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# International cooperation to reduce the impact of the El Niño phenomenon

## Report of the Secretary-General

*Summary*

The present report, which is submitted pursuant to General Assembly resolution 52/200 of 18 December 1997, provides an overview of actions taken by the international community and the United Nations system towards enhancing international cooperation to reduce the impact of the El Niño phenomenon. The report elaborates on the scientific and technical aspects of the El Niño phenomenon, and describes existing mechanisms in both the scientific and the social and economic domains that are related to El Niño effects and natural disaster impacts. The report analyses the opportunities and requirements for preventive action in order to make communities at risk more resilient to the impacts of future El Niño events. The report emphasizes the need for multisectoral and interdisciplinary collaboration, especially between the scientific, technological and operational responsibilities of the United Nations system, within the framework of the International Decade for Natural Disaster Reduction. The report provides information about the organization and objectives of the first intergovernmental meeting of experts on El Niño, called for in the above resolution, and projects the ongoing process of integrating El Niño specific concerns in the disaster reduction strategy for the twenty-first century, developed within IDNDR. The report presents recommendations for further action.

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# I. Introduction

1. The global climate of 1997 and 1998 was dominated by an unusually strong El Niño episode, which started to manifest itself through suddenly increasing sea surface temperatures throughout the central and eastern tropical Pacific Ocean in April and May 1997 but came to an end almost as abruptly in the first half of 1998. In accordance with early forecasts made, the strength of the episode was greater than ever recorded, and consequently its disastrous effects were felt worldwide.

2. An opposite phenomenon, known as La Niña, can sometimes occur as a result of extreme cooling of the central and eastern equatorial Pacific over a period of several months. Scientists have predicted a La Niña episode for the period 1998/1999. Relatively less well documented, La Niña (e.g., cool) episodes affect global weather patterns in different ways from El Niño (e.g., warm) episodes. The two are often seen as the most extreme expressions of the El Niño Southern Oscillation Phenomenon.

3. The El Niño phenomenon has a recurring character, often with severe impacts on regional weather patterns, which in their turn can result in large material, economic, human and environmental losses. Recent technological developments and increased international cooperation have greatly enhanced the capabilities needed for the reliable prediction of El Niño episodes, and thereby the potential for preventive actions that can be undertaken to reduce their negative impacts as part of national and international disaster management programmes.

4. The present report is submitted in pursuance of Assembly resolution 52/200 of 18 December 1997, in which the Assembly requested the Secretary-General to facilitate, within the context of the International Decade for Natural Disaster Reduction (IDNDR), a comprehensive strategy towards the integration of the prevention, mitigation and rehabilitation of the damage caused by the El Niño phenomenon, including the development of long-term strategies as part of the Decade's activities, the International Framework of Action for the Decade and the Yokohama Strategy and Plan of Action for a Safer World, and taking into account the relevant parts of the Programme of Action for the Sustainable Development of Small Island Developing States. The Assembly also requested the Secretary-General to promote an intergovernmental meeting of experts in order to facilitate the exchange of information and national experience concerning the El Niño phenomenon; urged the Secretary-General to include the El Niño phenomenon in the ongoing activities of the Decade; and requested the Secretary-General to submit to it at its fifty-third session a report on the implementation of resolution 52/200.

# II. Facts about the El Niño phenomenon

## A. Features and projections

5. Empirical data collected over more than a century show that certain precipitation and temperature anomalies are characteristic of all El Niño (i.e., warm) episodes. The anomalies are believed to be connected to the warmer sea surface temperatures in the Pacific, which typically set off an El Niño episode, as follows:

(a) The eastward shift of thunderstorm activity from Indonesia to the central Pacific can result in abnormally dry conditions over Northern Australia, Indonesia and the Philippines;

(b) Drier-than-normal conditions are usually observed over south-eastern Africa and northern Brazil;

(c) During the northern summer season, the Indian monsoon rainfall tends to be less than normal, especially in the north-west;

(d) Wetter-than-normal conditions are usually observed along the west coast of tropical South America, and at subtropical latitudes of North America (the Gulf Coast) and South America (southern Brazil to central Argentina);

(e) El Niño conditions are thought to suppress the development of tropical storms and hurricanes in the Atlantic but to increase the numbers of tropical storms over the eastern and central Pacific.

