-disaster sales is not expected to be recovered until the end of August 1996.

It has been estimated that direct damages to infrastructure and equipment, transmission and distribution grids and in-house connections amount to US$ 1,817,000. Net direct losses will be lower, however, since the infrastructure that was damaged or destroyed was insured. The amount of revenues lost during the recovery period already mentioned is estimated as US$ 1,609,000. Thus, total gross losses in the subsector were estimated at US$ 3,426,000. (See Table 2 again).

c) Ports and airports

The building and a hangar at the international airport were partially damaged. The night lighting system at the landing strip was destroyed and landing of planes at night was interrupted for two months. The asphalt cover of the landing strip was also damaged due to the long period in which it was covered by rain waters.

At the main cargo port of the island, the pier and the jetty suffered minor damages from the action of the waves. The main Customs warehouse lost its roof and steel doors due to wind action, and goods in transit were damaged by rain.

Several cargo and passenger transport boats were destroyed or rendered useless and beached by the sea waves. The boats that were beached near the main port will have to be removed using heavy machinery.

The waves also produced silting of the jetty area and reduced the available depth for docking of ships. Dredging will have to be undertaken in order to restore the port to pre-disaster conditions.

The total amount of direct damages to infrastructure and boats in this subsector is estimated at US$ 1,285,000; however, there will be some recovery of these losses through insurance. The indirect loss imposed by the need to dredge the port area and remove beached boats is estimated at US$ 180,000 more. The total amount of losses for the subsector is therefore US$ 1,465,000 (See Table 2).

d) Communications

The subsector losses caused by the disaster were sustained by the telecommunications system of Cable and Wireless —a privately owned enterprise—, two radio broadcasting companies (Radio Anguilla and Caribbean Beacon), and the local cable television company.

Physical damages in the case of Cable and Wireless were caused by the wind and rains on the physical plant, premises and ancillary equipment, the aerial telephone lines (which share the same poles with the electric utility), and in home connections. No buried telephone cables were affected. Repairs to the telephone system have nearly been completed, but a reduced quality in service is expected to last through March 1996. Revenues have decreased and will continue below normal levels throughout the aforementioned period.

Satellite dishes, an FM antenna, a transmission tower and guy wires, buildings, fencing and equipment of both radio stations were destroyed or damaged by the wind. Again due to absence of electrical power, both radio companies were off the air for about three weeks. Normal operational levels are expected to be resumed by year end.

The cable television company also suffered damages on its aerial cable distribution network, which share the same poles with the electricity and telephone systems. At the time of the writing of this report, the cable television service was only partially restored. It is expected that replacement

of the cable network will be completed by year end. Revenues of the company have been reduced significantly and are expected to take until the first quarter of 1996 to recover pre-disaster levels.

Total direct damages to the subsector are estimated at US$ 4,775,000 although they will be partially offset by insurance payments. Lost revenues are calculated at US$ 1,765,000. Total gross losses for the subsector will reach US$ 6,540,000. (See Table 2.)

e) Roads

The long time that paved roads were under rain water damaged their asphalt cover a total length of 15 kilometers; unpaved roads also received some erosion damages.

The cost of repaving the above mentioned roads is estimated at US$ 1.4 million. Earth moving machinery for an amount of US$ 550,000 will be required to repair other unpaved roads. No estimate has been made of increased operational costs of vehicles due to use of the damaged roads, but they are considered to be small since the time for making road repairs is relatively short. The total direct damages for the subsector are thus estimated at US$ 1,950,000. (See Table 2.)

4. Production and services sectors

If the social sectors and infrastructure suffered damages, the production and services sectors sustained effects of a more grave nature, especially in the tourism activities that are the backbone of Anguilla's economy.

a) Agriculture and livestock

The hurricane winds, rain and flying debris affected the agricultural sector and rural areas, damaging the crops which were just being planted and affecting poultry producers, livestock owners and backyard gardeners across the island. In addition, many types of shade and ornamental plants were destroyed, and palm and fruit trees were uprooted or partially damaged. Some infrastructure was also damaged or destroyed. Given the intensity of the disaster and the physical characteristics of the terrain, no part of the island was spared.

Physical infrastructure, including buildings of the public and private sector, suffered direct damages amounting to US$ 98,000.

Fruit trees that were destroyed or partially destroyed included papaws, mangoes, citrus, avocados, soursops, sugar apples, guinep, coconut palms, sapodilla and some banana plants cultivated in small-scale. Full recovery of their pre-disaster size and production levels may take at least two seasons. The direct losses of trees were valued at US$ 30,000 and the estimated indirect production losses at US$ 5,000.

Ornamental and shade trees and plants were lost, causing a direct loss valued at US$ 274,000.

Edible crops cultivated in the island for the 1995 season had already been harvested; the present year's production suffered little or no loss. Seeding had already begun for the next harvest, including cabbages, carrots, onions, pigeon peas, string beans, eggplants, sweet peppers, herbs, pumpkins and other cucurbitatae. This will result in a reduction of the 1996 crop and a corresponding increase in imports of these vegetables. These indirect losses in future agricultural production have been estimated as US$ 239,000.

