

UNITED NATIONS
ECONOMIC COMMISSION
FOR LATIN AMERICA
AND THE CARIBBEAN - ECLAC



Distr.
GENERAL
LC/G.1367
23 October 1985
ENGLISH
ORIGINAL: SPANISH



DAMAGE CAUSED BY THE MEXICAN EARTHQUAKE AND ITS REPERCUSSIONS
UPON THE COUNTRY'S ECONOMY



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INTRODUCTION

Two major earthquakes occurred on 19 and 20 September 1985 causing serious damage and loss throughout a part of Mexico, particularly in the metropolitan area of the Federal District. The whole world was shocked by the disaster, which in turn motivated an intensive co-operation and solidarity effort with Mexico from the international community. This led to the United Nations General Assembly adopting resolution A/40/L.1, passed on 24 September, in which the member countries unanimously expressed their solidarity and support to the Mexican Government and people and requested "the Secretary-General to mobilize resources to contribute to the relief and reconstruction task undertaken by the Government of Mexico", and in addition called upon "all States to contribute generously to those relief and reconstruction efforts in the affected areas and, to the extent possible, to channel their assistance through the United Nations system". Finally, the General Assembly requested the Secretary-General to "co-ordinate the multilateral assistance and, in consultation with the Government of Mexico, to identify the emergency and medium-term and long-term needs in order to contribute to the reconstruction of the affected areas".

The Secretariat of the Economic Commission for Latin America and the Caribbean (ECLAC) has prepared the present report in close collaboration with the Mexican authorities as a means of illustrating to the member governments of the General Assembly the characteristics, extent and repercussions of the disaster upon the Mexican economy and society. It sets out a description of the disaster, as well as a report of the initial actions undertaken by the authorities (chapter I); an extremely preliminary estimate of losses, in terms of human life and material damage; and identifies the most seriously affected activities and areas (chapter II). It also provides an analysis of the probable repercussions of the disaster upon the trends which already marked the evolution of the Mexican economy (chapters III and IV), and provides some observations as to the way in which the international community might provide help to Mexico in the reconstruction efforts (chapter V). In addition, an annex sets out some preliminary thoughts regarding reconstruction activities.

No precise estimate of the cost of material damage exists so recently after the earthquake. Nevertheless, the Mexican authorities have made exceptional efforts to draw up an inventory of losses and estimate the damage. These official figures, which will no doubt be updated as time passes, appear in this report. In this respect, the Secretariat considered it better to submit a timely report based on approximations, than to produce detailed estimates, whose precise calculation would require several weeks or even months. In addition, it is worth noting that the main purpose of this report is to consider the repercussions of the earthquakes and their sequels upon the evolution of the Mexican economy. For this purpose, a rough estimate of the damages suffices.

/It should

It should also be pointed out that the analysis relating to the evolution of the Mexican economy in no way claims to be complete and detailed --this exercise is provided in other documents--,1/ but limits itself to point out the salient aspects which make it possible to understand how the sequels of the disaster will affect some key variables of economic policy, and how the reconstruction effect could affect economic trends.

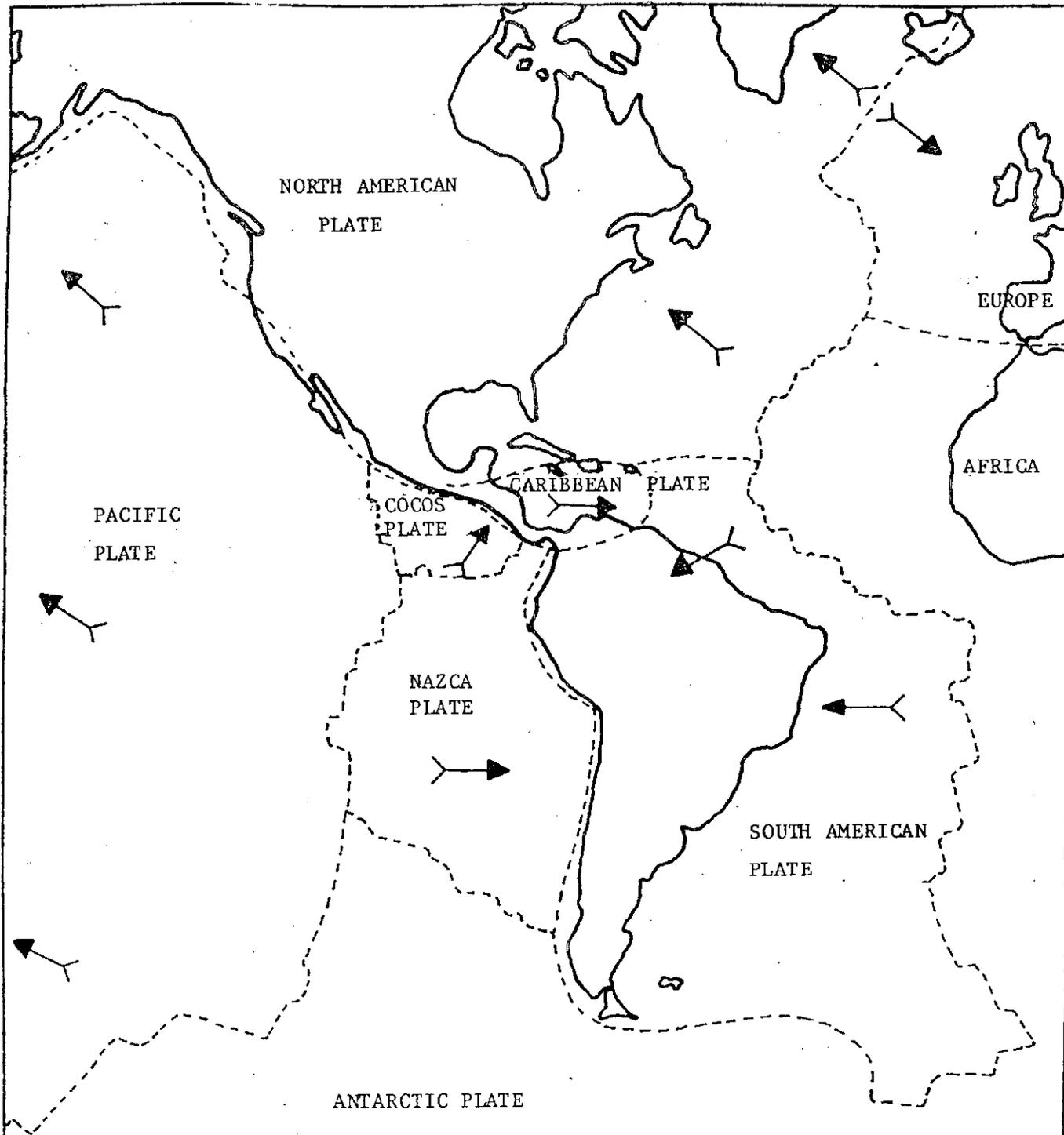
Finally, the Secretariat would like to express its thanks for the assistance received from the Mexican authorities, and in particular from the Ministries of Finance and Public Credit, Programming and Budget, Urban Development and Ecology and the Federal District Department.

/1. THE

I. THE DISASTER AND THE ACTION TAKEN IMMEDIATELY THEREAFTER

1. An explanation of the origins of the disaster which hit Mexico is provided by the relatively recent theory of plate tectonics, according to which the earth's lithosphere is made up of about one dozen plates moving in different directions; 2/ some are diverging, others are converging. In the specific case of Mexico and part of Central America, the Cocos Plate is moving towards, and subducting into, the North American Plate (see figure 1).
2. The interaction between these two plates had generated a great deal of accumulated energy which was released in the two seisms of 19 and 20 September 1985. These seisms, which were strong enough to be classified as major earthquakes, originated at a point approximately 400 kilometres from the Federal District on the coast of the State of Guerrero, very near the mouth of the Balsas river (see figure 2).
3. The first earthquake occurred at 7:18 a.m. (local time) on 19 September 1985 at latitude 17.9° N. and longitude 102.5° W. The second took place at 7:38 p.m. the following day at a point to the south-east of the first epicentre. Numerous aftershocks of sufficient strength to be felt without the aid of instruments have subsequently occurred.
4. The scientific community was not surprised by the earthquake. Special facilities with instruments for accurately measuring the characteristics of seismic activity had been completed a year before the earthquake. Such activity was already expected at that time due to the long period during which no such movements had occurred along the subduction boundary of these two plates. What did surprise scientists, however, was the violence of the earthquake. These are amongst the best documented earthquakes in modern history and will surely yield information and experience that will be very useful in connection with the future of human settlements located in areas of high risk of seismic activity.
5. The earthquake of 19 September was of a magnitude of 7.8 (short waves, MS) and of 8.1 (long waves, MW) on the Richter scale, making it one of the strongest in the region in recent times. The second earthquake was of a magnitude of 7.3 (short waves) on the Richter scale and completed the rupture of the age-old bond between the plates. The amplitude of the waves sent out by the first earthquake was between three and five times greater than had been expected, and the reason for this is not yet thoroughly understood. A very preliminary analysis of the available information seems to indicate that the earthquake had virtually one single frequency (cycles of two seconds in duration), which unfortunately coincides with the resonance frequency of the earth's surface in the Valley of Mexico (which varies between 2 and 3 seconds); this had a devastating effect on buildings exhibiting certain characteristics. The earthquake was of a relatively long duration in the Federal District (between 2.5 and 3 minutes), but lasted only about one minute in areas closer to the epicentre.

/Figure 1



→ PLATE'S DIRECTION OF MOVEMENT

--- PLATE BOUNDARY

GENERAL TECTONIC MAP

OF THE AMERICAS

Figure 1

/Figure 2

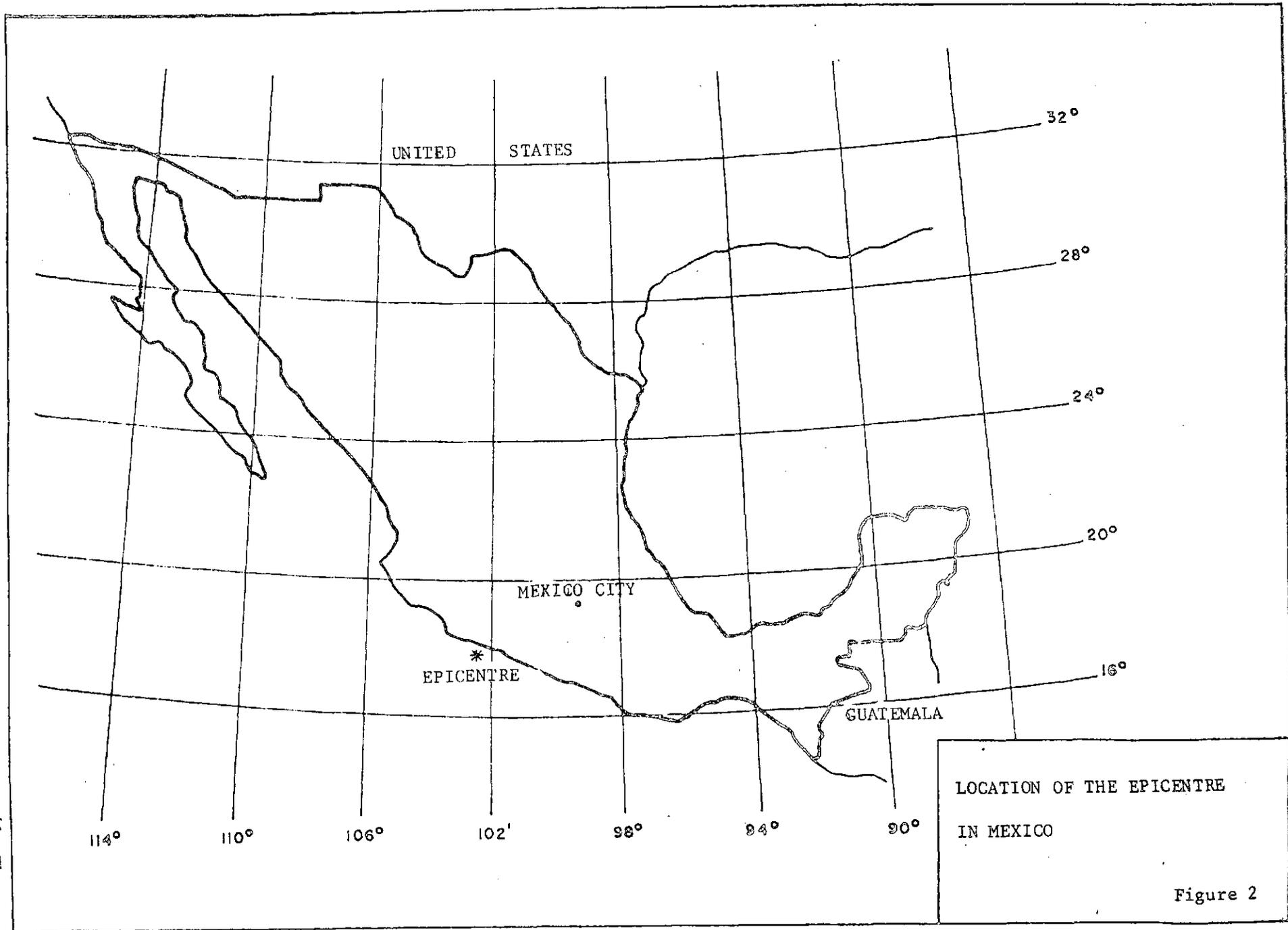


Figure 2

6. The first earthquake had severe effects over an area of nearly 800 000 square kilometres; its effects were more intense as the distance from the epicentre increased due to the longer correlative duration of the earthquake. Particularly in the Federal District, but in various locations in the states of México, Jalisco, Guerrero, Colima and Michoacán as well, many buildings collapsed and large structures were seriously damaged; this was followed by gas leaks and fires. The flow of electricity to the most seriously affected areas was automatically suspended. The collapse or damage of buildings and relay stations disrupted the telecommunications system, and all international telephone service, as well as service between the capital and the rest of the country, was interrupted. The pipelines carrying drinking water to the Federal District were cut in various places and there were numerous ruptures in the distribution networks. There were many fatalities and injuries. Although there was a great deal of property damage after the first earthquake, the situation became even more critical after the second earthquake, which occurred 36 hours later. Many buildings that had been weakened by the first quake either collapsed or suffered further damage. More people were trapped under the wreckage, giving rise to confusion and despair among the population.

7. There was damage over a wide area, but the most serious effects were concentrated in a relatively limited radius, especially in the Federal District. This was due to a combination of factors, including the following: resonance occurred in many buildings, especially those of between 8 and 15 stories, due to the earthquake's long duration; the resonance of the earth, especially in the central portion of the Valley of Mexico where lacustrine deposits are located, coincided with the frequency of the shock waves sent out by the earthquake; and the construction specifications for earthquake-resistant buildings were designed to withstand much weaker shocks than those which actually occurred.^{3/} In the hinterland, however, large structures and buildings were much less seriously damaged because the earthquake did not last as long (due to this area's greater proximity to the epicentre) and because the resonance of the earth's surface in the hinterland is different from that of the Federal District. For the same reason, the areas of the Federal District not located on lacustrine deposits suffered minimal damage.

8. Lastly, until all the information has been completely analysed, the possibility that the ongoing extraction of ground water in the Valley of Mexico has diminished the resonance of the earth to a frequency of less than two seconds in some areas, thereby bringing it even closer to the frequency of the earthquake's shock waves cannot entirely be ruled out. In any event, an analysis of the available information would seem to indicate that the most recent tremors correspond to a normal pattern of diminishing aftershocks that can be expected to last over a relatively long period of time.

9. Immediately after the first earthquake, the Government's response was rapid and co-ordinated. It directed that the rescue and relief plans of the Ministry of National Defence and the Ministry of the Navy for aiding the population in cases of disaster should be put into operation. Many private agencies devoted to providing emergency rescue and relief services also went into action. In addition, thousands of private citizens, especially young people, organized themselves spontaneously in a spirit of great solidarity in order to help with the rescue and relief work. The social media were highly effective in keeping the population informed of events.

10. Only a few hours after the disaster, the Government set up two emergency interministerial committees to deal with the situation. One committee, headed by the Department of the Federal District, was made responsible for dealing with the problems in the capital; the other, headed by the Department of the Interior, was put in charge of meeting the needs of the rest of the area affected by the earthquake. Through the Ministry of Finance and Public Credit and the Nacional Financiera, a national fund for reconstruction of the affected areas was also established.