6. Sea surface temperatures in the Indian and Atlantic oceans are also modified, which in turn affect the climate over them and in adjacent continental regions. The atmospheres over these oceans interact with the water masses underneath, magnifying initial sea surface temperature deviations even further. The result is indeed a truly global climatic response. At higher latitudes, El Niño anomalies are more variable from one El Niño event to another than in tropical regions, where climate predictions are generally more reliable. Both the 1982/1983 and the 1997/1998 El Niño episodes have been characterized by greater sea surface temperature deviations than those of previous El Niño events on record.

7. Essentially no different than the manifestations of other natural hazards, the damages triggered by El Niño can potentially affect all sectors of economic development and every component of human society, depending on their location and specific climate vulnerability factors. Generally,

the more affluent and powerful communities tend to be less vulnerable to the risks of loss of life and livelihoods associated with El Niño than are the poor and weak. This is true both within localities and communities and between communities, nations and regions.

8. Recent technological developments and increased interest worldwide in natural disaster reduction, based on predictions and warning systems, have contributed to improved skills in the forecasting of El Niño events. The 1997/1998 phenomenon was forecasted earlier and with greater precision than any previous El Niño. There is agreement among scientists that current sea surface temperature distributions in the central and eastern equatorial Pacific are the likely precursors of a 1998/1999 La Niña event, or cool episode. Some La Niña events have been known to last for two years.

9. Improving such predictions and making them more useful continue to pose major challenges to science. Such efforts as the World Climate Research Programme (WCRP) Climate Variability and Prediction (CLIVAR) study and the World Meteorological Organization (WMO) Climate Information and Prediction Services (CLIPS) are undertaken to meet such challenges, in close partnership with meteorological centres operating under the WMO umbrella and others.

## B. Mechanisms for dealing with the El Niño phenomenon

10. Since El Niño events induce extreme regional and local weather-related phenomena, such as floods, landslides, droughts and forest fires, all generic mechanisms developed for natural disaster reduction contribute to the mitigation of El Niño impacts on vulnerable populations. The recurrent nature of El Niño events increases the opportunities to mitigate their effects, based on a sound understanding of past events and the prediction of future events.

11. Experience with past El Niño events shows the importance of dealing with the phenomenon through appropriate development process. Hence the importance of preventive measures based on science and technology, such as early-warning systems and climate prediction and monitoring, as well as measures in the socio-economic domain, such as zoning regulations, building standards, contingency planning and the strengthening of coping capacities.

12. The effectiveness of the response to El Niño depends upon a continuous adjustment to the improvements in analysis in climatology, meteorology, oceanography and related fields of physical and social sciences. The latter is achieved through continued global climate observations, information exchange, and the strengthening or establishment of national weather observation and hydrology programmes.

13. As part of the process in putting in place appropriate development policies, it is necessary to establish effective response in the social and humanitarian sectors. The goal of actions in this category is to prevent disaster vulnerability through social development programmes and information services in order to reduce human suffering and loss of life through injury and disease. Equally important are efforts to assist the recovery process after damage has occurred. At the local, regional and national levels, policies and strategies must be in place that are cost-effective, technically and socially sound, and economically affordable.

