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SUMMARY

Living conditions in Nicaragua and the country's economic development have once again felt the impact of an extraordinary and destructive natural phenomenon. The damage caused by hurricane Joan on this occasion compounds the after-effects, which have yet to be entirely overcome, of the earthquake which destroyed the city of Managua in 1972, of a number of droughts and floods that have occurred during the present decade, and of the damage resulting from the civil war that reached its climax in 1979.

The disaster caused by the hurricane in October came at a time when the Nicaraguan economy was showing signs of increasing weakness as it continued to undergo a semi-permanent crisis brought on, in part, by the marked deterioration of the external sector --which has been severely hurt by the economic blockade imposed by the United States since 1985-- and by the need, in recent years, to allocate to defence a large share of the country's scarce resources. Some of the characteristic features of this crisis are large external imbalances and acute fiscal deficits which have been met mainly through monetary issuing. These phenomena have been the underlying cause of serious distortions in the structure of relative prices, the intensification of inflationary pressures, and the fall of real wages.

These circumstances have made it necessary for the Government of Nicaragua to lower or postpone a number of the targets included in the programme adopted in 1979 whose aim was to establish a more equitable distribution of the benefits of development among the population.

In an effort to turn this situation around, in 1988 the government undertook economic reforms in combination with a stringent adjustment programme. Its purposes in doing so were to reduce the fiscal deficit in terms of the gross domestic product by cutting back the subsidy to production which was implicit in the negative interest rates, public investment and current expenditure, as well as to set a single exchange rate so that exports would become profitable once again and to correct existing distortions in the relative prices of products for domestic consumption vis-à-vis exports.

Although some progress was made (which was, however, accompanied by greater imbalances in other items), the results of the efforts being made to re-establish macroeconomic equilibria will only be evident in the medium term.

Furthermore, before the hurricane occurred, a decrease of imports of goods and services in real terms had been projected for 1988, along with a consequent sharp decline in domestic supply. A slowdown in the growth rate of all the component variables of overall demand was also expected. In addition,

a drop of around 7% in the gross domestic product was forecast, which would bring per capita income back down to its 1957 levels.

Although the number of casualties caused by the hurricane (148 dead, 100 missing and 184 injured) was extraordinarily low, thanks to the efficiency of the preventive measures undertaken and to the enormous capacity for social organization displayed by the country, the economic and social impacts have been truly disastrous. This is especially the case in the central Atlantic region and in some areas on the Pacific slope.

It is estimated that approximately 310 000 persons had to be evacuated from their homes and housed in temporary shelters to protect them from the wind, rains and floods and to await the re-establishment of minimum environmental health and hygiene conditions in the settlements that were destroyed or damaged. About 230 000 people in low-income peasant sectors saw their homes and working capital either destroyed or damaged. In all, a total of 2.8 million people were affected either directly or indirectly, including those who lost all or part of their crops and plantations, those who found themselves cut off in isolated areas and those who experienced some type of difficulty due to the damage done to means of transport.

The total damage is estimated at US\$840 million; this includes US\$524 million in damage to capital stock (62% of the total damage), US\$162 million (19%) to natural resources, and production losses of US\$154 million (19%).

The direct damage --which is calculated at US\$745 million-- includes the total or partial destruction of social infrastructure, especially housing (41% of the total); soil erosion and the devastation of extensive tracts of tropical forests (22%); the destruction or impairment of economic infrastructure, particularly transport facilities (20%); and damage to infrastructure and decreases in agricultural and industrial output (16%).

The indirect damage is estimated to amount to US\$95 million and corresponds to the greater expense involved in supplying health and housing services (45% of the total) and in carrying out emergency operations (37%), as well as to production losses and the income that will be forgone during the rehabilitation period.

In order to provide a better idea of what these figures mean, it should be noted that the losses in capital stock represented 10% of the entire country's accumulated stock and that the capital and production losses are equivalent to approximately 40% of the country's gross domestic product for 1988.*

The Nicaraguan economy has sustained heavy losses during the past 16 years, due to other natural disasters, armed conflicts and the trade blockade.

*/ Losses caused by the 1986 San Salvador earthquake represented about one-fourth of GDP; those of the Mexico City earthquake in 1985 --while four times as much-- represented only 2% of GDP.

The recent disaster will have a number of effects on the performance of the Nicaraguan economy in 1988. Firstly, it will increase by 2% the fall in the gross domestic product, thereby further reducing per capita income. Secondly, it will add to the already large fiscal deficit as a result of the expenditures made by the government in order to meet emergency requirements.

In 1989 and the following years, even though the recovery of some production activities and growth in the construction sector can be expected, public sector finances will deteriorate further due to the new investments required for rehabilitation and reconstruction, and the balance of payments will exhibit greater disequilibria as a result of the increased need for imports and the inevitable drop in exports. This will lead to a further speed-up of the trend towards hyperinflation which existed before the disaster.