11. The first actions taken focused on tending the wounded and rescuing people trapped under the rubble; in a parallel effort, improvised hospitals were set up which did as much as they could to take the place of the damaged health care infrastructure. The relevant State agencies undertook the job of reestablishing the basic services (water, electricity, communications) which had been interrupted. Schools which had escaped damage, as well as some parks and stadiums, were used as temporary shelters for the homeless. Tourists (especially those from other countries) who were staying in hotels that had been damaged were helped to relocate, reach other areas of the country and even to return to their places of origin.

12. In view of the damage to telecommunications infrastructure and service, information and communications services were provided free of charge via alternate routes or means, both public and private. Schools temporarily suspended classes in accordance with the instructions of the Ministry of Public Education to allow school buildings to be inspected and used as temporary shelters. The population was supplied with health care services free of charge in public and private facilities, and information about how to prevent disease and epidemics was provided.

13. The task of evaluating the extent and repercussions of the damage was begun a few days later. Task forces of civil servants, aided by members of the professional associations of engineers and architects, conducted a preliminary inspection of the affected areas, during which they identified those buildings that should be evacuated for safety reasons and those which would have to be demolished. The Government informed the international community of the extent of the tragedy and accepted the assistance that was forthcoming from many public and private sources, especially in meeting emergency needs. A generous flow of international co-operation was rapidly channelled to the country. More than 4 000 tons of aid (medicines, clothing, shelter, medical and rescue equipment, and even demolition equipment) was received from over 30 countries.

14. As part of this international mobilization, the United Nations Disaster Relief Co-ordinator immediately flew to Mexico in order to collaborate with the Government, along with a team of specialists, in assessing the country's needs for external assistance in carrying out the emergency work. The other agencies of the system also co-operated in emergency tasks within their respective fields of specialization. On 24 September, the United Nations General Assembly adopted the resolution referred to earlier (A/40/L.1) which, in addition to expressing the States Members' sorrow and their solidarity with the Government and people of Mexico, called for increased assistance and requested the Secretary General to channel and co-ordinate multilateral assistance and to collaborate with the Government in determining the country's reconstruction needs.

II. ESTIMATES OF THE EXTENT AND SCOPE OF THE DAMAGE

15. As the entire world learned from the mass media's extensive news reports, the earthquakes in Mexico on 19 and 20 September 1985 caused a tremendous amount of property damage, especially in one zone of the Mexico City metropolitan area. Multiple dwellings and office buildings of between 8 and 15 stories, hotels, hospitals and schools either collapsed or were rendered unusable. Taking only large structures into consideration, the official count at the time of writing indicates that approximately 3 300 buildings were damaged, only a small percentage of which --unfortunately-- appear to have been insured. A preliminary estimate of the amount of damage caused by the earthquakes is presented below. Since this report is being written only a few days after the disaster, it should be stressed that the basic information used in its preparation is incomplete and, in some cases, contradictory. The estimates given here should therefore be regarded as being of an extremely preliminary nature; their sole purpose is to provide an approximate idea of the extent of the damage in monetary terms. A more precise estimate cannot be made until the authorities have completed the field surveys which are presently underway.

16. The basic information used in preparing these preliminary estimates has primarily been obtained from authorized government sources; these data have been supplemented by on-site observations made by representatives of the ECLAC Secretariat. It was necessary to base many of the estimates on the number of destroyed units by assigning them a unit replacement cost. Some of the damage is impossible to quantify because it involves priceless murals and historical and archeological monuments.

17. The figures which appear in this report refer to actual replacement costs. Such costs were estimated in terms of Mexican pesos and were then converted to dollars on the basis of a weighted exchange rate of 320 Mexican pesos to the dollar.^{4/}

1. Population affected

18. More than 20 million people were affected either directly or indirectly by the earthquakes. It should be noted that the population of the Mexico City metropolitan area ^{5/} totals 17 million inhabitants, making this one of the most populated urban centres in the world. Official estimates, which would appear to be conservative, place the number of fatalities at nearly 6 000 in the Federal District (which accounts for over 95% of the total) and in various locations in the country's hinterland. In addition, roughly 2 000 people are missing and may be trapped under the rubble of collapsed or damaged buildings. The number of wounded who received care at medical centres amounts to nearly 30 000. The reason for the relatively few casualties, considering the magnitude of the disaster and the size of the population involved, may be that the first earthquake --which was by far the stronger of the two-- occurred at a time when most of the population had still not arrived at their jobs or schools. In total, it is estimated that more than 150 000 people suffered serious losses as a direct result of the earthquakes, 30 000 of whom took refuge in temporary shelters provided by the authorities.

/2. Social

2. Social sectors

19. The country's social sectors were seriously affected by the earthquake due to the substantial damage caused to housing, health centres and educational institutions. The population is also faced with the at least temporary loss of jobs and income, along with the resulting decline in the living conditions of a large number of people, especially in the Federal District. In addition to financial costs of this type, there are intangible costs, such as the collective and individual traumas caused by events of this nature. For example, the destruction of people's dwellings constitutes a loss that involves a number of different dimensions, since when people are taken out of their natural habitat and must, as a result, undergo an entire process of social readaptation to new housing conditions, their customs may be changed inasmuch as long-standing residence in a given area gives rise to habits and values which are idiosyncratic to a given neighbourhood. Perhaps the most typical example in the case of Mexico City would be the barrio of Tepito and other similar neighbourhoods which are the "pride" of their inhabitants.

a) The housing sector

20. As is also true with respect to the other social sectors, housing damage was mainly concentrated in the central zone of the Federal District and, to a lesser degree, in certain locations in the hinterland. Most of the buildings which collapsed were multiple dwellings and the families living in them had to be evacuated so that these structures could be demolished; other multiple and one-family dwellings were damaged to varying degrees. Generally speaking, the dwellings that were destroyed corresponded to middle- and low-income population. The marginal neighbourhoods in the metropolitan area were not directly affected, although they did suffer indirectly from the earthquakes' effect on their water and electricity supplies. In the Federal District, around 30 000 dwellings were totally destroyed and will have to be demolished while another 60 000, approximately, were damaged.^{6/} About 3 600 more dwellings were destroyed and another 5 000 were damaged in various locations in the hinterland. All the furnishings were lost in the buildings which totally collapsed and only a portion of the furnishings could be recovered from buildings that were evacuated prior to their demolition. These losses will add to the existing housing deficit before the disaster, which official sources estimated at around three million units.

21. The actual replacement cost of the buildings that were destroyed is estimated at 158.5 billion pesos; the cost of repairing the damaged units is placed at 21.8 billion pesos. Finally, the value of the furnishings that were lost is estimated at an additional 26.4 billion pesos. Total losses for the housing sector would therefore amount to 180.3 billion pesos. This figure does not include the value of the building sites.

22. The above estimates are based on the average characteristics and construction costs of low-cost housing. In the low-income areas that were seriously damaged (large old houses in the city's downtown area and housing developments built by the State), it is common to find up to 15 dwellings in an area of 200 m², whereas the middle-income population lives in apartments of more than 100 m² per family unit.

The losses were estimated on the basis of an average of 70 m² of floor space and a cost of 50 000 pesos per m². With respect to partial damages, the cost of repairs was assumed to be equivalent to 10% of the total replacement cost. The value of furnishing losses was calculated at 20% of the value of the destroyed dwellings.

b) The health sector

23. The health sector was one of the most severely affected by the disaster. A large percentage of second-level medical care capacity (hospitals) was lost, and a very large number of medical and support personnel were killed. In the Federal District, 500 buildings corresponding to different health-sector institutions were damaged to varying degrees; nine of them were completely destroyed, and hospital capacity was decreased by 5 000 beds (30% of the total). In this connection, it should be noted that Mexico City's medical facilities (among the best in Latin America) were concentrated within a radius of about 3 kilometers and had a large number of beds per hospital./ Approximately 180 clinics (12% of the total) were also damaged and some mobile medical care units were lost. Some of the special medical equipment and furnishings have been recovered from the buildings that have partially collapsed and those that will have to be demolished. In the hinterland, clinics/hospitals were damaged in at least five locations but not to an extent that prevents them from functioning. Two hospitals that were under construction suffered structural damages, but it has not yet been possible to evaluate their extent. The sector's losses of fixed assets, including equipment and furnishings that were destroyed or damaged, is estimated at 177 billion pesos.

24. In calculating the above figure, a unit cost of 21 million pesos per hospital bed was used for infrastructure, plus an additional 19.4 million pesos per bed for equipment and furnishings; a total of 25 billion pesos was subtracted from that amount to account for furnishings and equipment that were recovered.

25. Following the earthquakes, the Ministry of Health and other institutions of the sector set up a total of nearly 150 shelters where approximately 30 000 people received emergency medical care. An epidemiological monitoring programme was begun, recommendations were made regarding the handling and consumption of water, health and safety assistance was supplied to companies and guidelines were laid down with respect to immunizations. The cost of these emergency operations is calculated below, in section 4.

c) Education

26. The earthquakes affected some 450 educational and administrative establishments in the Federal District (22% of the total) and nearly 50 additional units in the interior. Of that number, it is estimated that around 40 units were totally destroyed or will have to be demolished; 50% were damaged and will require moderate repairs, and the remaining 42% suffered minor damage that does not prevent their immediate use. As a result of this damage, it is calculated that around 14 000 students and 700 teachers will have to be permanently relocated; an additional 50 000 students and 1 500 teachers will have to be relocated temporarily. The Ministry of Public Education has indicated that it has the necessary resources at its command to

/carry out

carry out their relocation immediately. Another 150 000 students, approximately, were temporarily prevented from attending school because of the lack of services (such as water, electricity, transport, etc.) due to the fact that their schools were in the most heavily-damaged area or in zones that were cordoned off. In order to alleviate this situation, high school classes were broadcast on television (three and one-half hours per day on three channels). Among the administrative buildings that were damaged or destroyed, specific mention should be made of the National Library, the medical school and a vocational school in the Instituto Politécnico Nacional, as well as other medium-sized structures.

27. The total cost of replacing the classrooms and buildings that were destroyed and of repairing those that were damaged is placed at 109 billion pesos. The losses in furniture and equipment (laboratory and computer equipment, etc.) is estimated at an additional 21.4 billion pesos, bringing total damages in the sector to 130.4 billion pesos.

28. The above calculations are based on an estimated replacement cost of 100 000 pesos per square metre and on the cost of repairing over 1 400 classrooms of 200 square metres each; the value of equipment and furnishings has been assumed to be 20% of the cost of repairs and reconstruction. With respect to the buildings involved, the losses were estimated at 320 000 square metres of floor space at a unit cost of 250 000 pesos.

3. The services sector

29. Buildings in the services sector were severely affected, and the provision of services was therefore subject to interruptions that varied in degree and duration. Approximately 880 ^{7/} buildings were completely destroyed or will have to be demolished and another 1 600 units, approximately, suffered non-structural damage of various sorts; 97% of the above damage occurred in the central core of Mexico City.

a) Public buildings

30. The buildings used by the government service were severely affected. An approximate total of 125 buildings, either owned by State institutions (about 30%) or rented from private individuals (the remaining 70%), were totally or partially destroyed or have had to be evacuated for safety reasons and will be demolished. The headquarters of a number of ministries (including the Ministries of Commerce and Industrial Promotion, Labour, the Navy, Agrarian Reform, and Communications and Transport) either collapsed or will have to be torn down. In this case, the damages not only related to the infrastructure, but also include the furnishings and equipment in the buildings as well as the files and data banks they contained. Services provided to the public have had to be discontinued in those cases where the buildings were completely destroyed or are being conducted, slowly and with great difficulty, in temporary office quarters. The cost of replacing the buildings that were destroyed or will be demolished, of repairing the damages and of the furnishings and equipment is estimated at 390.25 billion pesos.^{8/} No attempt has been made to quantify the higher cost of providing services in alternate locations or the increased expenses incurred by users in obtaining such services.

/b) Communications

b) Communications

31. The damage sustained by the telecommunications network includes the total or partial destruction of buildings which housed telephone exchanges, the total or partial equipment losses of the two main exchanges and damage to the telephone system in the most severely affected area of the capital. As a result of the total or partial collapse of a number of buildings, the exchanges for national and international long-distance service, operator services and long-distance direct dialling from the Federal District to other points in Mexico and outside the country were damaged. The loss of this system made it necessary to resort to the telex system in order to maintain communications.

32. The cost of replacing the equipment in the two main telephone exchanges, of reconstructing and repairing buildings and of repairing telephone signal transmission facilities is estimated at 37 billion pesos. Indirect costs of another 33 billion pesos in the telecommunications subsector have also been estimated. These costs relate to the loss of potential earnings resulting from the partial inoperability of long-distance service from Mexico City (partial service having been restored) over a period of approximately six months, as well as the expenses incurred in providing telex and telegraph service free of charge during the emergency.

33. The damage sustained by the large private television network located downtown Mexico City included the total or partial collapse of two large buildings and the total or partial loss of very valuable equipment. A very tentative estimate places the damage to buildings and equipment at 35 billion pesos.

c) Tourism

34. The tourism sector, which is the source of 3% of the country's gross domestic product and 6% of its foreign exchange earnings, was also affected by the earthquakes. In the Federal District, five hotels were totally destroyed, four were partially damaged, another 36 will require minor repairs and 35 others suffered damage to their décor. Outside the capital, and especially in the Ixtapa/Zihuatanejo resort, as well as in some locations in the States of Michoacán and Jalisco, around 15 hotels were damaged to varying degrees. In total, it is calculated that over 1 700 hotel rooms (less than 8% of the affected sites' capacity) were destroyed, and approximately 9 000 rooms will need different types of repairs. The disaster struck during the "off" season for tourism (from May to mid-December) when the hotels were booked to only 30 to 50% of their capacity. Moreover, the most severely damaged hotels are ones which are primarily patronized by Mexican tourists. Immediately following the earthquake, the hotel occupancy rate has been nearly 60%; this is probably due to the fact that many guests moved from hotels that had been evacuated to ones that were not damaged and due to the influx of foreigners and people from other parts of Mexico to seek information about family members and to help with the emergency rescue and relief work.

35. It is projected that, with the exception of those which collapsed or will have to be demolished, virtually all hotels will be operational by the time the "high" season begins in mid-December. Provisional calculations which take the loss of

/hotel capacity

hotel capacity and the estimated time for reconditioning each hotel into account, place the loss of potential income at 3.6 billion pesos. It is impossible to predict how the psychological impact of the disaster will affect foreign tourism in 1986, but 96% of the sector's installed capacity will be fully operational by then. The sector's losses in fixed assets, damage to infrastructure, furnishings and equipment in the hotels which collapsed, those which will have to be demolished and those which require repairs, are estimated at 51.6 billion pesos. It appears that most, if not all, of the hotels have some type of insurance that will cover at least part of their losses. In addition, the association of hotels has reportedly obtained a global loan of 15 billion pesos to allow them to continue operating, without having to pay off personnel, while repairs are conducted as well as to finance some of those repairs.

d) Water supply and sewerage systems

36. The earthquakes damaged two of the main aqueducts which carry drinking water to the Valley of Mexico, causing the loss of approximately one-tenth of total supply capacity immediately following the disaster. There were also ruptures in secondary aqueducts and in the distribution network in the metropolitan area, resulting in water shortages and the rationing of service in several districts of the capital. Information is not yet available on damages that may have occurred to the aqueducts serving locations in the hinterland. Although, 15 days after the disaster, the damage sustained by the major aqueducts has already been repaired, it has only been possible to locate and repair less than half of the ruptures in the distribution network. Rationing continues in the central and outlying areas of Mexico City, and water is being supplied to the affected population by tanker trucks. However, it would appear to be possible to re-establish 90% of service within approximately six weeks and full service by later 1985.

37. No information whatsoever has become available with respect to the status of deep drainage and sewerage systems in the metropolitan area or other parts of the country. It is reasonable to assume, however, that serious breaks may have occurred which will not be discovered until later.

38. The cost of repairing the two main aqueducts is tentatively estimated at 2 billion pesos. The cost of repairing breaks in the city's distribution networks may be as high as 5 billion pesos; this estimate is based on a valuation of the manpower used thus far to repair 40% of the leaks and on a ratio of 1:2 for the cost of the materials used in these repairs. The loss of potential earnings over an estimated period of three months due to the interruption and rationing of service is calculated at 600 million pesos, inasmuch as the water supply services will be unable to charge for around 10 million cubic metres of water. The social cost of the insufficient water supply, however, is much greater in view of the inconvenience this causes the population.

e) Energy

39. After the first earthquake, a number of power plants representing 35% of the total installed capacity for the metropolitan area were automatically cut off; however, with the exception of the most seriously affected area, service was gradually re-established. The transmission networks and power plants were not damaged; the

/damage sustained

damage sustained by the distribution networks is estimated at 3 billion pesos. Some fissures were discovered in two hydroelectric dams, but the extent of this damage is not yet known because the corresponding studies are still in progress. No substantial damage in this sector appears to have occurred in the country's hinterland.