14. At the international level, United Nations agencies and others have supported country level structures to respond to the 1997/1998 El Niño event. The UNEP-based Task Force on El Niño, established several years ago, has been supporting public awareness programmes on the 1997/1998 El Niño and other natural disasters in affected regions and countries. Through the various additional United Nations agency El Niño task forces, established in response to General Assembly resolution 52/200 (such as those of the World Health Organization (WHO), World Food Programme (WFP), Food and Agriculture Organization of the United Nations (FAO), United Nations Development Programme (UNDP) and WMO), the United Nations system has provided specific technical support to countries, wherever appropriate. Continuing improvement of the effectiveness of these mechanisms is a major concern for the Inter-Agency Task Force on El Niño, established within the framework of the International Decade for Natural Disaster Reduction. At the country level, the United Nations resident coordinator system provides a key platform for coordinated programming by all relevant United Nations actors.

15. However, not all of the national disaster preparedness structures in place have been able to cope adequately with the 1997/1998 El Niño event. In those instances where performance has been subjected to retrospective assessment, valuable experience has been gained for future El Niño occurrences and the management of other natural disasters.

16. The intergovernmental meeting of experts on El Niño to be held in Ecuador from 9 to 13 November 1998 will bring the most important conclusions from these country-level assessments together. The strategy developed by the International Decade for Natural Disaster Reduction for impact reduction through prevention, mitigation and

rehabilitation of damages caused builds on the capabilities available in the United Nations system as a whole to deal with these issues in a concerted way.

# III. Effects of El Niño

## A. General impact of the 1997/1998 El Niño phenomenon

17. The 1997/1998 El Niño event provided an opportunity to review in specific contexts some of the diverging impacts on different geographical areas of climate deviations. Several countries have suffered exceptionally heavy rainfalls, storms and floods. Others experienced prolonged droughts, while some suffered from both droughts and excessive rains. Damage to agriculture, forests, fisheries, many industries and other economic activities, as well as human settlements, were often extensive and severe. The following is a brief summary of the regional impacts of the 1997/1998 El Niño event:

(a) *South America:*

(i) Guyana was severely affected by drought, while its gold mining industry was severely affected by water shortages;

(ii) The coast of Ecuador and northern Peru received 350 to 775 mm of rain during December 1997 and January 1998, compared with annual norms of 20 to 60 mm;

(iii) Torrential rains affected southern Brazil, south-eastern Paraguay, most of Uruguay and adjacent parts of north-eastern Argentina;

(iv) Rain on Colombia's Pacific coast increased the threat of landslides, while inland forest fires destroyed about 150,000 hectares;

(v) The sea level in the Colombian Pacific rose 20 cm;

(b) *Africa:*

(i) Unusually warm weather was reported in most of South Africa, southern Mozambique and the central and southern portions of Madagascar;

(ii) Heavy rain fell across central and southern Mozambique, the northern half of Zimbabwe and parts of Zambia, causing flash floods in places;

(iii) Kenya was particularly hard hit by flooding; many villages were cut off; the main Nairobi-Mombasa road was made impassable, and thousands of people died of malaria and Rift Valley Fever (RVF) spread by mosquitos breeding in flood waters;

(c) *Asia and the Pacific:*

(i) In Indonesia, parts of Malaysia and the Philippines, long-term dry weather persisted over the region, despite scattered heavy rains. In Indonesia, this sparked off persistent forest fires, with loss of valuable timber reserves and damage to human health from air pollution;

(ii) Tropical storms Les and Katrina caused heavy rains in northern Australia, with severe flooding in Queensland;

(iii) In Hong Kong, 1997 was the wettest year on record, with 3,340 mm of rainfall;

(d) *North America:*

(i) Unusual jetstream patterns over North America led to severe storms in the eastern North Pacific and the west coast of the United States of America; heavy precipitation (100-500 mm) affected the state of California.