The livestock sector —including poultry, pigs, rabbits, sheep and goats, bees and cattle— was the most affected. Infrastructure, animal stock, feed inventories and production were destroyed or damaged. Special reference is to be made of poultry production where the island was making strides to become self sufficient in egg and meat supply for the local market, tending to the needs of the tourist and hotel demand. Direct losses were estimated as US$ 345,000; indirect damages were valued at US$ 728,000.

Following the destruction of the hurricane, farmers have continued to suffer losses, not only in terms of revenues lost but sustaining damages associated to the actions of stray animals, such as sheep and goats. Winds have dispersed seeds creating a hard to control problem of weeds since there had been a long-standing campaign to avoid the abuse of herbicides islandwide. In addition, the increase of weeds has led to a loss of soil nutrients. The reduced stock of bees and birds will affect the normal patterns of pollination.

Total direct losses for the agriculture and livestock sector were valued at US$ 747,000. Indirect losses of production amounted to US$ 972,000. Total losses for the sector reached US$ 1,719,000. (See table 3).

b) Industry

Anguilla's industrial sector is confined to a narrow range of activities, linked to boat building and repairs, concrete processing for the construction sector, and some small cottage-level production of furniture and wood products for housing.

While minor damages were sustained by the infrastructure of the sector's industries, on balance the effects of Hurricane Luis were positive since there was no appreciable loss of equipment, machinery or stock.

In the immediate aftermath of the disaster, production was stopped due to the absence of power. After this initial set back, these industries are slightly increasing their activities. The reconstruction and repairs already underway will enable a prompt recovery of the quarrying and concrete processing activities, and demands on local wood manufactures is also to grow over the last couple of years low performance. The local boat industry is facing increasing demands for repairs and orders for new vessels will be on stream, as insurances are collected and assistance is channelled to the fishermen affected.

Direct damages to this sector were estimated at US$ 125,000 and net indirect losses at US$ 40,000, so that total sector losses amount to US$ 165,000. Insurance recoveries are estimated to amount US$ 50,000. (See Table 3).

c) Fishery

Fishing activities in Anguilla are mostly of an artisan nature and aim to supply the local hotel and restaurant markets, with a minimal proportion of produce being exported.

Around 46 per cent of the total number of fishermen that operate commercially in Anguilla suffered the loss of their boats, engines and apparel, as well as small infrastructure they had near the mooring areas. The sea currents dislodged and sunk a vast amount of the fishing traps and buoys used by the fishermen.

Due to the losses in boats and gear, production was severely disrupted for the first two months and will take several more months, well into 1996, to recover to pre-disaster levels. In addition to the fishermen's production losses for two months and the reduction in catch that will ensue for a more extended period, they have faced lower prices in the local market due to the marked decrease in demand, in particular in the case of lobster.

Finally, the ecological conditions of the reefs, seaweed, mangroves and ponds has suffered damages that will alter the fish, conch and lobster growing areas. Most of the damage is of a temporary nature but will affect for some time the breeding and natural development of the resources and may alter the actual location of fishing areas. This may entail some drop in catch and increase the cost of fishing since boats will have to look for new grounds.

Direct damages to the sector were estimated at US$ 775,000; indirect losses due to reduced catches were valued at US$ 485,000. Total gross losses were estimated at US$ 1,260,000. The sector's fishermen had only limited insurance coverage. (See Table 3.)

d) Wholesale and retail commerce

Commercial activity in the island was virtually paralyzed as an immediate consequence of the hurricane. After emergency repairs had been completed, commercial activities resumed their pace with varied intensities.

On the one hand retail outlets and commerce linked to tourism —such as taxi transportation, small shops and beach services— have experienced a continued downfall of their business. The sharp drop of day visitors has seriously affected their survival. In the case of taxi owners this entails financial consequences since most of them have modern units that are not paid in full. Attention to this matter is required to avoid default and losses in the local banking sector.

On the other hand, wholesale businesses related to the provision of construction materials and gear for the necessary repairs have experienced —after the emergency period— a surge in their

business. This is associated with the pressure experienced by the hotels and restaurants to come back in at least partial operation in time for the high tourist season that begins at the end of the year.

No damages were suffered in the area of international business and financial services and its prospects seem to be of a continued positive nature as the government recently modified its legislation in order to attract offshore operations.

The quick response given by insurance companies to pay claims and the prompt and efficient actions taken by local businessmen —namely the hoteliers and restaurant operators— in the wake of the disaster can be projected as a positive sign that may attract foreign investors to partake in the local initiatives aimed at a diversification of the local economic base.

It was estimated that the infrastructure of the sector suffered direct damages amounting to US$ 300,000, and indirect losses of US$ 200,000 more. The total damages to the sector were thus valued at US$ 500,000. (See Table 3.)

e) Tourism

Anguilla is considered as one of the most up-scale tourism destinations in the Caribbean.