The government will be forced to revise its goals as regards the re-establishment of macroeconomic equilibria. Moreover, it is clear that the country does not have the capacity, on its own, to carry out all of the necessary rehabilitation and reconstruction work while at the same time undertaking the long-term efforts required to achieve sustained development and to improve the living conditions of the population. The urgent need to undertake such rehabilitation and reconstruction work could make it necessary to postpone major economic and social development programmes which were underway or which were about to be initiated. This might well have social and political repercussions which an effort should be made to avoid.

This is all the more important in view of the fact that the people most affected by the disaster include about 62 000 low-income peasant families, who lost their subsistence crops and their very limited capital stocks and belongings and who are now faced with the task of rebuilding their highly fragile family-based economy.

All these circumstances make solidarity and co-operation on the part of the international community more necessary than ever if Nicaragua is to be able to cope with the problems caused by this latest disaster as well as to proceed with its efforts to bring about an adjustment and structural change.

Specific technical and economic co-operation project profiles (amounting to a total of approximately US\$500 million) which could be financed by the international community in order to help carry out the tasks of rehabilitation and reconstruction have been prepared. This assistance—which should be in addition to, rather than instead of, the aid now received by the country in connection with its regular development programmes—should include donations and soft-term loans. Furthermore, the donors should expedite their procedures for project evaluation and approval and make these processes more flexible in view of the urgency of the need for their assistance. Moreover, given the severe shortage of foreign exchange and the limited availability of some inputs, it should be possible to use the loans for the importation of such components.

I. INTRODUCTION

1. Background

a) General information

1. Natural disasters of various origins and severities frequently occur in the countries of Latin America and the Caribbean. In an average year, the damage caused by such natural disasters includes 5 600 deaths and an estimated US\$1.2 billion in material and production losses. These damages have an adverse impact on the population's living conditions and hinder the countries' efforts to achieve sustained economic growth.1/

2. In October 1988 a hurricane passed through Nicaraguan territory, causing considerable damage to the country's social and economic infrastructure, productive sectors and natural resources. In addition to its direct impact on the population (loss of life, the destruction and damage of housing and other social infrastructure, and a loss or decrease in family incomes and capital), this latest disaster had a very severe effect on the main macroeconomic variables at a time when the economy was undergoing an exacting adjustment and stabilization process aimed at bringing its imbalances under control. Worse still, the disaster compounded the negative repercussions of the armed conflict and trade embargo which have been beleaguering the country for a number of years.

3. Even under normal conditions of economic activity, it would have been difficult for Nicaragua to absorb the damage associated with this disaster. Given the current situation, the country is in need of special and generous co-operation from the international community in order to undertake the required rehabilitation and reconstruction work.2/

b) Purposes of this report

4. This report has been prepared at the express request of the Government of Nicaragua. Its aim is to help orient action by the international community towards co-operation in the stages of rehabilitation and reconstruction. To this end, the report identifies the social and economic sectors most severely affected by the disaster which are regarded as priority areas during the post-emergency period.

5. This identification of priority tasks or areas is based on a systematic quantitative assessment of all the direct and indirect damage caused by the disaster, as well as of its impact on the country's economic development and on the living conditions of the affected population.

6. In this connection, the report will include a series of rehabilitation and reconstruction project ideas and profiles which represent specific requirements for international co-operation. Later on, the government will prepare specific documents for each one of these project profiles.

c) The mission

7. The report covers the work carried out, in close co-operation with the Government of Nicaragua, by an interdisciplinary mission organized and directed by the Secretariat of the Economic Commission for Latin America and the Caribbean. The mission was carried out by experts in the various areas relating to the work at hand. The services of these experts, who had had experience with similar disasters, were made available by ECLAC itself and by other organizations of the United Nations system.

8. The mission was provided with valuable financial and logistical support by the United Nations Development Programme (UNDP) and benefitted from the direct participation of personnel from the United Nations Centre for Human Settlements (UNCHS), the Pan American Health Organization of the World Health Organization (PAHO/WHO) and the Joint ECLAC/FAO Agriculture Division. The mission also received valuable assistance from the office of the World Food Programme (WFP) in Nicaragua, as well as from experts working on national technical co-operation projects financed by UNDP.

9. The mission established contact and co-ordinated its activities with representatives, staff members and experts of a number of multilateral organizations, subregional integration bodies and bilateral co-operation institutions.

10. In order to carry out its assignment, between 2 and 15 November the mission held numerous meetings and consultations with national and regional offices associated with the affected sectors. It obtained the available information and documentation concerning conditions prior to the hurricane and its most direct repercussions. Field visits were undertaken in order to observe the effects of this natural disaster first hand and to estimate the extent of the damage.