40. The decrease in the electrical utilities' revenues as a result of the damage in the metropolitan area represents approximately 3.7% of their normal invoicing volume. Assuming that the situation can return to normal within six months, the loss of potential earnings would amount to 3.5 billion pesos.

41. The corresponding State enterprise reports that no damage was done to oil and derivate products extraction, refining, transport or distribution facilities.

f) Transport

42. Transport infrastructure and motor vehicles in the Mexico City metropolitan area were damaged as a direct result of the earthquakes; no major damage was sustained by the highway network, ports or airports. An estimated 30 kilometers of the nation's highways will have to be repaired at a cost of 600 million pesos. A number of footbridges collapsed and a number of overpasses in some urban roadways were damaged. The movement of the earth cracked the asphalt in the central portion of Mexico City, as well as sidewalks and gutters. Some of the train tracks in the subway (metro) system were thrown out of alignment, but not to such an extent as to prevent the system from operating. Overall, the cost of repairing this damage is tentatively estimated at nearly 3 billion pesos.

43. Around 1 200 private vehicles and 300 mass urban transport units were destroyed or damaged by falling buildings; their replacement value is calculated at 1.84 billion pesos.

44. During the emergency stage, the Government authorized the use of mass transport in the metropolitan area free of charge for earthquake victims and people conducting rescue and relief work; this represented a loss of income of nearly 200 million pesos. In addition, transport costs in Mexico City have been increased by the need to use longer alternate routes in order to bypass the most severely affected zone, which is still cordoned off; this has also caused the congestion of some rapid transit routes. This additional cost has not been quantified.

g) The banking system

45. The banking system was seriously affected due to the fact that the head offices of banks and around 100 branches were located in the area where the earthquakes caused the most property damage. Ten bank buildings collapsed either totally or partially or will have to be demolished; 50 branch banks suffered major damage, including damage of a structural nature; the remainder suffered minor damage but have been evacuated because they are in areas made dangerous by the proximity of buildings

/in poor

in poor condition. It is calculated that nearly 30 000 square metres of building floor space was entirely destroyed, representing an estimated cost of 10.5 billion pesos; the corresponding loss of furniture and equipment has been estimated at an additional 6.3 billion pesos. It has also been estimated that approximately 12 500 square metres of floor space will require repairs costing 3.125 billion pesos.

46. Moreover, two bank computer systems sustained damage which will cost an estimated 480 million pesos to repair. As an indirect result, the affected banks were forced to use alternate means of computation and communication; this involved a higher operating cost that is calculated at 128 million pesos. It is estimated that it will take two to three months to recondition these systems. It should be noted in this respect, however, that the banking system has continued to function normally.

h) Recreation and sports centres

47. Approximately 200 recreation and sports centres (including movie houses, theatres, bars and nightclubs) were affected by the disaster; 80 of them were destroyed or will have to be torn down. A preliminary quantification --assuming an average floor space of 300 square metres, unit costs for repairs and renovation of 150 000 and 15 000 pesos, respectively, and a valuation of furniture and equipment equal to 45% of the total cost-- puts these losses at 5.765 billion pesos. Only one small stadium suffered minor damage.

48. In addition to the above, it is estimated that recreation and sports facilities will lose potential income while the damage is being repaired. This has been calculated at 970 million pesos, assuming a use rate of 75 people per day in the 120 damaged centres, a per capita expenditure of 1 200 pesos, and a three-month period for repairs.

4. Other sectors

49. The industrial and business sectors were affected both directly and indirectly by the earthquakes. Furthermore, the country's cultural and religious heritage has also been affected. Unexpected expenses in connection with the emergency and with demolition work have had to be covered by the State.

a) Industry and commerce

50. The Lázaro Cárdenas iron and steel plant in the State of Michoacán sustained damage that prevents one blast furnace from functioning. The damage in this large industrial complex was relatively slight and has already been repaired at a reported cost of 2 billion pesos. However, a month's time will have passed before normal operations are recommended; this will produce a decrease in its production volume for 1985 of an estimated value of 4.8 billion pesos (i.e., the equivalent of the average output for one month). Within this same industrial centre, metal working and fertilizer plants suffered minor damage; their total losses (repairs and loss of potential earnings) are very tentatively estimated at 1.2 billion pesos.

51. Small-scale industry (primarily the garment industry) located in the central zone of the Federal District was severely affected. The facilities of around 1 326 small-scale industries were damaged; 800 of them lost all of their assets. The damage included infrastructure, equipment, inventories and output. The total losses sustained by these businesses, assuming a figure of 90 million pesos in fixed assets and inventories, are calculated at a cost of nearly 72 billion pesos. The partial losses suffered by the remaining businesses, calculated as 15% of the value of fixed assets and inventories, are estimated at an additional 7.1 billion pesos. Finally, it has been estimated that, during the three months required to carry out repairs, the damaged businesses will lose potential earnings of approximately 4.7 billion pesos.

52. Around 800 small business establishments of all types in the downtown area of Mexico City were also affected by the earthquake; half of these sustained a total loss. Moreover, 2 000 stalls were destroyed or have been evacuated in the food markets located in one main downtown block of Mexico City. The costs of renovating and rebuilding the 800 small business establishments, along with their furniture and the value of their inventories, have been calculated at an estimated 21.8 billion pesos, assuming an average floor space of 100 square metres, unit prices for replacement and repairs of 150 000 and 15 000 pesos, respectively, and a figure of 37 million pesos in furniture and 20 million pesos worth of inventory per business establishment; the losses in the markets would be in addition to the above total. The loss of potential income by small-scale businesses for the three-month period during which repairs will be conducted is calculated at 12 billion pesos. Losses caused by the destruction of stalls in the markets are estimated at 960 million pesos and their losses of foodstuffs and damaged merchandise at 4.14 billion pesos.

b) Cultural and religious heritage

53. A large number of monuments, works of art --especially murals-- and churches were damaged as a result of the earthquake, but the extent of the damage has not yet been determined. The losses involved are assumed to be very great, however.

c) Emergency expenditures

54. The assistance and relief work to help victims (including medical care, the reinstatement of some services on a very provisional basis, etc.) during the period of the emergency are estimated to have lasted approximately 15 days. Preliminary calculations of these emergency outlays places them at 23.8 billion pesos, of which 3.8 billion pesos were accounted for by donations from abroad.

d) Demolition and debris removal

55. In the interests of safety and the protection of the population in cases of disaster, federal law provides that the task of demolishing buildings that were totally or partially damaged as well as the removal of debris be carried out exclusively by the State. Preliminary calculations of the cost of such work (estimated at 5% of the value of the buildings that were destroyed or will be demolished) indicates an outlay of nearly 46.8 billion pesos.

5. Effects on employment

56. Estimates of a very preliminary nature indicate that 150 000 people were left without jobs immediately after the earthquake as a direct or indirect consequence of it. This translates into a loss of approximately 27 billion pesos in personal income over a period of three months. A portion of the newly unemployed may join the ranks of those who were already jobless in Mexico City (somewhat more than 6% of the economically active population), thereby exacerbating, on the short term, the already considerable problem of urban unemployment.

57. Approximately half of the jobs that were lost correspond to the industrial sector. The area of Mexico City which was most seriously damaged by the earthquake (the downtown area) contains a considerable number of small and medium-sized factories. Of these, the garment industry suffered the worst blow, inasmuch as damage was sustained by nearly 500 establishments employing, either directly or indirectly, approximately 40 000 people. It is estimated that another 10 000 jobs were linked to various small industrial enterprises located in this area.

58. Moreover, other industrial activities both in and outside the metropolitan area have felt the repercussions of the overall decrease in economic activity. A very rough global estimate of these repercussions indicates that 25 000 people have been left without work.

59. With respect to the services sector, it is calculated that nearly 25 000 people, directly or indirectly connected with the tourism industry in Mexico City and other locations, lost their jobs. In addition, the central portion of Mexico City was the home of a considerable number of businesses as well as personal and professional services. Although no estimate of the damage suffered by these activities has been prepared, it is calculated that the total or partial destruction of business establishments, in combination with the paralysis of economic activity in this zone, has affected nearly 50 000 people.

60. It is to be supposed that the earthquakes' above-mentioned repercussions on employment will be temporary. As companies that suffered damage recommence operations in coming months and as the reconstruction work is begun, at least some of the recently eliminated jobs will be restored. It is still too early, however, to estimate the earthquakes' net effect on employment over the medium term. Some general comments may be made based on the economic effort which the reconstruction work will require from the construction industry and related industrial activities.

61. With respect to the construction sector, the replacement of the property that was destroyed (housing, industries and services of all types) may result in a level of increased activity within this sector which would absorb an additional 400 000 man/years, approximately, over the next two years. This would mean that employment in the construction sector, both within the city and nationwide, would regain the dynamism it showed during the peak years of the construction boom. Industrial and service activities linked to construction would, in their turn, receive a multiplied impetus which would help reduce many of such activities' idle capacity, as well as reabsorbing a considerable percentage of the unemployment that has occurred in recent years.

62. It should be noted that, in view of the characteristics of employment in the construction industry, its future requirements may not necessarily be in line with the qualifications of the individuals who have recently lost their jobs in other urban activities.

6. A summary of the damage in gross and net terms

63. Despite the provisional nature of the estimates set forth in this report, due to the unavailability of a sufficient amount of reliable information so soon after the disaster, it is possible to provide an approximate idea of the total amount of damage caused by the earthquakes as well as to identify those sectors which, being the most seriously affected, will obviously require priority attention as regards the work of reconstruction. As more information becomes available in the days to come, the figures given here can be refined.

64. Total gross losses are calculated at 1.3 trillion Mexican pesos (equivalent to US\$ 4 103 500 000) (see table 1). Of that amount, approximately 87% (US\$ 3 589 000 000) corresponds to direct damages to infrastructure, while the remaining 13% (US\$ 515 000 000) refers to indirect damages, including the loss of earnings or output, the increased costs involved in providing basic services, and expenses relating to the emergency and temporary rehabilitation work.

65. A breakdown of the direct damages by sector indicates that the most severely affected sectors have been the buildings occupied by the government service (34% of the total), housing (15.7%), health (15.4%), educational infrastructure (11.4%) and small-scale industry and commerce (8.9%). In descending order of magnitude, the above sectors are followed by telecommunications (6.3%) and tourism (less than 5% of the total damage). Nearly half of the losses seem to belong to the public sector (see table 2).

66. With respect to indirect damages or losses, the main items are the cost of demolition (28.4% of the total), the loss of income by small-scale industry and commerce (21%), telecommunications (20%) and the work involved in dealing with the emergency situation (14.4%). The loss of potential earnings in the tourism and personal services sector amounts to nearly 5% and that of large-scale industry and the electricity utilities represents less than 3%, in each case, of the total indirect damage. These estimates do not include the loss of income in the days immediately following the disaster by many companies whose facilities were not damaged but which are located in the affected areas (see table 1).

67. It will not be possible to arrive at an estimate of the net losses until more information becomes available in regard to the percentage of the damage which was covered by insurance. At the time of writing, some data had been obtained concerning large buildings that were not insured (as is the case of some hospitals and multiple dwellings), as well as about equipment which was insured (75% of telecommunications equipment).^{9/} This scant information and the initial claims submitted to Mexican insurance companies in the first two weeks following the earthquakes (representing scarcely 160 billion pesos) suggest that a relatively small percentage of the damage was insured against this type of risk; a rough estimate would indicate

Table 1
ESTIMATE OF THE DAMAGE CAUSED BY THE DISASTER

	Billions of pesos			Millions of dollars <u>a/</u>		
	Total	Direct	Indirect	Total	Direct	Indirect
<u>Total</u>	<u>1 313.1</u>	<u>1 148.3</u>	<u>164.8</u>	<u>4 103.5</u>	<u>3 588.5</u>	<u>515.0</u>
<u>Social sectors</u>	<u>487.7</u>	<u>487.7</u>	-	<u>1 524.0</u>	<u>1 524.0</u>	-
Housing	180.3	180.3	-	563.4	563.4	-
Health	177.0	177.0	-	553.1	553.1	-
Education	130.4	130.4	-	407.5	407.5	-
<u>Service infrastructure</u>	<u>611.3</u>	<u>555.7</u>	<u>55.6</u>	<u>1 910.4</u>	<u>1 736.7</u>	<u>173.7</u>
Public buildings	390.3	390.3	-	1 219.7	1 219.7	-
Communications	105.0	72.0	33.0 ^{b/}	328.1	225.0	103.1
Tourism	59.7	51.6	8.1 ^{b/}	186.6	161.3	25.3
Water mains and drainage	7.6	7.0	0.6	23.8	21.9	1.9
Energy	6.5	3.0	3.5	20.3	9.4	10.9
Transport	5.8	5.6	0.2	18.1	17.5	0.6
Banks	20.6	20.4	0.2	64.4	63.8	0.6
Leisure	6.8	5.8	1.0	21.3	18.1	3.2
Personal services	9.0	-	9.0	28.1	-	28.1
<u>Other sectors</u>	<u>214.1</u>	<u>104.9</u>	<u>109.2</u>	<u>669.1</u>	<u>327.8</u>	<u>341.3</u>
Industry and trade	143.5	104.9	38.6	448.4	327.8	120.6
Iron and steel, metals and metal machinery, and fertilizers	7.2	3.0	4.2 ^{c/}	22.5	9.4	13.1
Small industry and trade	136.3	101.9	34.4 ^{c/}	425.9	318.4	107.5
Religious and cultural works	...	...	-	...	...	-
Emergency expenditure	23.8	-	23.8	74.4	-	74.4
Demolition and removal of rubble	46.8	-	46.8	146.3	-	146.3

Source: ECLAC estimates.

a/ Calculated at a weighted exchange rate of 320 pesos to the dollar.

b/ Includes 4.5 billion pesos attributed to those who provide services in tourism.

c/ Includes 13.5 billion pesos in salaries and income of independent workers and those who provide services in the sector of small-scale industry and trade.

Table 2

ESTIMATE OF DIRECT AND INDIRECT DAMAGE TO THE PUBLIC AND PRIVATE SECTOR

(Billions of pesos)

	Total			Direct									Indirect			
	Total	Pub- lic	Pri- vate	Repairs			Construction			Equipment			Inven- tories	Total	Pub- lic	Pri- vate
				Total	Pub- lic	Pri- vate	Total	Pub- lic	Pri- vate	Total	Pub- lic	Pri- vate				
Total	1 313.1	618.7	694.4	168.9	101.5	67.4	687.5	211.5	476.0	288.7	193.4	95.3	3.2	164.8	112.3	52.5
Social sectors	487.7	308.4	179.3	78.4	62.6	15.8	289.1	152.1	137.0	120.1	93.7	26.5	-	-	-	-
Housing	180.3	18.0	162.3	21.8	8.0	13.8	132.0	10.0	122.0	26.4	-	26.5	-	-	-	-
Health	177.0	180.0	17.0	21.0	19.0	2.0	84.0	69.0	15.0	72.0	72.0	-	-	-	-	-
Education	130.4	130.4	-	35.6	35.6	-	73.1	73.1	-	21.7	21.7	-	-	-	-	-
Service infrastructure	611.3	231.5	379.8	79.1	36.4	42.7	320.3	59.4	260.9	156.3	98.2	58.1	-	55.6	37.5	18.1
Public buildings	300.3	117.1	273.2	47.3	14.2	33.1	289.0	48.9	240.1	54.0	54.0	-	-	-	-	-
Communications	105.0	70.0	35.0	2.0	2.0	-	4.0	-	4.0	66.0	35.0	31.0	-	33.0	33.0	-
Tourism	59.7	5.0	54.7	14.1	5.0	9.1	11.5	-	11.5	26.0	-	26.0	-	8.1	-	8.1
Water mains and drainage	7.6	7.6	-	7.0	7.0	-	-	-	-	-	-	-	-	0.6	0.6	-
Energy	6.5	6.5	-	1.5	1.5	-	-	-	-	1.5	1.5	-	-	3.5	3.5	-
Transport	5.8	4.7	1.1	3.6	3.6	-	-	-	-	2.0	0.9	1.1	-	0.2	0.2	-
Banks	20.6	20.6	-	3.1	3.1	-	10.5	10.5	-	6.8	6.8	-	-	0.2	0.2	-
Leisure	6.8	-	6.8	0.5	-	0.5	5.3	-	5.3	-	-	-	-	1.0	-	1.0
Personal services	9.0	-	9.0	-	-	-	-	-	-	-	-	-	-	9.0	-	9.0
Other sectors	214.1	78.8	135.3	11.4	2.5	8.9	78.1	-	78.1	12.2	1.5	10.7	3.2	109.2	74.8	34.4
Industry and trade																
Large-scale industry <u>a/</u>	7.2	7.2	-	1.5	1.5	-	-	-	-	1.5	1.5	-	-	4.2	4.2	-
Small-scale industry <u>b/</u>	136.3	1.0	135.3	9.9	1.0	8.9	78.1	-	78.1	10.7	-	10.7	3.2	34.4	-	34.4
Emergency expenditure	23.8	23.8	-	-	-	-	-	-	-	-	-	-	-	23.8	23.8	-
Demolition, removal of rubble	46.8	46.8	-	-	-	-	-	-	-	-	-	-	-	46.8	46.8	-

Source: ECLAC estimates.

a/ Iron and steel industry, fertilizers and metals, and metal machinery.b/ Includes small-scale industry, trade and markets.

that it does not exceed one-fifth of the total, taking into account the fact that even those facilities which were covered were insured for only a fraction of their total replacement value. If this proves to be the case, net losses may total nearly 960 billion pesos (US\$ 3 billion). It should be noted that the payment of claims by Mexican insurance companies will not represent a total loss for this major sector of the intermediation system, inasmuch as approximately 85% of the sum represented by such settlements was reinsured. This means that the country will receive foreign exchange inflows of between US\$ 500 million and US\$ 550 million, approximately, in reinsurance payments.