## B. The 1997/1998 experience at various socio-economic levels

18. At the time of preparation of the present report, little conclusive information was available on the global losses caused by the 1997/1998 El Niño phenomenon. However, some indications of losses do exist. For instance, the Munich Reinsurance, in its assessment of global overall damages, estimates these at approximately US$ 14 billion worldwide, US$ 6 billion in Asia, US$ 4.3 billion in Central and South America, and US$ 3.5 billion in the United States and Canada. According to the same source, expressed as a percentage of gross national product (GNP) lost, damages were largest in Ecuador (11.4 per cent), Guyana (8.6 per cent), Indonesia (2.0 per cent) and El Salvador (1.7 per cent). Probably one of the most complete national assessments made to date is the one for Ecuador, further discussed in paragraphs 23 and 24 below. This state of affairs indicates an existing gap in the timely assessment of El Niño damage and the provision of reliable statistics to guide future actions. A crucial problem at country level remains how to decide to attribute specific damages incurred to the El Niño phenomenon instead of to normal climatic variability.

19. However, from additional sector-specific statistics available from member agencies of the Inter-Agency Task Force on El Niño (see sect. IV.B below), it can be concluded

that the overall socio-economic losses were considerable in some countries. As an illustration, in Central and South America several proposals were submitted to the donor community for the support of projects to rehabilitate damaged drinking water supply and sanitation systems: in Bolivia in the amount of nearly US$ 4 million, in Ecuador, US$ 1 million and in Panama, US$ 600 000. In Peru, a budget of US$ 5 million was established in the health sector to deal with the ravages of El Niño. In Ecuador, inflation has increased 2.7 per cent since the onset of the phenomenon, while Brazil saw a rise of 0.49 per cent, Costa Rica 1.59 per cent and Mexico 1.17 per cent in the consumer price index.

20. Droughts, floods and storms accounted for emergency situations among vulnerable rural populations in many countries. For instance, in Papua New Guinea the severe drought from April to November 1997 and devastating frost at higher elevations left the country in need of food, clean water, health care infrastructure, transport, communications and logistical support. The food situation deteriorated, with about 1.2 million people critically affected. Following the visit of a United Nations disaster assessment and coordination (UNDAC) team, a United Nations Appeal for International Assistance was launched in December 1997, seeking contributions in cash, kind and services of US$ 4,186,000 in order to cover non-food emergency relief needs.

21. In Africa, thousands of people are reported to have died as a result of the heavy rains that started in October 1997. More than 1.5 million people in southern Somalia and northern Kenya were seriously affected. The World Food Programme has appealed for US$ 17 million to maintain vital relief activities in the worst affected areas in these two countries.

22. Comprehensive studies on the overall impacts of the phenomenon on national economies have so far been limited. One example is the analysis made by the Government of Ecuador, to be used as an input into the intergovernmental meeting of experts on El Niño to be held at Guayaquil from 9 to 13 November 1998 (see sect. V below).

23. Together with neighbouring Peru, Ecuador is one of the countries that is first affected by El Niño events, usually in the form of excessive rainfall. In the current century, Ecuador has been exposed to 29 El Niño and 11 La Niña events. The two El Niño events in 1982/1983 and 1997/1998 have been in the highest range of severity and caused the most damage. El Niño impacts in Ecuador are predominantly related to poor zoning policies, which have allowed human settlements in steeply sloping areas, near river courses and in other areas prone to flooding. There has also been a lack of technical standards for the construction of physical infrastructure (highways, bridges, shrimp ponds etc.) to better prepare for this type of adverse phenomena.

24. The 1997/1998 event was the first to be confronted by Ecuador with a special contingency plan under the responsibility of its Secretariat-General of Planning and the security directorates for national development in the different ministries. The plan defines institutional responsibilities to address the three stages of emergency management: before, during and after an emergency, referring, respectively, to prevention, emergency relief and reconstruction/rehabilitation. The evaluation showed that the country was better prepared than on previous occasions but still not well enough prepared. Deficiencies resulted mainly from overcentralized government operations and a lack of institutional coordination mechanisms. Another contributing factor was the high degree of uncertainty in the predictions of the intensity with which the phenomenon would occur. There was extensive loss of life and livelihoods, damage to homes, infrastructure, crops and livestock, at an estimated overall cost to the national economy of US$ 2,538,000,000.