11. This report is, therefore, the result of an independent assessment, made as objectively as possible, of the effects of the disaster.

2. Description of the phenomenon and its overall effects

12. The natural disaster which occurred in Nicaragua in October 1988 was caused by the tenth hurricane of the Caribbean season.^{3/} The meteor formed as a low-pressure area off the north-western coast of Africa. From there, it moved in the direction of the American continent at a speed of nearly

15 kilometres per hour; it continued to build to the point where, on 13 October, it was designated as a tropical storm and given the name of Joan.

13. As it moved west, Joan passed over the northern coast of Venezuela and Colombia, where it was the cause of considerable casualties and damage. During the first hour of 18 October (Greenwich Mean Time) Joan became a full hurricane, reaching a maximum sustained wind velocity of 178 kilometres per hour ^{4/} (see map 1).

14. Between 18 and 21 October, hurricane Joan continued to move slowly westward, causing heavy rains in Panama and Costa Rica. Shortly before 4:00 AM on 22 October (local time), it touched land in Nicaragua at Bluefields, after having crossed over Corn Island, with a maximum sustained wind velocity of 217 kilometres per hour and gusts of up to 250.

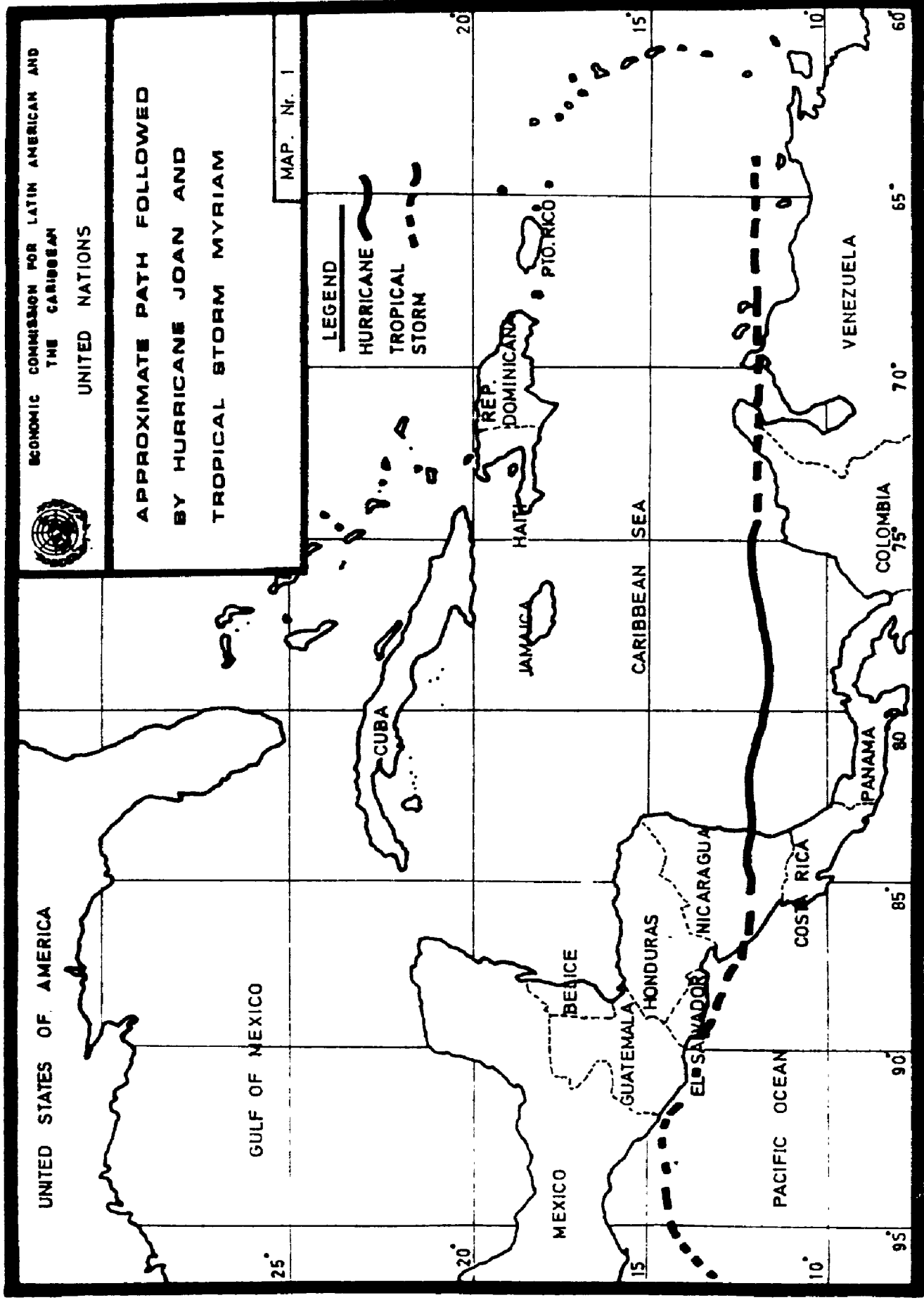
15. The hurricane then continued westward along the 12th parallel, with its wind intensity diminishing as it moved away from the ocean which had fed it and came up against the Amerrisque mountain range. It crossed the continental divide after having subsided to the intensity of a tropical storm once again (at which point it was re-baptized as Myriam), moved over Lake Nicaragua and then passed to the south of Managua, moving out into the Pacific Ocean during the early morning hours of 23 October.