7. Organization for reconstruction

68. Once the magnitude of the tragedy and its implications for the country's economic future became known, the President of the United States of Mexico announced, on 3 October, the creation of a National Commission for Reconstruction. This interministerial body, headed by the President himself, will see to all the work relating to the reconstruction of the areas devastated by the earthquakes. The Commission was established on 9 October. Six relief committees will report to the Commission: the Committee for the Reconstruction of the Metropolitan Area, the Committee for Decentralization, the Committee for Financial Affairs, the Social Relief Committee, the International Relief Committee and the Civil Security Committee.

III. TRENDS IN THE MEXICAN ECONOMY PRIOR TO THE EARTHQUAKES

69. Like most of the Latin American economies, during the last few years the Mexican economy has struggled under the effects of a persistent economic recession, on the one hand, and severe external and internal imbalances, on the other hand. Both the origin of these phenomena and the manner in which they have been addressed involve some features particular to Mexico. One important factor is that, by around the mid-1970s, Mexico had become such an important exporter of hydrocarbons that the external sector and public finances came to depend heavily upon this activity. Like the other countries of the region, however, and despite the authorities' determined efforts beginning in early 1982 to correct the imbalances and re-establish the basis for economic growth, when the earthquake occurred a great deal still remained to be done in order to overcome the many complex obstacles facing the economy.

70. Some of these problems were already brewing in the 1970s and even earlier, and are associated with structural factors inherent in Mexico's development style, including the shortcomings and lags of the industrial sector (a lack of interest in exporting, technological inefficiency and delays, insufficient integration, an excessive geographical concentration and the relative backwardness of the metals and metal machinery industry); inadequate insertion in the international economy; long-standing imbalances in the finances of the public sector; and the unequal distribution of the benefits of economic growth among the various strata of the population. Although one of the objectives of Mexico's economic policy has been to correct or at least mitigate these imbalances, neither the boom brought on by the exploitation of Mexico's oil deposits in 1978-1981 nor the stabilization programme that was adopted in 1983 have succeeded in bringing about any significant change in this respect.

71. The period from 1976 to 1981 provides the immediate backdrop for the present difficulties faced by the Mexican economy. Unlike many countries of the region which experienced a rapid deterioration in their terms of trade and growing external deficits (as a result, inter alia, of the need to import liquid forms of energy), Mexico took advantage of the rise in international oil prices by increasing its basic production level from 600 000 barrels per day in 1976 to over 2 300 000 barrels per day in 1981. This rapid expansion in its production volume and the leeway which it gave the Government to attack two long-standing bottlenecks in the Mexican economy --the deficit on the current account of the balance of payments and the deficit in public finances-- provided a good opportunity for dynamizing and diversifying the production apparatus. Rapid growth and an increase in the number of jobs were thus achieved on the basis of the oil boom and the high levels of public and private investment which that boom made possible. These efforts were undertaken despite the influence of adverse factors associated with the international economy, such as heavy inflationary pressures and, later, the stagnation in the volume of international trade which began to occur in 1979.

72. With the benefit of hindsight, we can now see that the authorities of the time set their sights on overly ambitious growth goals (an 8%-9% annual growth rate in the gross domestic product, in comparison to a traditional rate of 6%) and that the expansion in demand during the period from 1978 to 1981 exceeded the national

/capacity of

capacity of supply, a fact which had both domestic and external financial consequences.

73. With respect to the first factor, during the period 1978-1981 the expenditures of the public sector, whose total share in the gross domestic product was over 45%, increased at a very rapid cumulative annual rate of 13.5% in real terms, thus stimulating private investment (although this latter element behaved quite autonomously). Despite tax reforms and the greater fiscal revenue generated by the petroleum sector, the traditional gap between the public sector's expenditures and its revenue widened, thus raising the financial deficit from less than 5.5% of the gross domestic product in 1978 and 1979 to 13.5% in 1981 and to 17.6% in 1982 (see table 3).

74. In regard to the second factor, the response of supply --as was to be expected-- lagged behind the growth in demand, and the country thus resorted to an increasingly greater proportion of imports. Thus, although export performance was very dynamic, imports were even more so; the coefficient of imports of goods and services rose from less than 8% of the gross domestic product in 1978 to 17% in 1981. This was reflected by a remarkable increase in the current account deficit on the balance of payments (from US\$ 1.9 billion in 1977, it climbed to nearly US\$ 14 billion in 1981), whose cumulative balance for the four years of the boom amounted to the unheard-of figure of US\$ 30 billion. In order to deal with this deficit, as well as the public sector's financial imbalance, the country resorted to external borrowing, which was facilitated and magnified by the abundant supply of funds on international financial markets and the existence of very attractive interest rates in real terms (which, at some points, were actually negative rates). Due to the above and to the existence of structural lags in the development of the financial intermediation sector, Mexico's expansionary credit policy was insufficient to meet the needs of private enterprise, which also resorted to the expedient of obtaining large volumes of external financing.

75. Partly because of the rapid expansion in global demand and the fact that supply was not keeping up with it, inflationary pressure in Mexico was greater than it was in the international economy (between 1980 and 1981, the variation in the consumer price index was on the order of 30% per year, while the same indicator in the United States was 9%). In spite of this situation, the exchange rate was held to virtually the same level (even in 1981, the exchange rate slipped very little), causing the peso to become increasingly overvalued. This, in turn, exacerbated the external imbalance, since it encouraged imports, discouraged exports, favoured capital flight and made it necessary to obtain new lines of credit abroad. In addition, these latter phenomena were magnified during certain periods by the fact that interest rates were set at uncompetitive levels in accordance with government directives.

76. At a time when most Latin American countries were already reeling under the impact of the international recession, Mexico was able to continue its vigorous growth --but at the cost of larger and larger cumulative domestic and external financial imbalances. The external debt rose from a total of US\$ 34 billion at the end of 1978 to US\$ 75 billion in 1981.

Table 3
MEXICO: MAIN ECONOMIC INDICATORS

	1978	1979	1980	1981	1982	1983	1984 ^a	1985 ^a
Basic economic indicators								
Gross domestic product at market prices (billions of 1970 dollars)	80.1	87.5	94.8	102.3	101.8	96.4	99.8	...
Population (millions of inhabitants)	65.7	67.5	69.4	71.3	73.2	75.1	77.0	78.9
Per capita gross domestic product (1970 dollars)	1 220	1 295	1 366	1 436	1 391	1 284	1 295	...
Growth rates								
Short-term economic indicators								
Gross domestic product	8.1	9.2	8.4	7.9	-0.5	-5.3	3.5	...
Per capita gross domestic product	5.1	6.2	5.5	5.1	-3.1	-7.1	0.9	...
Per capita national income	5.0	6.7	6.8	4.6	-4.8	-7.5	0.6	...
Rate of unemployment ^{bc}	6.9	5.7	4.5	4.2	4.2	6.8	6.0	...
Consumer prices								
December to December	16.2	20.0	29.8	28.7	98.8	80.8	59.2	56.1 ^d
Variation between annual averages	17.5	18.2	26.3	27.9	58.9	101.9	65.4	56.5 ^d
Real wages and salaries^f								
Money ^f	-3.4	-1.3	-6.7	2.4	-4.3	-23.0	-6.4	-0.1 ^d
	32.7	33.1	33.5	32.8	62.1	41.4	63.9	57.8 ^g
Current income of government								
Total expenditure of government	33.3	35.9	65.6	36.7	63.9	107.6	55.3	56.3 ^h
Fiscal deficit/total expenditure of government ^f	27.1	57.0	56.5	62.9	101.7	73.3	45.8	50.0 ^h
Financial deficit of the public sector/GDP ^f	19.7	20.0	16.4	30.3	44.1	30.8	25.8	17.5 ^h
	5.3	5.4	6.5	14.5	17.6	8.9	7.4	6.7 ^h
Current value of exports of goods and services								
Oil	37.9	40.8	55.1	23.1	-6.9	-1.8	12.0	-6.3 ⁱ
Non-oil	74.8	114.6	166.9	40.1	13.3	-2.9	3.5	-8.6 ⁱ
Current value of imports of goods and services	27.5	26.0	16.7	9.8	-27.9	0.1	24.9	-3.7 ⁱ
Terms of trade (goods and services)	47.9	47.4	53.8	30.6	-36.5	-41.0	25.6	34.7 ⁱ
	2.1	10.0	22.1	2.7	-10.0	-10.9	0.3	...
Millions of dollars								
External sector								
Value of exports of goods and services	10 743	15 129	23 458	28 884	26 895	26 422	29 604	...
Oil	1 799	3 861	10 306	14 440	16 362	15 881	16 441	...
Non-oil	8 944	11 268	13 152	14 444	10 533	10 541	13 163	...
Value of imports of goods and services	11 336	16 704	25 683	33 542	21 311	12 575	15 796	...
Trade balance (goods and services)	-593	-1 575	-2 225	-4 658	5 584	13 848	13 808	...
Net factor services	2 771	4 108	6 209	9 531	11 598	8 993	10 218	...
Balance on current account	-3 259	-5 553	-8 305	-14 074	-5 922	4 966	3 725	...
Balance on capital account	3 692	5 835	9 330	14 775	1 812	-2 945	-1 484	...
Variation in international reserves	433	282	1 025	700	-4 110	2 021	3 201	...
Total external debt (balance)	33 900	39 700	50 700	74 900	88 300	92 100	95 900	...
Exchange rate on 31 December								
Unified	22.72	22.80	23.26	26.23				
Controlled					76.48	143.93	192.56	305.00
Free					148.50	161.35	209.97	380.00

Source: ECLAC, on the basis of official figures.

^a Preliminary figures. ^b Percentages. ^c Weighted averages for the metropolitan areas of México City, Guadalajara and Monterrey.

^d Up to August. ^e Refers to minimum wages and annual averages. ^f Money in circulation: bank notes and checking accounts.

^g Up to July. ^h Up to June. ⁱ Up to March.

77. In 1981, four adverse factors were to have a serious impact on Mexico's economic performance during the months which followed, and their effects continue to be felt today. Firstly, the initial signs of a contraction in the oil market began to appear precisely when the Mexican economy's dependence on oil had reached its peak. Secondly, as a reflection of the policies of the largest industrialized economy, real interest rates became extremely high, thus forcing Mexico to spend a growing share of its foreign currency export earnings on the servicing of its debt (the interest on the debt rose from US\$ 2.6 billion in 1978 to US\$ 8.4 billion in 1981). Thirdly, the pressure on the Mexican peso (which stemmed from its marked overvaluation) became overwhelming and contributed to a massive flight of foreign exchange during that year, which was compounded by private agents' belief that changes would surely be made soon in the country's economic policy. A paradoxical situation thus arose in which the flight of foreign exchange partly offset the inflows of capital from external borrowing. Finally, in the months to come the country was to find that, due to a combination of circumstances (including the Falklands /Malvinas/ war and the deterioration of the Mexican economy itself), its access to external credit had suddenly been cut off.

78. The combined effects of these four phenomena reached a crisis point in 1982. Early that year, the authorities abruptly devalued the peso and adopted other, sometimes inconsistent, measures (e.g., the measures designed to curb demand were partly cancelled out by considerable increases in minimum wages). Other measures were later taken (in August and September) with respect to foreign exchange (first the adoption of multiple rates, then a broadening of extensive exchange controls) and other matters (the nationalization of the banking system, the unilateral declaration of a ninety-day moratorium on the external debt service), all of which helped to heighten the uncertainty felt by a large segment of the private agents in the economy. Thus, when the six-year term of the Government came to an end and a new administration took office late in the year, the economy was facing a serious crisis brought on by a steep decline in economic activity (the gross domestic product dropped by 0.5% after four years of an unprecedented boom and major achievements) and its marked domestic and external imbalances.

79. Since 1 December 1982, the new authorities have been confronted by the difficult dilemma of how to reduce these imbalances while at the same time leaving the way open for an increase in production, exports and employment. Within this context, the most difficult questions of economic policy were --and continue to be-- those raised by the following problems: how to generate enough foreign exchange to permit a reasonable rate of economic expansion and to sustain the heavy burden represented by the external debt (an issue which naturally has implications for, inter alia, the design of exchange, external borrowing and export promotion policies); how to put the finances of the public sector on a sound footing (a problem which involves the relationship between the policy on spending and the policies on taxes, charges and --once again-- on the domestic and external debt); how to bring down inflation (an issue that is very closely tied to the above problems, as well as to wage policy); and how to boost savings and investment (an objective that is connected with exchange, monetary and especially interest rate policies). This situation clearly involves major combinations and trade-offs with respect to the comparative degrees to which the above-mentioned objectives can be met.

80. The new authorities addressed these problems on the basis of the "Immediate Economic Reorganization Programme" (PIRE), some of whose main objectives were the

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control of inflationary pressure and public spending, the selective protection of the production apparatus and employment, and the State's recovery of its control over the exchange market. The programme was supported by the International Monetary Fund through an Extended Fund Facility agreement for US\$ 3.84 billion (covering the period 1983-1985) and supplemented by a rescheduling of liabilities deriving from the external debt.^{10/} A medium-term development plan (1983-1988) was also prepared which called for structural changes in the production apparatus, a more efficient form of insertion in the international economy, the creation of more jobs and the establishment of conditions that would pave the way for a more egalitarian society.

81. Within this framework, the authorities took a number of specific steps to correct the country's short-term domestic and external imbalances. Firstly, they put another devaluation into effect (which resulted in a pronounced undervaluation of the Mexican peso) and established a dual exchange system, whereby a "controlled" rate was used for essential goods and a "free" rate applied to non-essential goods and most invisibles; both rates were subject to differential adjustments so that, over time, they would gradually converge. Secondly, they increased public-sector revenues by raising taxes (especially excise taxes) and revising the schedule of charges and prices for public goods and services, including fuel. In addition, an austerity policy was applied to government spending. Thirdly, discussions with external creditors were begun which culminated in the first renegotiation of public debt payments falling due within the period from August 1982 to December 1984 (US\$ 22.5 billion). A mechanism was also created --the Trust Fund for Exchange Risk Coverage-- in order to facilitate the payment of private enterprises' external debts, to protect the production apparatus from bankruptcies caused by devaluations and to expand the guarantees given to foreign banks. Over a period of four years, these measures cushioned the impact of the external debt service. Fourthly, a tight credit policy was adopted, which fit in with the effort to curb global demand, and interest rates on both deposits and loans were raised (although, as it turned out, the rates were still negative in real terms during most of the first year of their application). Fifthly, the authorities chose to pursue a restrictive wage policy. Finally, the first steps were taken towards establishing a tariff system to replace the country's system of import permits with a view to making the existing industrial concerns more competitive. This package of measures was supplemented by specific steps to eliminate the atmosphere of uncertainty that prevailed among private agents and to encourage both domestic and foreign investment.

82. These instruments of governmental action were applied with varying degrees of stringency at different times; for example, beginning in the second half of 1984, the policy on public spending became somewhat more liberal than it had been before, and wage policy was also made less restrictive in 1984 than it had been during the preceding year. The basic approaches established in December 1982 were maintained, however. The results of these policies began to be seen in 1983 and became more evident in 1984 but, as noted earlier, by mid-1985 they had become less apparent. The policies designed to curb global demand, and especially the exchange policy, quickly had an effect on the external imbalance, partly by stimulating exports (both of oil and other items) but particularly by contributing to a sharp decline in imports. Thus, the trade surplus totalled almost US\$ 14 billion both in 1983 and 1984; this was enough to pay the interest on the external debt, to create a surplus on current account of nearly US\$ 5 billion in 1983 and US\$ 3.725 billion in 1984 and to generate a substantial increase in the country's international /monetary reserves.

monetary reserves. This meant that, for the first time in many years, the country became a net exporter of capital, i.e., a process of external dissaving was set in motion, despite the fact that the pressure on the capital account was eased by the postponement of some of the amortization payments on the external debt until 1987.