# IV. Actions taken

## A. National and regional levels

25. Within the 1997/1998 El Niño episode, a large majority of the countries affected by El Niño-induced natural disasters have been engaged in various forms of prevention, mitigation or preparedness activities. These measures are currently being reviewed and analysed, both within the United Nations system, as well as by other relevant regional organizations and technical institutions. These will provide a major input, through case studies conducted at the country and community levels, to the intergovernmental meeting of experts on El Niño to be held in Ecuador from 9 to 13 November 1998 (see sect. V below).

26. Such case studies are also being considered in all relevant regional evaluations of IDNDR, *inter alia*, in the South Pacific at the Seventh IDNDR Pacific Regional Disaster Management Meeting (Fiji, 23–25 September 1998); in Asia as part of the IDNDR/Economic and Social Commission for Asia and the Pacific (ESCAP) regional meeting for Asia on the theme “Risk reduction and society in the twenty-first century” (Bangkok, 23–26 February 1999); and in the Americas within a hemispheric IDNDR conference to be organized in Costa Rica in April 1999.

27. These processes will ensure visible emphasis on El Niño specific natural disaster risks, country requirements for

disaster reduction measures and improved regional collaboration, including institutional capacities for hazard assessment and applied risk management practices, within the IDNDR programme forum of July 1999. Thus, the specific concerns of regions and countries most affected by the El Niño phenomenon will become an integral part of the disaster reduction strategy for the twenty-first century that is being developed within the International Framework for Action for the IDNDR.

28. A number of common denominators for national and regional opportunities for El Niño-related disaster reduction have already emanated from the various assessment and case-study activities referred to above. One such important event was the special session on El Niño organized by the World Bank as part of the tenth meeting of the IDNDR Scientific and Technical Committee (Washington, D.C., 8–12 June 1998). The meeting was structured around four distinct round tables on (a) El Niño activities in Latin America; (b) World Bank efforts in response to El Niño; (c) health issues and El Niño: a perspective from the Pan-American Health Organization (PAHO); and (d) looking towards the future: how to improve long-term forecasting and how to integrate forecasting into development strategies.

29. As a result of these deliberations, major areas for action have been identified that need to be addressed in national and regional approaches towards El Niño-related disaster reduction. The following is a selection of common denominators emanating from the various meetings:

(a) The need for retrospective study of previous El Niño occurrences and the assessment of their impacts at all levels of society;

(b) The need for retrospective assessments to include both a thorough evaluation of scientific and technological performance with regard to monitoring and prediction, and the translation of such activity into operational action in the social and economic fields;

(c) The importance of evaluation and the strengthening of current national and regional capacities for monitoring and predicting future oceanographic and climatic variabilities with regard to technical and human resources;

(d) The need for development of models for projecting and anticipating the likely disaster impacts within the various societal sectors, including the development of public-private partnerships that involve corporate and commercial interests;

(e) The urgency of establishing regional platforms for the exchange of information and experiences, both retrospective and forward-looking, in support of regionally cooperative strategies for action;

(f) The need to formulate multidisciplinary programmes of communication, public information and education at all levels, with regard to future El Niño events;

(g) The need to develop and implement long-term measures to strengthen key infrastructures and basic public services in the social and economic fields, at both the national and community levels;

(h) The need to promote and implement administrative and structural preparedness measures within the public sector, such as decentralization and delegation of resources and responsibilities from the national to provincial and municipal authorities;

(i) The need to implement pre-impact operational contingency measures, including the stockpiling of necessary supplies;

(j) The need to strengthen the organization of pre-impact programmes of public information, with a particular focus on localities and populations most vulnerable to the projected natural disaster impacts, including also comprehensive early-warning strategies.