16. There, the storm gathered strength once again and began to travel towards the north-east, passing off the coasts of El Salvador and Guatemala, where it also caused some damage. On 26 October, near the Mexican coast, its winds slowed, turning the storm into what is classified as a tropical depression; it then continued its advance, reaching storm strength again near the end of the month. After that it gradually weakened until it finally died out.^{5/}

17. The hurricane had different types of effects on Nicaragua. Firstly, its strong winds destroyed the localities of Corn Island and Bluefields, as well as vast stretches of forests located inland on the Atlantic slope. Although they slowed gradually, the winds also severely eroded the soil of the Amerrisque range on both sides of the continental divide. In addition, the heavy rains (which in some places amounted to over 400 millimetres in 24 hours) caused by the hurricane mixed with sediments and felled trees, causing rivers to overflow their banks and flooding a number of cities (such as El Rama) and extensive tracts of farmland, which resulted in the destruction of infrastructure and the flooding of land, plantations and crops.

18. On the Pacific slope, most of the damage was caused by flash floods, although the winds also occasioned some losses. Moreover, high tides combined with the rise in river levels to increase the flooding.

19. Although Joan is the only hurricane in recent history to have traversed Nicaraguan territory with such strong winds, available statistics indicate that it is not a unique or isolated event, and it would therefore be advisable to undertake preventive action in the future.^{6/}



NOTE: The boundaries shown on this map do not imply official endorsement or acceptance by the United Nations.

3. Action taken to deal with the emergency

20. A number of effective measures were taken in Nicaragua to protect the population beginning several days before the hurricane reached the country.

21. Starting on 18 October, when staff members of the National Meteorological Service realized that the storm might turn in the direction of Nicaragua, various civil defence schemes were put into action. The following day, authorities began to evacuate the population of Bluefields and other localities in the Atlantic zone to more secure sites inland. Measures were taken to safeguard the equipment, machinery and tools belonging to the fishermen of the area, and all available vessels were used to transport the people to less vulnerable locations. In total, some 300 000 people were evacuated and provided with temporary shelter in various public buildings.

22. At the same time, a number of steps were taken to safeguard and assemble transport vehicles and the fishing fleet, to protect port facilities and the storage infrastructure for food and other basic supplies, to suspend civilian flights and to protect aircraft, etc.

23. These preparations were successful, inasmuch as when the hurricane hit on 22 October, the population and a great deal of property were protected. The loss of life was relatively small thanks to this foresight, and the damage to equipment and perishable materials was limited.

24. After the storm moved away from Nicaraguan territory, operations were begun to rescue people in isolated areas, as well as their personal effects and household goods whenever feasible. Community-based social organizations were very effective in helping to carry out these activities, and a very strong spirit of solidarity characterized the effort.

25. The authorities acted decisively in carrying out the tasks required to provide food and minimum services to the population housed in temporary shelters and to restore basic services to the population centres affected by the storm. Brigades were organized to clear away and remove the rubble and to re-open access routes to the zones that had been cut off.

26. The government appealed to the international community to co-operate in this emergency effort. To this end, it established direct contact with the ambassadors and representatives of countries with which it maintains bilateral relations, as well as with the United Nations.

27. Subsequently, the evacuees began to be returned to their homes, and an emergency programme was initiated to restore sanitary conditions. Assistance has been provided for the most essential repairs to housing, and enough food has been supplied to permit the people to subsist for several weeks.

28. This has been done using the government's own resources for the most part, along with some international assistance which has reached the country. As of the end of October, such aid amounted to 2 300 tons of provisions and medicines, together with a small amount of cash contributions. By 4 November, 63% of this humanitarian assistance had been distributed; the remainder was

being catalogued for its subsequent distribution to the most seriously affected zones.

29. It is therefore clear that on this occasion assistance has been provided in a highly effective manner to the Nicaraguan population both before and after the disaster and that the limited international aid which has been made available to the country has been distributed rapidly and efficiently. Nevertheless, a great deal still needs to be done in order to re-establish a minimum of normality in the areas that were most severely affected by the hurricane.