The total number of visitors per year reached 125,780 in 1994, after growing steadily at an annual rate of 8.4 per cent in the past 10 years. Total expenditure by tourists in the island reached US$ 51 million last year, which figure is equivalent to 80 per cent of Anguilla's gross domestic product (GDP).

Of the total number of visitors, 65 per cent are one-day tourists coming from St.Martin/Sint Maarten under "package touring" arrangements; the remaining 35 per cent stay an average of slightly over 9 days in the island's resorts. Expenditures by day-tourists in 1994 amounted US$ 3.5 million; expenditures by tourists that stay longer have a seasonal variation, with an expenditure of US$ 25.8 million in the winter months and of US$ 21.7 million during the summer. These expenditures are incurred not only in hotels and inns but in restaurants and shops as well.

There are a total 951 rooms available in the island, located in 14 hotels, 26 villas and apartment complexes, 14 inns and 5 guests houses.

The hurricane winds affected the hotel infrastructure in much the same manner as other government and private owned buildings, damaging or destroying roofs, window panes, fences, etc. The storm surge and sea waves made the most damage since they eroded the beaches, exposing rocks and depositing sand into the sea bed, and even undermining building footings, parts of which collapsed. Due to damages to electrical, telephone and cable television networks, these services were interrupted at the hotels that were open at the time for periods as described for other buildings and facilities in the island.

These damages occurred, however, at a time when there is a seasonal low of tourists arrivals. Repairs to buildings and services at the hotels are proceeding at a fast pace, and it is estimated that

nearly full room capacity will be restored by year end. Damage to beaches are a different matter, however, since —as will be indicated in the section on damages to the environment— their width has been reduced significantly and thus the main tourist attraction of Anguilla has been affected. While it is expected that the beaches and dunes will recover naturally within a 6-month to 2-year period, some hotel owners are undertaken artificial rebuilding of their beaches through dredging of the sea beds adjacent to their hotels or through importing sand from nearby sand mines.

The hotel owners are trying to reduce their losses to the minimum by restoring their facilities as much as possible before mid-December, when the maximum number of tourists begin their arrival. In the meantime, occupation is at a minimum level due both to the normal descent in demand in the period September to November and to the fact that repairs are going at full speed. International tour operators have been invited to visit the island in order to get acquainted with the reconstruction process and be in position to advertise the availability of facilities for the forthcoming winter season.

The one-day tourists have ceased to arrive altogether due to their direct relation to the situation of tourism to St.Martin/Sint Maarten. The resumption of these visits depends on factors beyond the control of Anguilla, and may require joint action with the other islands' authorities.

Restaurants and other related shops were similarly damaged in their infrastructure, and repairs are also underway. Some of them will have to be relocated farther from the sea in view of the modification of the beach. Those that are already operational are having lowered income due to the marked absence of the day-tourists.

There are other groups of people affected by the reduction in tourism activity caused by the disaster, including taxi drivers and others that cater to day-tourists demands. They are undergoing a period of nearly zero revenue whose end is uncertain.

Using information provided by insurance companies, the Anguilla Tourism Board, and selected hotel and restaurant owners and operators, as well as the mission's direct field observations, an estimate of damages and losses has been made for the sector. Direct damages to infrastructure of hotels and restaurants were estimated to be US$ 25,050,000. Indirect costs that include relocation of some infrastructure, estimated losses of revenue, and the cost of rebuilding sand beaches projects underway, were estimated at US$ 4,400,000. (See Table 3.)

Two points deserve special mention, however. First, that both direct infrastructure damages and revenue losses are partially covered by insurance, whether locally or abroad, so that the net effect on the hotel industry will not be as bad as the figures would indicate. Second, that the cost of rebuilding sand beaches and dunes may increase in the future if the rate of natural regeneration of the beaches is found to be slow.

Table 3

DAMAGES AND LOSSES IN PRODUCTION AND SERVICES SECTORS

(Thousands of US Dollars)

Sector and subsector	Estimated damages and losses			Insurance recovery */
	Total	Direct	Indirect	
Total	33,094	26,997	6,097	19,165
Agriculture & livestock	1,719	747	972	75
Buildings	98	98		
Fruit plants and produce	35	30	5	
Ornamental plants	274	274		
Vegetable production	239	-	239	
Livestock	1,073	345	728	
Fishery	1,260	775	485	30
Boats and engines	139	139		
Fishing traps and buoys	606	606		
Other damages	30	30		
Catch reduction	485	-	485	
Industry	165	125	40	50
Infrastructure	125	125		
Production, net loss	40	-	40	
Commerce	500	300	200	10
Buildings	300	300		
Revenues	200	-	200	
Tourism	29,450	25,050	4,400	19,000
Hotels	23,500	21,300	2,200	
Other accommodation	3,800	2,300	1,500	
Restaurants	2,150	1,450	700	

Source: ECLAC, on the basis of official and private figures, and direct estimates.
*/ When available.