83. In connection with public finances, tax measures and rate adjustments, together with the restrictive policy on spending (the relative share represented by the Federal Government's expenditures --excluding interest and amortization payments on the debt-- dropped from 28% in 1982 to less than 23% in 1985), made it possible to reduce the public sector's financial deficit from 17.6% of the gross domestic product in 1982 to 8.9% in 1983 and 7.4% in 1984.

84. As was to be expected, the progress made in correcting the external imbalance and reducing the deficit in public finances was achieved at a high social cost in terms of the level of economic activity and the well-being of a large section of the population, especially in 1983. In that year, the gross domestic product dropped sharply (by over 5% in real terms). Both open unemployment and under-employment rose, and real minimum wages fell 23%. The picture improved in 1984, especially during the second half of the year, due to the delayed effect of the upturn in exports, an increase in private investment and a less restrictive policy on public spending and credit. Nonetheless, open unemployment did not decrease, real minimum wages declined once again (this time by 6.4%) and the growth in the gross domestic product barely exceeded the natural growth of the population. Thus, per capita income at the end of 1984 was comparable to what it had been in 1979.

85. Even more significantly, inflation has not been brought down as rapidly as was called for in the Government's programme. Although inflation has definitely been slowing down, the decrease has been very slow (the December-to-December variation in the consumer price index was 98.8% in 1982, 80.8% in 1983 and 59.2% in 1984). Moreover, the nature of Mexico's inflation changed during the period in question. Whereas in 1982 and preceding years the country was faced with demand-pull inflation, this subsequently turned into cost-push inflation. Some of the significant factors in this respect have been the increase in the unit costs of production associated with a less intensive utilization of installed capacity; frequent changes in public utility prices and rates; high nominal interest rates; sliding exchange rates; and wage adjustments. The effect of these factors has been magnified by the inflationary inertia which has been inherited along with severe distortions in the relative price structure and, especially, expectations of future price increases. The slowness of the decline in inflation has given rise, in turn, to other economic policy dilemmas. For example, neither the corrections made in the exchange rate nor wage adjustments kept up with inflation in 1983 or 1984, which contributed to a progressive erosion in the peso's undervaluation, in the former case, and posed an additional obstacle to the possibility of boosting supply, in the latter.

86. On two occasions, the authorities made slight corrections in the exchange rate adjustment scale, but in both cases the correction was not enough to prevent a progressive erosion in the undervaluation of the peso. Thus, during the second quarter of 1985, the peso (at the controlled rate) reached parity with the United States dollar, and it is possible that it has even become slightly overvalued since that time. This phenomenon coincided with a downturn in external demand that can be attributed to the slowdown in the United States economy and, particularly, to a

/weakening of

weakening of the international oil market, which has forced Mexico to lower prices three times during the past seven months 11/ in addition to causing a steady decline in its terms of trade.

87. At the same time, as already noted, the economy began to make a recovery starting in mid-1984; this was reflected in a rapid increase in imports, which strengthened the trend towards an external imbalance described earlier. As a result of the combined effect of these internal and external factors, the value of exports was 14.2% lower during the first half of 1985 than during the same period of the preceding year (the size of the decrease was the same for oil and non-oil exports); in addition, the value of imports increased by 35.5%. Should these trends continue, the trade balance would show a surplus of US\$ 7 billion by the end of the year (in comparison to US\$ 14 billion in 1984) while the deficit on current account would be approximately US\$ 2 billion (compared with a surplus of US\$ 3.7 billion in 1984).

88. Moreover, the need to pursue a less restrictive policy on public spending in 1984-1985 (partially in order to pay the increasingly high service on the domestic public debt) coincided with a sluggish performance as regards public revenue. One factor was the drop in international oil prices and another, to some extent, was the lag-time involved in applying price and rate adjustments to public goods and services (another consequence of having underestimated the rate of inflation in the consolidated public budget). So, while the Federal Government's income at current prices rose by slightly over 56% during the first half of 1985 in relation to the same period of 1984, the income of State agencies and enterprises increased only 38.7%. Meanwhile, the Federal Government's current expenditures climbed approximately 50% and expenditures on investment rose nearly 90%, while total spending by public enterprises and agencies rose 53%. In sum, the drop in these types of revenue and especially in that of State agencies and enterprises, combined with a slight rise in current expenditures by enterprises and in capital expenditures by the Federal Government, were part of the reason why the budget deficit was nearly 60% higher than during the same period of the preceding year. If the deficits of the rest of the public sector and of the Government financial intermediation system are added to the above figure, then what is called the "global financial deficit" rose by 80%. This means that if this trend were to continue throughout the rest of the year, the financial deficit would total 6.7% of the gross domestic product rather than the estimated figure of 5.1% used in the budget and in the financial programme that was approved at the beginning of the year (see table 4).

89. Along with its other consequences, this recent deterioration in public finances has had a major impact on the country's monetary situation, particularly in view of its severely restricted access to external financing. During the first half of 1984, almost 30% of the public sector's deficit was financed by external resources; in the same period of 1985, however, there was a net loss of external financing, and the country turned to domestic sources to cover the entire deficit and part of its amortization payments on the external debt. This made it necessary for the Federal Government to compete actively in the intermediation system for domestic resources; the sale of securities to the public was three times greater during the first half of 1985 than it was during the same period of the preceding year. This had two immediate effects: the banking system's lack of liquidity as regards the extension of regular lines of credit to the private sector and the rise in interest rates, which is already shaping up to be one of the main causes of the lack of flexibility characterizing public spending.12/ Thus, the deterioration in the public sector's

Table 4

MEXICO: PUBLIC SECTOR FINANCES DURING THE FIRST SIX MONTHS
OF 1984 AND OF 1985

(Billions of pesos)

	Annual allocation 1985 budget	Actual expenditures		Variation (%)
		1984	1985	
<u>Income</u>	<u>13 449</u>	<u>4 392</u>	<u>6 490</u>	<u>47.8</u>
Federal Government	7 683	2 261	3 534	56.3
Institutions and enter- prises subject to budgetary control	5 766	2 131	2 956	38.7
<u>Gross expenditure</u>	<u>18 110</u>	<u>6 080</u>	<u>8 674</u>	<u>42.7</u>
Amortization payments on the debt and "adefas"	2 941	1 217	1 432	17.7
Net expenditure	15 169	4 863	7 242	48.9
Federal Government	10 195	2 487	4 043	62.6
Current expenditure	1 933	416	624	50.0
Investment	846	76	142	86.8
Transfers	3 188	712	1 345	88.8
Shares	1 290	388	594	53.2
Interest	2 938	896	1 339	49.4
Institutions and enter- prises subject to budgetary control	4 974	2 376	3 199	34.6

Source: ECLAC, on the basis of official figures.

financial standing and the restrictive policy laid down by the monetary authorities tend to affect the availability of loanable funds and, hence, private companies' recovery capacity.

90. A review of the most salient aspects of the above discussion points up the fact that just as the economy was beginning to make a recovery --which coincided with a deterioration in external conditions-- the situation once again took a turn for the worse with respect to the long-standing economic imbalances that the authorities had so diligently attempted to correct. As stated earlier, by mid-1985 the economy was on its way back up (the volume of industrial production in the first half of 1985 was 7% higher than during the same period of 1984), but the external imbalance was once again a problem; the financial deficit of the public sector was also worsening; inflationary pressure did not slacken to any significant degree (the annual variation in the consumer price index for a 12-month period ranged from an annual rate of 60.8% in January to an annual rate of 56.5% in August); and the public sector's financial needs, after the flow of external savings was interrupted, prevented the private sector from gaining access to bank credit.

91. Between June and September 1985, the situation continued to deteriorate. With the public expecting an adjustment in the sliding exchange rate scale, capital flight increased; this phenomenon was reflected, inter alia, in the widening gap between the exchange rate for the peso on the controlled market and the "free" rate (over 30%), making the exchange markets increasingly difficult to manage. In order to staunch the outflow of capital, the authorities devalued the peso again in July and modified their exchange policy. The controlled exchange rate was devalued by approximately 20%, and the system for making gradual and predictable adjustments in the exchange rate was replaced by a system under which the rate on the controlled market was subject to change without prior notice, while the "free" rate was allowed to be determined by market forces (the immediate result being an initial variation of over 50%). Although the purpose of these measures was to correct the external imbalance, they nonetheless had an adverse effect on public sector finances and on inflationary expectations.

92. Along with these exchange policy measures, other provisions designed to correct macroeconomic imbalances were implemented. Firstly, modifications were made in the Federal Government's original budget, including cutbacks in investment programmes and particularly in current expenditures, in order to deal with the situation created by a lower level of revenue, higher interest payments on the domestic public debt and the need to make budgetary performance less dependent on credit. The new cuts, in conjunction with the restrictions agreed upon in earlier months, were intended to reduce budgeted expenditures by 700 billion pesos. A major administrative reform aimed at rationalizing government activities (and involving the elimination of around 15 000 government jobs) was carried out as part of this measure. Secondly, the monetary authorities decided to restrict the expansion of credit even further. By early 1984, priority had already been given to operations on the open market as a means of monetary regulation. The legal reserve requirement of 49% which had been in effect until 1984 was replaced by a marginal reserve requirement of 10% and a reserve requirement of 35% for purchases of government securities or "regulation bonds". In view of the exacerbation of financial imbalances, in June the Central Bank reached a "gentlemen's agreement" with the rest of the country's banks to refrain from channelling 90% of marginal deposits back into lines of credit. This provision was to have a considerable impact on the banks' lending capacity. Finally, under the "Integral Export Promotion Programme" (PROFIEX), the replacement of the import permits system by tariffs, which had already been decided upon, was sped up in the interest of greater efficiency and in order to encourage national enterprises to make a greater export effort.

93. In sum, throughout the entire period in question the Mexican authorities made an effort to correct the fundamental imbalances existing in the economy and, at the same time, to boost production while putting it on a new footing. Although major achievements have been made in the past three years, the same problems encountered by the administration in December 1982 were still latent in September 1985 and, in some respects, had even worsened as a result of the uncertain outlook of the international oil market. The Government's standing economic policy objectives (to bring down inflation, to gain enough leeway in the balance of payments and public finances in order to meet the needs of an expanding economy and to create the necessary conditions to ensure that this expansion will be great enough to raise the level of well-being of the majority and steady enough to sustain the country's long-term development) have caused the authorities to focus their attention on certain crucial elements (public spending, the policy on public-sector revenue,

/credit policy,

credit policy, the policy on interest rates, wage policy, pricing policy and exchange policy) which, as will soon be discussed, were either directly or indirectly affected by the earthquake.

94. Another factor is the authorities' relative lack of manoeuvring room with respect to the introduction of a new policy package. Suffice it to say that, despite the rescheduling of US\$ 48.5 billion in foreign loans falling due during the period 1985-1990 and the decrease in international interest rates seen in recent months, over 50% of the earnings on exports of goods and services is used to service the foreign debt (see table 5). In addition, more than 40% of the Federal Government's budgeted expenditures are devoted to servicing the domestic and external debts. The above situation is compounded by the fact that some crucial variables in the Mexican economy, such as the price of oil and international interest rates, are completely beyond the control of the Mexican authorities, thus introducing a degree of uncertainty into any programming exercise with respect to the economy and economic policy.

Table 5
MEXICO: INDICATORS OF EXTERNAL INDEBTEDNESS

(Millions of dollars)

	Year-end debt balance				Scheduled amortization payments prior to renegotiation ^b						Scheduled amortization payments after renegotiation ^b					
	1982	1983	1984	1985 ^a	1985	1986	1987	1988	1989	1990	1985	1986	1987	1988	1989	1990
Total	87 608	93 779	96 651	97 019	13 322	10 831	14 813	15 744	14 215	11 119	7 038	3 736	6 670	6 266	7 863	7 598
Public sector	59 730	66 559	69 378	69 956	10 921	9 310	13 483	12 059	10 466	7 808	4 637	2 215	5 340	2 581	4 114	4 287
Commercial banks	46 386	54 090	56 866	57 361	8 585	7 345	11 879	10 478	9 531	6 779	2 301	250	3 736	1 000	3 179	3 258
Creditors	13 344	12 469	12 512	12 595	2 336	1 965	1 604	1 581	935	1 029	2 336	1 965	1 604	1 581	935	1 029
Banco Mexicano	8 531	6 909	6 340	6 130	..	..	..	..	..	..	..	..	..	..	..	..
Commercial banks	8 386	5 146	4 999	4 999	..	..	..	..	..	..	..	..	..	..	..	..
Creditors	145	1 763	1 341	1 131	..	..	..	..	..	..	..	..	..	..	..	..
Private sector	19 107	19 107	18 500	18 500	2 401	1 396	1 050	3 228	2 992	2 577	2 401	1 396	1 050	3 228	2 992	2 577
Commercial banks	14 557	14 557	15 415	15 415	645	894	620	3 064	2 914	2 577	645	894	620	3 064	2 914	2 577
Creditors	4 550	4 550	3 085	3 085	1 756	502	430	164	78	-	1 756	502	430	164	78	-
Other	240	1 204	2 433	2 433	-	125	280	457	757	734	-	125	280	457	757	734

Source: Ministry of Finance and Public Credit.

^aUp to March.

^bThe first renegotiation of the public debt occurred in 1983 and covered short- and medium-term loans in the amount of US\$ 23.6 billion; the terms were as follows: an 8-year term with a 4-year grace period, a margin of 1.88% over the LIBOR rate and 1.0% in commissions. The second renegotiation was conducted in 1985 and involved US\$ 48.5 billion over a 14-year term with a 1.15% margin over the LIBOR rate. In addition, the authorities reached an agreement in late September 1985 with major creditors to defer US\$ 950 million in amortization payments corresponding to 1985.

IV. PRINCIPAL REPERCUSSIONS OF THE DISASTER ON THE EVOLUTION OF THE MEXICAN ECONOMY

95. At first sight, estimates of damages caused by the earthquakes could suggest that the reconstruction effort could be borne without difficulty, particularly if the expenditure involved were spread over a two or three year period. Even though the loss in absolute terms of 1 300 billion pesos (US\$ 4 billion) is considerable (and of course the more than eight thousand people who lost their lives are irreplaceable), if the disaster is placed in a relative perspective, the value of the losses represents 2.7% of forecast gross domestic product for 1985; 13.5% of gross capital formation for the same year, or 11% of total Federal Government expenditure. Nevertheless, the effects of the disaster cannot be considered as an isolated phenomenon; as shown in the previous chapter, it took place at a time when the Mexican economy was struggling against a particularly difficult set of circumstances. The cost of reconstruction, which cannot be postponed will affect the most sensitive areas of economic policy, such as public expenditure, credit policy, the price structure and the balance of payments. Discussion of how to face these financial requirements could invoke such burning issues as whether it is possible to maintain economic policy on the same track within the context of the stabilization programme, and whether it is possible to continue servicing the public external debt in the face of the increased import requirements which are certain to follow any effort to repair the damage caused by the earthquake.

96. Repercussions of the financial implications of the disaster on the major macroeconomic aggregates are similarly felt on a microeconomic and even at the individual level. The disaster in fact occurred at a time when large sectors of the population --precisely those most affected by the earthquake-- had been the victims of a systematic erosion of their level of income. They now must bear the added burden of the loss of assets and a reduced capacity to replace them. The same may prove true of a large number of firms --many of them extremely small enterprises-- which suffered losses and which are now faced with the need to repair or reconstruct their actual factories and capital equipment. All of these elements could lead to new tensions and social demands on the public sector which would make the already complex management of economic policy even more difficult.

97. In addition, reconstruction is not restricted to the simple replacement of losses. Although the Government has not had sufficient time to draw up an overall programme to face the consequences of the earthquake, the first steps which have already been undertaken suggest that this will be done in the broader framework of urban reform for the Mexico City metropolitan area, and of a deliberate attempt to decentralize activities at the national level.^{13/} In this sense, the investments required to recover the damaged infrastructure, relocate and house the victims, reconstruct or repair the schools and hospitals, revive the many firms which lost their premises and in general reurbanize areas within and outside the capital Federal District, may involve sums well in excess of the value of the losses themselves. It is impossible to quantify this amount, since, it must be emphasized, reconstruction programmes have not been drawn up nor have any final decisions been taken relating to the speed with which the country wishes and is able to undertake them.

/98. Nevertheless

98. Nevertheless, once the immediate emergency and rehabilitation phases are covered, reconstruction raises the need to carry out a certain number of tasks without delay. These include the need to assist and rehouse the homeless; to repair the communications infrastructure and the water supply network; to clear the rubble and demolish those buildings which represent a danger for the population and solve in whatever way possible the shortage of school and particularly hospital infrastructure which has suddenly arisen in the capital of the Mexican Republic. Of equal importance is reconstituting the hotel and productive or service infrastructure which was damaged. Without touching on the question of whether it is up to the public or private sector to assume responsibilities for these tasks --both will no doubt share the responsibility-- reconstruction has financial and material implications, and the expenditure involved will affect the construction sector, which has a high multiplier effect on the rest of the economy. On the one hand, this offers an opportunity to contribute towards reactivating productive activity by taking advantage of the considerable idle capacity both in services, and in the supply of inputs to the construction industry. Nevertheless there will also be a renewed demand for imports, not so much as a direct result of the potential investment --construction in Mexico requires few direct imported inputs (less than 5%)--, but rather as the indirect effect of even a moderate revival of demand, in view of the high marginal propensity to import, as had been amply shown in the 12 months preceding the disaster.

99. To sum up, while it is true that among its multiple consequences, the earthquake caused direct damage to a variety of sectors, the principal incidence of reconstruction will have to be assessed through its repercussions on the main macroeconomic aggregates and on the application of economic policy. The decisions taken on reconstruction will in fact affect the composition and the level of public expenditure and credit, through these variables on the balance of payments, the price structure, the level of employment and public finances. In other words, reconstruction affects precisely those areas of the economy and economic policy which were already highly sensitive before the disaster. It follows from this that neither the Mexican Government nor the international community should conceive reconstruction as an isolated activity, but rather within the overall context of economic policy which now has to assume responsibility for the reconstruction as an additional challenge among the multiple problems which were already being faced.

100. In this respect it would be as mistaken to propose an unbridled increase in public expenditure and in the extension of credit, regardless of the considerable restrictions which the Mexican economy was already facing as to consider that the stabilization programme which was being implemented could continue to be applied without any modifications whatsoever, given the enormous losses sustained and the imperative to deal with at least some of these without further delay. What is in fact required is a pragmatic approach which makes it possible to face the financial requirements of reconstruction during the remainder of 1985 and during the next biennium, introducing the necessary modifications to economic policy, while at the same time laying down the bases for reviving the economy within the context of financial stability. Such an approach would require that the international community complement domestic actions, especially by expanding net external finance to the

/country during

country during 1985-1987, in order to allow the Government to continue applying its stabilization policies, but within the framework of a programme allowing for a higher level of economic activity than originally planned. It is worth mentioning that although restructuring of present debt servicing obligations undeniably represents temporary means of lightening the burden, it could complicate the problem further on due to a potential debt accumulation in circumstances in which the capacity to provide timely servicing and maintain a normal expansion of imports would not necessarily have been recovered. Once the Mexican Government has had the opportunity to review its financial programme in the light of the new circumstances faced by the country, it will prove easier to specify the scope, nature and duration of the breathing space required by the country to make headway towards reviving the economy on a new basis which takes into account the need for reconstruction.

101. This report has not attempted to develop alternative forecasts as to how the Mexican economy would have evolved during 1985 before and after the disaster. While such an exercise does not pose any insurmountable methodological problems, it would be premature in so far as the national government has not had sufficient time to consider the options available to it to adjust economic policy to the new requirements of reconstruction. Even less has an attempt been made to formulate any forecasts about the future since, in addition to the above observations, account must be taken of the unknown factors dependent upon the future evolution of certain critical variables, and which have a decisive influence on the development of the Mexican economy (petroleum prices, interest rates, availability of fresh financing). The main thrust of the following paragraphs is to illustrate, through an analysis of the direct and indirect consequences of reconstruction, the way in which this unforeseen variable might affect the problems which economic policy already had to face, and how it may alter the behaviour of the major macroeconomic aggregates.

102. In the short term --what remains of 1985--, the most obvious direct repercussions of the after-effects of the earthquake, in addition to the losses of human lives, capital equipment and personal property referred to in chapter II, are to be found in the probable effect of reconstruction upon public sector finances; the banking system (particularly the granting of credit), the balance of payments and personal income. In addition to the above, the dynamic effects of reconstruction must be taken into account, both in the last quarter of 1985 and over the coming biennium. These effects will obviously depend upon a series of decisions to be taken by the Mexican authorities and whose scope it is too early to anticipate, but which will once again affect public finances, credit policy, employment, the global level of economic activity and consequently the balance of payments.

103. As far as direct effects are concerned, it has already been pointed out that some 150 000 people found themselves temporarily out of work, foregoing approximately 27 billion pesos in income until they manage to find a productive occupation. The effect of this contraction in overall demand will be partly counterbalanced by the assistance given to the victims during the emergency period, both by national --public and private-- and international sources. At the same time, a sharp drop will occur in the supply of goods and services produced by firms affected or destroyed by the earthquake. It is estimated that this drop may reach approximately 75 billion pesos during the rest of 1985. In any case, the relative incidence of this contraction in global supply and demand is very low; and not sufficient to have a noticeable impact upon the main macroeconomic aggregates.

104. On the other hand, the effects of the earthquake will tend to aggravate the disequilibria which were already affecting public sector finances. As far as income is concerned, the earning capacity of some public enterprises was affected by the damage to their installations; significant among these are as already mentioned, the telephone system (33 billion pesos), the Federal Electricity Commission (3.5 billion pesos) and the Federal District Water Board (1 billion pesos). At least one semi-State enterprise producing goods (the Lázaro Cárdenas steel works) will lose approximately 4 billion pesos in sales, although part of this loss might be offset by a better future use of installed capacity. In addition, many public services were provided free during the emergency --transport, communications, postal services-- and this has naturally had an impact upon the finances of the enterprises concerned (1 billion pesos). It is also to be assumed that the Federal Government will be affected by a decline in tax collection for some time, both as a result of the large number of firms affected by the earthquake and of the upheavals which the earthquake caused in the tax administration and collection systems.

105. As far as expenditure is concerned, the earthquake caused and will continue to cause undeferable expenditure both in search and rescue operations and in carrying out the first steps to meet the emergency. A very preliminary estimate sets Mexican public sector expenditure at 24 billion pesos for this type of task, including provision of means of subsistence, medical attention, provisional shelter, etc. Far greater expenditures will be required for demolition, rubble removal and cleaning-up operations which will be carried out by the Government and whose preliminary cost is estimated at almost 50 billion pesos. On balance, it appears that the public sector will lose some 43 billion pesos in income in comparison with the forecast trend of public revenue before the earthquakes, and that it will have to face unforeseen expenditure in the range of 75 billion pesos, not counting the cost of reconstruction. This will expand the public sector deficit by some 117 billion pesos, equivalent to 0.2% of gross domestic product. In other words, during the final quarter of the year the initial effects of the disaster on public finances will at least partly counteract the considerable effort carried out by the authorities during the first nine months to restrict public expenditures and reduce the financial deficit of the public sector.

106. As far as the banking system is concerned, reconstruction will not only exert unaccustomed pressure on credit --the hotel owners' association alone has already indicated the need for initial emergency financing of 15 billion pesos--, but is also likely to interrupt the normal repayment of credit granted to many firms affected by the earthquake. Consequently, unless the monetary authorities introduce greater flexibility into credit policy, the shortage of bank liquidity will tend to become more pronounced at precisely the time when demand for

/credit increases.

credit increases. It is still too early to quantify this variable, but it obviously will be necessary to take it into account in adjusting economic policy to the circumstances born out of the events which took place on 19 and 20 September.

107. While the initial impact of the earthquake upon the balance of payments will probably be neutral during the brief period under consideration, it will be extremely negative over the medium term. It is estimated that there will be a drop of some US\$ 200 million in the contribution made by international tourism during the rest of the year as a direct (the reduction of hotel infrastructure) and an indirect result (reluctance to travel to devastated areas; fear of new earthquakes) of the disaster. A decline in non-petroleum exports by industries affected by the earthquakes --essentially the clothing industry-- of US\$ 100 million is also estimated. In addition, the first emergency, repair and reconstruction measures will require imports of some US\$ 300 million. Nevertheless, as far as income is concerned, it will be necessary to take into account the contributions in financial resources and in kind which have been made to meet the emergency (these are estimated at US\$ 150 million) and especially payment of reinsurance on the claims met by national insurance companies (US\$ 300 million, if we assume that approximately 60% of total claims are met during the remainder of the year). In addition, as is known, the country's financial authorities obtained a 180 days postponement in amortization payments on US\$ 950 million corresponding to part of the public sector debt contracted in 1983 from private creditors, while various multilateral agencies have agreed to an accelerated disbursement of funds for existing loans. As pointed out further on, it is necessary to add to the effects described above, the strongly negative indirect results which reconstruction will have upon the current account of the balance of payments, both for the remainder of 1985 and in the future. This may be attributed to the repercussions of reconstruction on the level of imports.

108. Finally, in the extremely short term the consequences of the recent events may contribute to accentuating the inflationary pressures to which the Mexican economy is subject, although it may be assumed that this impact will not be of great significance, and in any case cannot be quantified. Momentary supply bottlenecks may occur for example, with their consequent impact upon prices, although it is worth mentioning that in general supplies remained within normal parameters immediately after the earthquake, despite the large number of small traders who were affected. More important may be the fact that the disturbances to some activities may augment speculative pressures present even before the disaster. In the short term, the most obvious impact of this phenomenon on prices will be represented by the trend of increases in rents on certain types of dwellings and office premises. The cost of certain services, such as health and hospital care, could also rise while the shortage of hospital beds in the Federal District persists. In the medium term, the evolution of inflationary pressures is not only linked to the behaviour of public expenditure and credit expansion, but to economic policy decisions which could affect the price structure and relative prices. Among such decisions, the possibility of eliminating or reducing

/subsidies to

subsidies to a number of public services provided to the population in the metropolitan area of the Federal District (water, transport, waste collection), within the framework of a possible policy aiming at geographic decentralization, is worth mentioning.

109. As far as the indirect effects of reconstruction are concerned, their repercussions will be most apparent in global demand, public expenditure, credit financing and the balance of payments. As has already been observed, it is impossible to quantify this impact without knowing the magnitude of the reconstruction effort --and in particular the financial implications of setting it within the framework of a national decentralization of activities-- or the period over which it is intended to replace the lost property. Based on the magnitude of the losses set out in chapter II an estimate of the potential indirect impact of reconstruction can nevertheless be made for illustrative purposes.

110. For these purposes three assumptions are adopted. First, that the cost of reconstruction will be in addition to and not in substitution of the expenditure that would have taken place in the absence of any reconstruction. Secondly that at constant prices, the reconstruction effort will be exactly equivalent to the material loss suffered; i.e., the financial implications of a more integral reconstruction effort are ignored. Thirdly, this effort will be spread over the final quarter of 1985 and the 1986-1987 biennium and thus 275 billion pesos will be invested in what remains of the present year; 540 billion in 1986 and 334 billion in 1987.^{14/} Virtually all this expenditure gravitates around the construction sector 15/ (see table 6).

111. Within this context, and as a starting point, some correlations were made to measure the impact of the construction sector on the overall behaviour of the Mexican economy. On the basis of the above hypothesis, and based on the historical multiplier effect, it is estimated that additional construction in the rest of 1985 will lead to a 6.2% increase in the value added which had been forecast for this sector of activity. In 1986, the year of greatest effort, this increase will reach 14.4% and then fall to 9.1% in 1987. This would boost construction activity to the levels attained during the period of economic expansion which culminated in 1981.^{16/} Perhaps the greatest problem which will be posed by a sharp revival of construction activity would be its effect of sharply concentrating income, precisely at a moment when the country's authorities are aiming at geographic decentralization. At the present time, 18.6% of the aggregate value of construction is produced in the metropolitan area of the Federal District. If this proportion were to be maintained over the next biennium, it would lead to an almost 80% increase in this activity in comparison to 1985.

112. At the national level, forecast expenditure on this effort would involve an increase of 179 billion pesos in gross production for the remainder of 1985, and 416 billion during 1986. In these same years, the direct and indirect contribution of 165 billion and 383.4 billion pesos to value added,^{17/} would

Table 6

HYPOTHETICAL TABLE FOR REPLACEMENT
(Billions of pesos at 1985 prices)

	Total	1985	1986	1987
Public sector	506.4	128.0	223.9	154.5
Construction	313.0	70.9	148.0	94.1
Equipment	193.4	57.1	75.9	60.4
Private sector	641.9	146.7	315.9	179.3
Construction	543.4	108.1	268.0	167.3
Equipment	98.5 a/	38.6	47.9	12.0
Total	1 148.3	274.7	539.8	333.8
Construction	856.4	179.0	416.0	261.4
Equipment	291.9	95.7	123.8	72.4

a/ This includes inventories worth 3.2 billion pesos.

signify a boost to gross domestic product, which would grow at a slightly higher rate in 1985 (0.6%) than it would have done in the absence of the reconstruction effort. In 1986 this same effort would add 1.3% to the growth of global value added. Another important consequence would be the creation of 83 900 jobs for the remainder of 1985 and almost 195 300 in 1986 (see table 7).

113. The increased level of economic activity which would accompany reconstruction would have as its counterpart a revival of imports. On the basis of the past behaviour of the Mexican economy,^{18/} it is estimated that the direct and indirect effect of the import of goods and services (excluding factor payments) will cause a 4.4% increase in 1984 and a 7.4% increase in 1986. In absolute terms, additional imports worth US\$ 693 million will be required in 1985 and 1 176 million in 1986, taking into account the direct and indirect effects of reconstruction (see table 7).

114. Similarly, there would be repercussions on public finances and on credit. As far as expenditure is concerned, unforeseen expenditure has been estimated at some 248 billion pesos for the remainder of 1985 and 242.4 billion in 1986 (1985 constant prices). This represents an increase of 1.4% and 1.3% respectively over budgetary forecasts made in 1985. Not all of this expenditure would increase the fiscal deficit; it would partly be offset by the higher level of income caused by the revival of economic activity (see table 7). Nevertheless, if no new fiscal measures are taken --on income and expenditure-- a net increase in the deficit equivalent to 0.6% of gross domestic product in 1985 and 0.5% in 1986 would occur. Finally, it is anticipated that it will be necessary to increase credit financing by 38.6 billion pesos in 1985 and 89.8 billion in 1986 (1985 constant prices). These figures represent increases of 6.2% and 14.4% respectively on total credit for 1985. In this respect, the national authorities have already taken steps to liberalize monetary restrictions so as to avoid that the new emergency credit requirements lead to strong increases in interest rates.^{19/}

Table 7

ECONOMIC EFFECTS OF THE DISASTER AND RECONSTRUCTION

(Billions of 1985 pesos)

	1985	1986	1987
<u>Immediate effects</u>			
Public sector			
Loss of income	43.0	-	-
Increased expenditure	75.0	-	-
Total	117.0	-	-
Percentage in relation to deficit			
<u>a/ 1984 c/</u>	7.3	-	-
Private sector			
Loss of income (tourism and other enterprises)	125.6		
Wages	27.0		
Total	152.6		
Percentage in relation to GDP (1984)	0.5		
Balance of payments (millions of dollars)			
Losses to tourism	200.0	200.0	-
Reduction in non-petroleum exports	100.0	-	-
Income from reinsurance	300.0	200.0	-
Donations	150.0	-	-
Additional emergency imports	300.0	-	-
Total	150.0	-	-
Percentage in relation to imports			
<u>b/ 1984 c/</u>	0.9	-	-
<u>Medium-term effects</u>			
Construction sector			
Gross production	179.0	416.0	261.4
Added value	88.8	206.4	129.7
Percentage in relation to 1984 <u>c/</u>	6.2	14.4	9.1
Indirect effect on added value from other sectors	76.2	177.0	111.2
Total effect on added value	165.0	383.4	240.9
Percentage in relation to GDP for 1984 <u>c/</u>	0.6	1.3	0.8
Employment directly created	60.8	141.5	88.5
Percentage in relation to numbers employed in construction in 1984 <u>d/</u>	8.9	20.6	12.9
Indirect creation of employment	23.1	53.8	33.8
Total creation of employment	83.9	195.3	122.6
Percentage in relation to national employment <u>d/</u> in 1984 <u>c/</u>	0.9	2.1	1.3

/Table 7 (concl.)

Table 7 (concl.)

	1985	1986	1987
Fixed capital investment			
Annual investment in reconstruction, including replacement of equipment	274.7	539.9	333.8
Percentage in relation to fixed investment in 1984 <u>c/</u>	5.7	11.2	6.9
Public sector			
Expenditure on reconstruction and replacement of equipment	128.0	223.9	154.5
Percentage in relation to public investment in 1984 <u>c/</u>	5.8	10.2	7.0
Participation in housing programmes	7.6	18.5	4.6
Percentage in relation to participation in 1984 <u>c/</u>	2.2	5.4	1.3
Immediate effects (net)	112.3	-	-
Less: increase in tax income	18.1	39.2	24.1
Net increase in deficit	229.8	203.2	135.0
Percentage in relation to deficit <u>a/</u> in 1984 <u>c/</u>	14.9	13.2	8.8
Percentage in relation to GDP for 1984 <u>e/</u>	0.6	0.5	0.3
External sector (millions of dollars)			
Direct imports of production	42.9	99.8	62.7
Imports of equipment	26.6	49.6	32.1
Indirect imports <u>b/</u>	473.9	1 026.7	631.8
Immediate effects (net)	150.0	- <u>f/</u>	-
Total effects	693.4	1 176.1	726.6
Percentage in relation to imports <u>b/</u> in 1984 <u>c/</u>	4.4	7.4	4.6
Financial sector			
Construction credit (including housing)	38.6	89.7	56.3
Percentage in relation to 1984 <u>c/</u>	6.2	14.4	9.1

a/ Budgetary deficit.

b/ Non-factor goods and services.

c/ This represents the real rate of additional growth, which will be caused by the reconstruction effort, in relation to the variable in question.

d/ Gainful employment.

e/ This represents approximately the increase which the additional deficit will add to the coefficient.

f/ During 1986 there will continue to be a loss of income from tourism (US\$ 270 million which will be offset by a similar amount of income from reinsurance).

V. SUMMARY AND CONCLUSIONS

115. Like the majority of Latin American economies, Mexico's has in recent years been facing serious short-term disequilibria and backlogs of a structural nature. Even though some progress was made in 1983 and in particular in 1984, towards diminishing some of these disequilibria and in the latter year, towards turning round the recessive trends within the economy, factors of internal and external origin --in particular the deterioration in petroleum prices on the international market-- contributed to accentuating these same disequilibria towards the middle of 1985. When the earthquake took place, the Mexican authorities were in the midst of readjusting economic policy, with the aim of stabilizing the economy and reviving production.

116. The earthquake caused considerable damage. In addition to the irreplaceable loss of more than 8 000 human lives, a very rough and preliminary estimate sets direct material damage in the region of US\$ 3.6 billion. Housing, hospitals, schools, public buildings, commercial buildings and some monuments and churches were particularly affected. Tourism was the most affected of the productive activities, due to the considerable losses suffered by the hotel infrastructure. Similarly, a large number of small and medium-sized industrial and commercial firms were seriously affected, above all in the clothing and service sectors, with the consequent additional impact upon employment. Furthermore, it is likely that, in the future, the country will be affected by additional losses in income from tourism --an important item in the balance of payments-- not so much as a result of the damage affecting the hotel infrastructure as of the psychological consequence of the scenes showing the disaster which were broadcast over the mass media throughout the world. Similarly, many firms were affected by rises in costs and public sector income from services declined due to their interruption in such vital areas as long-distance telephone communications --national and international-- and water supply. In addition to the above, it is necessary to take into account intangible but nonetheless appreciable losses resulting from the interruption to a variety of activities caused by the destruction of archives in public offices and particularly in computer systems, as well as the immeasurable social cost and upheaval caused by a collective disaster of this kind.

117. Even more serious than the amount of absolute losses --which an economy of the dimension of Mexico's would perhaps be able to absorb under normal circumstances (estimated losses are set at 2.7% of gross domestic product)-- is the potential effect of rehabilitation and reconstruction on the principal macroeconomic variables, on the expectations of private economic actors and the formulation of economic policy. As just pointed out, the earthquake occurred at a time when the Government was applying an austerity policy in public expenditures, when banks were short of liquidity to face the demand for credit and when once again, serious external restrictions were looming. The requirements of reconstruction will oblige the Mexican authorities to once again revise their economic policy --not necessarily as regards its basic orientations, but certainly as regards its specific content--, since it is here that demands on public funds, increased credit requirements and additional needs for imports originate. In addition, the priorities for public action will be altered (suddenly, it will be necessary to divert resources towards constructing

/dwellings, schools

dwellings, schools and hospitals), while long-standing problems --the geographical decentralization of the economy and urban replanning-- will acquire new urgency with unavoidable consequences on government action and on budgetary expenditure. In other words, the principal repercussions of the disaster upon the Mexican economy are to be found in their qualitative rather than their quantitative potential to alter the evolution of macroeconomic aggregates and to create new priority demands on economic policy management.

118. The above is essentially due to the fact that the earthquake occurred at a time when the Mexican economy, in transition, was very vulnerable. As an illustration, the difficulties which the authorities will face in postponing other programmes underway so as to deal with the emergency created by the need to reconstruct can be cited. As far as public expenditure is concerned, it is worth noting that 40% of the Federal Government budget is already committed by servicing the public debt, and that the systematic cuts introduced into budgetary expenditure (excluding debt servicing) in recent years and particularly in recent months, have narrowed even further the margins of manoeuvre available to reduce fiscal outlays. This fact is only magnified by the new and considerable social demands which public expenditure policy will now have to face. It will prove equally difficult to deal with the additional needs of private agents for credit for reconstruction, within the already extremely limited amounts of funds made available by existing monetary policy, without affecting other priority items such as those intended to promote exports or to protect production and employment. In addition, if reconstruction is undertaken within the framework of the broader objective of decentralizing the metropolitan area (as is apparently the Government's intention), the financial implications will considerably exceed the costs of replacing the losses, since this will require significant complementary investments both in infrastructure and in allied productive activities.

119. In this respect, the economy's import capacity is not only restricted by the unfavourable evolution of external demand for Mexican export products, and particularly petroleum, but also by the fact that the country has devoted more than 50% of currency earnings to debt servicing. The devastating effects of the earthquake and the overwhelming needs of reconstruction --which will affect direct and indirect demand for imported inputs-- are not alien to these adverse tendencies but rather, as has been illustrated, tend to amplify them.

120. It can thus be concluded that it is not possible to consider the earthquakes as an isolated phenomenon. For the Mexican authorities, reconstruction falls within the broader theme of its programme of economic stabilization and reactivation and has clear implications for the conduct of economic policy. As far as the international community is concerned, contribution to reconstruction does not merely or even mainly involve providing on the spot help in replacing losses, but rather allowing the country greater latitude to deal with the complex web of problems which it was already facing before the disaster, and to which the indeferable necessities of reconstruction must now be added. Most of the responsibility for overcoming these problems and undertaking the necessary reconstruction naturally falls upon the Mexicans themselves. Nevertheless, concrete assistance is required from the international community in the form of increased net external financing for the country during 1985-1987, so that the Government may continue to apply its stabilization policies within the framework of a programme which allows for increased economic activity to that originally planned, so as to deal with the sequels of the events

/which took

which took place in September. It will be necessary to seek the specific modalities of such financing either within the framework of the agreements which the Mexican Government may reach with its private creditors, through the concession of new long-term credits by official multilateral bodies, or through a combination of both. As far as more specific assistance in reconstruction is concerned, throughout this report priority areas have been identified --the construction of housing, schools and hospitals; replacement of the communications infrastructure, urban replanning and economic decentralization-- which offer the background for specific collaboration agreements which will have to be drawn up between external sources and the corresponding public and private Mexican agencies.

Notes

1/ See the notes relating to Mexico in the Economic Survey of Latin America and particularly those for 1982 (E/CEPAL/L.268/Add.4); 1983 (E/CEPAL/L.286/Add.16) and 1984 (LC/L.330/Add.12).

2/ See, for example, M.N. Toksoz, The Subduction of the Lithosphere, Transactions, American Geophysical Union, 1974.

3/ In this regard, it should be noted that the current specifications are based on the characteristics of the 1957 earthquake, which was three to four times weaker than those discussed here.

4/ At the time of writing, the "controlled" rate (which is the rate used in about 80% of foreign trade transactions) was quoted at approximately 305 pesos to the dollar, while the "free" rate was quoted at around 370 pesos to the dollar.

5/ The Federal District accounts for 64% of this population; the remaining 36% corresponds to 12 municipalities in the State of Mexico.

6/ In the housing centre of Tlatelolco alone (containing a total of over 100 buildings with an average of more than 100 apartments per building) 23 multiple dwelling units are to be demolished.

7/ This tentative estimate does not cover the total number of schools, multiple dwelling units, health centres, markets and hotels that were affected. Unofficial information indicates that this figure could total nearly 1 600.

8/ This does not include public educational and health buildings, which were counted separately.

9/ The Mexican Association of Insurance Institutions (AMIS) is consolidating the information that had been gathered by insurance companies at the time of writing. AMIS estimates that between 20% and 30% of the insurance claims for damages correspond to buildings of the public sector, most of them corresponding to the para-State company, Aseguradora Mexicana.

10/ This rescheduling exercise is explained in greater detail in table 4.

11/ In February, Mexico set the price of "Maya" oil at US\$ 25.50 per barrel and "Isthmus" oil at US\$ 29.00. The former is now quoted at an average price of US\$ 23.00 (the price ranges from US\$ 22.50 to US\$ 23.50, depending upon the destination) and the latter at US\$ 26.50 (the price varies from US\$ 26.25 to US\$ 26.75).

12/ The gradual rise in interest rates during 1985 (the average cost involved in attracting deposits climbed from 47% in January to 55% in June) is a reflection of the inflationary pressures on the economy and the vigorous competition for funds (Federation Treasury Bonds were ultimately offered at interest rates 13% above the average interest rate on deposits, and inter-bank rates have exceeded 100% on various occasions).

13/ See the speech by the President of the United States of Mexico, Miguel de la Madrid, published by all the mass media on 3 October 1985.

14/ For the purposes of this exercise alone, the following proportions of replacement of the losses indicated in table 1 as at the last quarter of 1985, 1986 and 1987 have been estimated:

	Percentages		
Housing	25	60	15
Health	10	40	50
Education	20	60	20
Public buildings	10	45	45
Communications	90	10	-
Tourism	30	50	20
Water supply facilities	100	-	-
Energy	100	-	-
Transport	100	-	-
Banks	50	50	-
Recreation	50	50	-
Industry and commerce	50	50	-

The weighted percentage of reconstruction would be 21.2% in 1985, 48.4% in 1986 and 30.4% in 1987.

15/ It must be emphasized that these assumptions are for illustrative purposes alone. They neither represent recommendations to the Mexican authorities nor a forecast about the decisions which they may finally take. Consequently it is certain that not all the cost of reconstruction will be additive, since the reformulation of the budget would involve a review of priorities and consequent cutbacks in certain programmes. Neither is it realistic to pose the problem of reconstruction simply in terms of the replacement of what has been lost, as we have emphasized throughout this report. Finally, it is premature to draw up a calendar for reconstruction work.

16/ As has already been said, the installed capacity in this sector is apparently capable of undertaking the reconstruction. It is generally considered that in 1984 it was operating with an average of 40% of underutilized capacity. Over-capacity exists particularly in the cement and steel bar sectors. In addition, there is extensive idle capacity in the supply of services, both as far as specialized labour is concerned (employment generated by the sector in 1984 was 25% below that of 1981), and in firms.

17/ For these and the following calculations we have used the input-output matrix for 1978, drawn up by the Ministry for Planning and Budget.

18/ During recent years the behaviour of imports has been more dynamic --and contractions more pronounced-- in comparison with output. For the 1983-1984 period import elasticity was 5.9 and for the June 1984-June 1985 period 8. For the purposes of the present report we have adopted an elasticity of 5, which may well prove conservative.

19/ The budgetary authorities have announced their decision to review the system of auctions in operations on the special open market and also to introduce a compulsory reserve item so as to facilitate credit for reconstruction.

Annex

SOME REFLECTIONS ON RECONSTRUCTION

1. With its 17 million inhabitants, Mexico City and its metropolitan area represent the largest human settlement in the world. More than 20% of the population is concentrated within an infinitely small area of the national territory, and this proportion --principally as a result of internal migration-- is growing by more than half a million people every year.^{1/} Although Mexico City and its Valley have for centuries been the very centre of the country's civic, economic and cultural life, their enormous growth and the consequent serious problems began to emerge in the last four decades. In fact, Mexico City and the surrounding areas began their uncommonly rapid metropolitan growth towards 1940 while the most rapid growth took place during the 1960s. Consequently their population doubled over the last 20 years and, what is even more worrying, it will be hard to avoid this occurring again within the next 25 years. This rapid and enormous urbanization has led to an extreme level of civic, economic and cultural concentration which has reached crisis proportions and which it is impossible to ignore when analysing the effects of the recent earthquakes.

2. The metropolitan area contributes 44% of Mexico's GDP; occupies 25% of the economically active population (33% of public employees); 20% of the federal budget is spent there and it absorbs 33% of public investment. While the area covered by the Federal District has already started to grow at a much slower rate, the megalopolis is extremely dynamic and, in view of the natural financial limitations, it will prove difficult to put a halt to the deterioration in many indicators of urban well-being. As an illustration, we may mention that as far as dwellings are concerned, the unfulfilled challenge to meet the needs of 800 000 families in low quality housing will have risen to 2.5 million families at the beginning of the century. 80% of households are supplied with drinking water and 70% of the population benefit from waste water disposal. If the present growth continues, in the year 2000 only 70% of households will have drinking water and waste water disposal will be provided to only 60% of the population. With 2.5 million vehicles (most of which are private cars) Mexico City is faced with enormous traffic problems; it is estimated that in 2010 this number will have risen to 7 million, causing enormous problems to the environment, transport and urban congestion. Pollution increased by 150% in only ten years and is already critical by international standards; 78% of woodland has already been lost and deforestation is claiming 1 000 hectares each year. In spite of this, the city has smaller fiscal resources to face these problems which are continually increasing as the population grows and exerts increased pressure on resources, infrastructure and urban land.

3. This critical situation is the starting point for any analysis of the effect and way of facing the problems posed by the earthquakes of 19 and 20 September, which --suddenly and painfully-- added their toll to the whole set of problems which have come into existence in the Mexican capital. On the one hand, the earthquake highlighted the fragile nature of the dense concentration of population and resources in the metropolitan area; if the earthquake had occurred during working hours, losses of human lives would have been on an unimaginable scale. In addition, if the effects of the disaster are added to the sum of problems and long-standing areas of backwardness which were affecting the metropolitan area, it will be easy to understand why it is necessary for reconstruction to be conceived within the context of an integrated and long-term project. If things are placed in perspective, international co-operation offered to Mexico --both financial and technical-- would be used in the

best possible way. It is not a question of diminishing the unique and considerable impact of the earthquakes, but rather of providing the strategy for reconstruction with a suitable and realistic framework.

4. It is within this context that a certain number of considerations are proposed here as a means of contributing criteria which may be of use in the formulation of the Reconstruction Programme, the task for which the Mexican authorities are planning. Consequently elements of analysis are set out which attempt to link together coherent short, medium- and long-term actions, while keeping in mind the outline and overall vision contained in various governmental plans and programmes such as the National Development Plan, the Development Programme for the Metropolitan Area of Mexico City and the Central Region 2/ and the Programme for Urban Replanning and Ecological Conservation for the Federal District (PRUPE). These documents, together with information from studies undertaken by the Federal District Department and other institutions provide elements which are worth taking into consideration in order to build a framework of analysis and a precise time scale at the time of defining priorities and schedules for the reconstruction of Mexico City.

5. This task is important, since as pointed out in previous chapters, the enormous reconstruction tasks will unfortunately take place within a particularly sensitive set of economic and financial circumstances. Careful definition of priorities for the financial resources which will be involved is consequently of prime importance. This implies having a clear understanding of the short, medium- and long-term dynamics of the capital, and which point towards a progressive stabilization of its population and activities, particularly in the Federal District itself. If the hypothesis which has been adopted and which assumes stabilization or "urban transition" is confirmed, the long-term horizon within which reconstruction has to be conceived would seem to indicate highly specific land use for a major part of the central area affected by the earthquake, in which, as has been suggested above, it would not be advisable to construct new large-scale buildings.

6. Thus, once the emergency and rescue operations have been completed, the National Reconstruction Commission, presided over directly by the President of the Republic, will have to assume its responsibility for the arduous task of reconstruction. It is at this point that some preliminary observations about these tasks should be made. Four main assumptions or principles will help to direct and define the outline of reconstruction as well as making it coherent over time: first of all, the social and human problems make replacement of the damaged or destroyed housing as quickly as possible a priority task (their number is estimated at around 30 000). Secondly, as the National Development Plan and other programmes have indicated, reconstruction should help encourage greater decentralization of the congested metropolitan area; as a prerequisite for this it is necessary to successfully relocate many jobs outside the metropolitan area of Mexico City (ZMCM). Thirdly, it is necessary to bear in mind the need to link work aimed at restoring the ecology of the capital to the physical reconstruction tasks. This involves not only possessing a long-term view, but attempting to distribute the benefits as equitably as possible. This task could be initiated --but not exhausted-- within the central zone of the Federal District which was most affected by the earthquake. Fourthly and finally, it is advisable to relate reconstruction tasks to economic and financial parameters consistent with the overall macroeconomic framework which the country must define in the face of the series of mishaps which have affected it.

7. From these four assumptions it is quite clear that it will be necessary to possess an integrated view of the problems faced by Mexico City and its metropolitan area, and to place the tasks of reconstruction within a time scale: it would be neither technically nor financially advisable to attempt the reconstruction in an extremely short period, nor to lose sight, as a result of immediate preoccupations, of the need to take into account ecological or decentralization considerations which it is vital to deal with in Mexico City.

8. As far as the short term is concerned, this period must follow immediately upon the emergency period which is reaching its end and must not last more than six months as far as certain tasks are concerned. Within this period, it will be equally important to carry out specific urban replacement and renewal operations, and to avoid starting works or tasks which will later constitute obstacles to the basic activities of structural transformation. In other terms, care should be taken to avoid precipitated and partial actions which would be inconsistent with an integrated and long-term project. There will be three types of priority activity within this period: the replacement of housing; complete repair of the priority urban services 3/ and, together with this, the restoration of as many of the jobs as possible and, once a precise inventory of all the damage has been drawn up, the execution of the necessary geological, economic, legal and financial studies. This is necessary in order to set up standards, regulations and legal provisions as well as to design specific ad hoc financial mechanisms for undertaking the complex task of reconstruction on firm bases.

9. As far as the replacement of housing is concerned it would be advisable to attempt first of all to accommodate those persons who have lost their housing in the earthquake, in buildings which were already completed or close to completion but unoccupied at the time of the disaster. This of course includes the stock of housing owned by the State (Institute of the National Housing Fund for Workers -INFONAVIT-, Housing Fund for State Workers -FOVISSTE- and the National Fund for Low-Cost Housing -FONHAPO), but also those owned by private individuals. In this respect it is worth mentioning that the economic recession of recent years has left a large number of buildings unfinished and unoccupied and these could be made ready for use even though they are not completed. Similarly, it would be possible to offer alternative housing facilities outside the ZMCM (metropolitan area of Mexico City), where and whenever a sufficient number of jobs is available. In order to develop these programmes it would be necessary to envisage credit or fiscal support from the Government both for the builders or owners of buildings and for the occupiers, who could either rent or purchase the dwellings made available for their use. A second possibility which could be given priority in working-class and low-income quarters would involve immediately providing backing for building and repairs to housing carried out by the people themselves. In this respect, the Federal District Department has specific programmes and the Mexican Government adequate experience. Nevertheless this would require some --but not very large-- financial support, the provision of stocks of materials on the spot and the simplification of formalities involved in obtaining loans and in registering property. As far as possible, the improvised construction of "temporary" lodgings must be avoided. Experience in almost all developing countries has demonstrated that far from being really temporary, such solutions have a tendency to perpetuate themselves and consequently lead to the degradation of the habitat of those who set up house there for emergency reasons.

10. As far as the complete restoration of urban services is concerned, throughout this period it would be necessary to continue repairing and restoring the drinking water supply, electricity and telecommunications services. For the same reasons, it would be desirable to, as far as possible, restore the damage to the road network and maintain continuous health assistance and supplies of food and other basic consumer products to the regions most affected. If the inevitable budgetary problems raised by such tasks are set aside, Mexico possesses sufficient resources and effective stimulus and credit mechanisms --such as the National Company for Popular Subsistence Products (CONASUPO) and the National Fund for Workers Consumption (FONACOT)-- which it is possible to set in operation and extend under preferential terms to the victims of the earthquakes. In addition, it must be remembered that international help in ample proportions has been provided in these items. Foreign equipment will probably be required in the telecommunications sector and, almost certainly, external financial support. Damage to drinking water mains --in particular those in the south of Mexico City-- and to some other installations and means of communication was not particularly severe, although there are many leaks which will require time and resources in order to be repaired. Repairs to schools, markets and some health centres may also be considered within this short-term period. First of all, of the number of schools irreversibly damaged or destroyed (around 450) it may be assumed that it will prove possible to restore a large number within the short or medium term; in any case, by introducing additional emergency shifts and relocating pupils in schools neighbouring those damaged, it may prove possible to mitigate the most urgent problems. The largest markets damaged were La Merced, Jamaica and La Lagunilla. It is possible to relocate the first two in the new Supply Centre in the city, which was not at all damaged and which has ample available space and excellent means of access and peripheral services.4/

11. Damage to health services was considerable and it is impossible to replace the losses --in terms of beds, health centres, etc.-- within the short term. Nevertheless, by relocating personnel and equipment and extending the hours of service it may be assumed that it will prove at least partially possible to restore normal medical services. This does not mean that it is unnecessary to accelerate hospital construction and, above all, to rapidly complete those under construction. During this period it will be necessary to provide travelling medical and paramedical attention in the areas affected by the earthquake. This should also include the provision of psychological care.

12. Similarly, it will not be possible to restore hotel and entertainment services during the short term nor to replace small factories and retail outlets. However, by redistributing demand and points of service it could prove possible to mitigate the problem to a reasonable extent and to at least avoid a crisis. As far as hotels are concerned it must be emphasized that it is important to act rapidly to repair, rebuild and construct hotels, since although the supply of hotel rooms is still plentiful in the city, it is not particularly elastic in view of the differences of quality; Mexico City will be the venue of the World Soccer Cup in 1986, and this will provide a welcome increase in tourism and above all at least partly cancel out, the sense of fear affecting a large part of the demand for such services. The governmental and financial services deserve special mention as their installations were particularly affected by the earthquakes. In this field it is fully possible to relocate a very high proportion of such services (even by decentralization) and to provide supplementary essential services within the short term.

13. The Government appears to have already begun decentralizing some semi-State activities and enterprises; this should free sufficient space to accommodate those personnel who have lost their offices. In addition, approximately two-thirds of the damaged buildings occupied by the public sector were rented. Finally, as a result of the economic crisis there was an excess supply of buildings in Mexico City and this could relieve the shortages caused by the earthquake destruction, even though a considerable rise in rents, which may even affect low-cost housing, is to be anticipated.

14. Finally, it would be desirable that progress be made rapidly and simultaneously in all areas in collecting information, and carrying out research and analysis in order to draw up operational standards and patterns for financial mechanisms. In order to carry out medium- and long-term tasks it is of extreme importance not only to draw up a precise inventory relating to the earthquakes, but also to investigate the sequence of events which took place immediately afterwards. This is necessary not only to improve the prevention of future emergencies but to provide improved planning and standards for buildings, the provision of services and the regulation of urban activities. (It would, for example, be useful to know whether or not there are geological or soil mechanic reasons behind the clear concentration of damage, or whether this was specifically due to the nature and scale of the earthquake, in order to lay down construction standards and prepare land use regulations.) In addition, socioeconomic data and even data relating to the logistics for rescue have been produced as a result of the earthquake and its effects and it would be necessary to take these into account when the time comes to draw up plans for housing, transport and infrastructure.

15. In addition, although the Mexican constitutional framework relating to land use and urban property is quite clear and is greatly inspired by social considerations (Article 27 of the Constitution), problems of regulations exist at specific levels, and it will be necessary to examine these on the basis of long-term criteria. Of particular note are regulations on land use, zoning relating to construction standards, supervision and control, safety; matters deriving from conflicts over the rent or ownership of property or buildings, among others. Finally, if the tasks of reconstruction are to be considered within an integrated project taking into account the need for ecological restoration, not only will new economic resources be required, but also flexible, innovative and socially equitable mechanisms for financing such tasks and allotting resources on the basis of priority and in an orderly fashion. This also requires the study and elaboration of legal measures, savings instruments (bonds, etc.), which could be ready within a relatively short time.

16. As far as the medium term is concerned, while there is no clear boundary between these actions and short term ones, it is possible to begin the former --and even some long-term actions-- as soon as sufficient information and elements are known to confirm the basic assumptions mentioned above. Thus, some of the analyses which have to be carried out over the medium term --between one and three years-- must also be started immediately. It is precisely within this period that the physical construction and rehabilitation of the city will be most intense.

17. Generally speaking, and without making at this time any observations on the existing macroeconomic disequilibria, it may be assumed that if financial resources are available, the country easily possesses the technical capacity to replace practically all of its losses within this period. As an example, consider the fact that in Mexico City alone more than 50 000 dwellings are constructed every year (less than 0.5% of the total stock of dwellings). This means that the extraordinary deficit caused by the earthquake may imply, at the most, an additional supply effort of 25% spread over three years (it must be remembered that available supply exists only as a result of the crisis). Nevertheless, it should not be forgotten that Mexico City --like the rest of the country-- is affected by a considerable housing deficit.^{5/} The plan to recover dwellings should take --although in extended form-- the country's existing institutional, legal and financial mechanisms as its basis. Both the government and the private sector could construct small, safe housing units which are easier and cheaper to maintain and run. Per capita coefficients of open spaces and provision of services should also be improved. This would improve the environment --and land value-- of the areas concerned. Both sectors should construct areas whose use takes into account the long-term requirements of the city; they should encourage urban renewal, increase the value of centrally situated areas which, although old, nevertheless possess valuable urban infrastructure.

18. As far as employment is concerned, many jobs may be recovered within the short term (public offices, small-scale services, workshops, retail outlets), if macroeconomic conditions are favourable. Others would be restored and perhaps in larger numbers as a result of the new demand generated by the revival of construction. In any case, over the medium term it will be possible to relocate craft activities in small factories, while at the same time satisfying the desire for geographical decentralization and ecological restructuring. For example, many small workshops making clothing and other simple products in the central area of the city which were severely damaged, could be relocated in states neighbouring the Federal District, or even in other areas of the ZMCM itself (Metropolitan Area of Mexico City). It would no longer be advisable to locate these once again in the heart of the Federal District which, over the long term, must aim at different uses for its land.

19. One of the main areas in which international support may be provided for the Reconstruction Programme for Mexico City will doubtless be in the field of studies of its urban problems. Encouragement should be given to these and they should take into account the studies and programmes already available in Mexico. An excellent starting point is of course the PRUPE itself, which lays down guidelines for action over various periods and which will need to be revised as a result of the earthquakes. It would be advisable to promote economic, social and urban studies into Mexico City and its metropolitan area of influence. A considerable amount of research is available for this in the Colegio de México, the Universidad Nacional Autónoma de México (UNAM), the Universidad Autónoma Metropolitana (UAM) and the Instituto Politécnico Nacional (IPN). Finally, it is worth mentioning that the United Nations, through its specialized agencies and organisms (UNESCO, UNICEF, UNDP, ECLAC, UNEP) possesses investigative capacities of which concerted use could be made, particularly in association with the above Mexican Academic Institutions. This is of considerable importance as many decisions have to be taken, for which there is not yet sufficient information or elements of analysis to make it possible to weigh up alternatives.

20. More specifically, subject to the availability of more precise studies certain lines for action may be proposed. As far as dwellings are concerned, emphasis should be made on the above remarks concerning the undesirability of constructing dwellings in large and risk-prone housing centres; it is preferable to build new and smaller units in districts which are open to improvement. Nevertheless --if it proves possible-- it would be desirable to leave those areas which are at present unbuilt as open spaces. The same holds for schools and hospitals. In this latter case, in addition to traditional criteria relating to location, criteria which take into account ecological restoration, long-term requirements and the inherent risks in excessive concentration of such services should be added. As far as hotels, recreational, cultural and other private buildings are concerned, it would be desirable to attribute an active role to the private sector and the market mechanism, subject only to long-term priorities and to making sure they benefit from fiscal and credit incentives.

21. Mexico City possesses a critically low level of open space per inhabitant --less than 2.7 square metres-- and this tends to become even lower. On the one hand, it possesses a low average construction density: an average of one and a half floors per building. It follows that it should be possible to considerably increase open spaces while at the same time intensifying use of urban soil for dwelling and other purposes. However, this requires integrated planning of areas and districts. Thus, it would be advisable to seek the complete rehabilitation of the area made up by the traditional and low-income districts (such as Tepito) without altering their character and cultural identity. This must include the replacement and improvement of housing with the active participation of the inhabitants, who should have first claim to ownership of houses, to the increased open spaces and recreational and cultural areas. It is important to take into account the fact that while the inhabitants of such districts are able to contribute labour and to participate in collective forms of organization, they will be hard put to make any substantial economic contribution. Consequently, medium-term reconstruction will have to be financed almost completely by the public sector, on the basis of essentially "self-construction" and "evolutive dwellings" programmes.

22. The same is essentially true of medium income residential areas which were intensely but irregularly damaged, although reconstruction, which must also be based on an integrated project, will probably extend beyond the medium term. Consequently, it is desirable that the Programme adopts a long-term view, and attempts to recover traditional areas, readjust land use, restore open spaces for relaxation and leisure and increase the per capita area and density coefficients. Within these areas it would be necessary to consider long-term forms of financing --perhaps in the form of trust funds, which are very common in Mexico-- which would make it possible to draw funds from a variety of sources and even to include land acquired by compulsory purchase, which in turn, could be paid for with the profit from the rehabilitation of the areas or colonias. In this case the expense should be shared by the Government, private firms and the inhabitants themselves. Finally, as far as those areas which were greatly affected are concerned and in which commercial buildings, offices and hotels located in areas of great commercial value predominate, special suggestions are necessary. Reconstruction could be entrusted to the private sector within the limits laid down by standards for urban development making it possible to increase the rent

of land, and to spread beneficial effects out towards the surrounding depressed area. Within these areas or "axes" it would be necessary to restore the historic value of many buildings and even improve their architectural or urban value. Many public and cultural buildings, together with hotels and entertainment centres could be rebuilt gradually. In any case, these actions would fall within the medium term, and must be based on alternative feasibility studies and follow consultation not only with the inhabitants and owners concerned, but also with the academic professional communities.

23. Finally, and as far as the long term is concerned, it is important to point out the general means of satisfying the principles and assumptions which were initially adopted and to make some brief observations relating to alternative hypotheses for the development of the city and its area of influence. Essentially, long-term considerations simply require the establishment of a standard framework providing conditions for decentralizing and improving the quality of urban life, a requirement about which there is a high degree of consensus in a variety of urban studies and programmes, but above all in the National Development Plan and the PRUPE. In fact, Mexico City and its Metropolitan Area of Influence represent the greatest human settlement in the world and no doubt also one of the richest and most complex. It faces many problems which it is only possible to appreciate adequately in proper perspective. While the circumstances caused by the recent earthquakes aggravate the problems, they cannot alter the long-term goals nor justify setting aside many other questions of a structural nature.

24. In view of all this, in the long term the problems caused by the recent tragedy must be solved through greater decentralization and equality, lower urban growth and greater use of public property. The matrix simulation activity which is being carried out by the Federal District Department with the collaboration of ECLAC quite rightly indicates alternative possibilities for urban life on the basis of the paths followed by the most critical variables. In order for the long-term actions resulting from the need to repair the damage caused by the recent earthquakes not to lead to any substantive deviation from the planned path of development, additional efforts are necessary to ensure a steady convergence towards the goals formerly set. In practical terms this means that the most damaged part of the centre of the city --more or less 35 square kilometres-- needs to be transformed into a demographically stable area; and its land use needs to be altered so that it is essentially devoted to high-level governmental and administrative functions, particularly specialized services and cultural facilities.

Notes

1/ Growth is essentially due to the expansion of the metropolitan area of the State of Mexico; the Federal District's growth rate is far lower, and similar to that of the population in general.

2/ This region includes the bordering States of Mexico, Morelos, Puebla, Quéretaro, Tlaxcala and Hidalgo.

3/ Another undertaking which falls within this period is the demolition of buildings which were totally or partly destroyed and of those which require demolishing for security reasons, as decided by technical experts. This will be an arduous and no doubt costly task.

4/ In fact the total relocation of the old "La Merced" market, precisely at the Supply Centre, was already envisaged in existing urban development plans.

5/ The Federal District Department considers that 800 000 families in the Federal District, i.e., between 3 and 4 million inhabitants are concerned by the need to improve, replace and build housing.