## B. United Nations system actions

30. Alarmed by the unusual strength of the early stages of the El Niño phenomenon and the forecasts published concerning its anticipated further development in the fall of 1997, the Under-Secretary-General for Humanitarian Affairs of the United Nations Secretariat requested the International Decade for Natural Disaster Reduction to facilitate, within the framework of the Decade, an internationally concerted effort towards El Niño among the organizations of the United Nations system. Aware of the draft resolution on disaster reduction and the El Niño phenomenon (A/C.2/52/L.20), tabled in the Second Committee of the General Assembly at its fifty-second session, the Inter-Agency Steering Committee for IDNDR, at the meeting of its Working Group on 18 November 1997, agreed to establish the Inter-Agency Task Force on El Niño within the framework of the Decade. The Inter-Agency Task Force was convened on 23 January, 14 May and 27 August 1998.

31. In recognition of the importance of concerted United Nations system action on El Niño, the Administrative Committee on Coordination (ACC) recognized within its statement on the International Decade for Natural Disaster Reduction, among other points, the need for an effective inter-

agency approach to El Niño, and called for the necessary support from United Nations Member States.

32. Pursuant to General Assembly resolution 52/200, in particular in fulfilment of its operative paragraph 13, an El Niño strategy for the United Nations system was prepared under the authority of the Under-Secretary-General for Humanitarian Affairs by the International Decade for Natural Disaster Reduction's Inter-Agency Task Force on El Niño and presented to the Deputy Secretary-General of the United Nations Secretariat on 10 July 1998. The strategy, which draws on the lessons learned in 1997 and before, as set out in paragraph 29 above, aims at reducing the impact of the El Niño phenomenon through prevention, mitigation and rehabilitation of damages caused, and is composed of the following elements:

(a) Assessment of the latest El Niño phenomenon through retrospective research concerning the understanding and prediction of climate conditions, as well as the local impact of the phenomenon;

(b) Improvement of the links between scientific and technical activities and United Nations operations in development, capacity-building and humanitarian assistance at all levels (global, regional, national and local);

(c) Establishment of preventive measures, both scientific and technical, such as early-warning systems and climate prediction and monitoring, and socio-economic, such as contingency measures and strengthening of coping capacities;

(d) Coordinated and concerted United Nations system information on El Niño, through information packages to the media.

33. The United Nations is thus firmly committed to an effective and coordinated system-wide strategy that is capable of bringing together the scientific and the operational capacities of the whole Organization. Under the authority of the Under-Secretary-General for Humanitarian Affairs, the strategy is being translated into concrete actions, and actions are being implemented with contributions from partner agencies. The Decade secretariat continues to coordinate relevant El Niño issues within its responsibilities as task manager for the Inter-Agency Committee on Sustainable Development (IACSD), with particular emphasis on the preparations for the special session on the five-year review of the Programme of Action for the Sustainable Development of Small Island Developing States to be held during the fifty-fourth session of the General Assembly, in 1999.

34. The intergovernmental meeting of experts on El Niño, called for in Assembly resolution 52/200 and to be organized and hosted by the Government of Ecuador within the framework of the Decade, will be held from 9 to 13 November 1998, with wide participation from partner agencies in the United Nations Inter-Agency Task Force on El Niño (for more details, see sect. V below).

35. Based on their specific mandates and fields of special expertise, numerous United Nations agencies have contributed to concerted action in fulfilment of Assembly resolution 52/200. Examples of such actions are described below.

36. An international IDNDR conference on early-warning systems for the reduction of natural disasters (Potsdam, 7–11 September 1998), which was organized with the full support of the German Government, brought together 370 scientists, public officials and representatives from the United Nations system, non-governmental and international organizations, as well as various professional, commercial and civic individuals from 86 countries, among them many from El Niño affected regions. The conference held a special session on monitoring and early warning related to the El Niño phenomenon, which was organized by the World Climate Research Programme (WCRP) and the European Centre for Medium-Range Weather Forecasts (ECMWF). Reports presented demonstrated significant recent technological advances in long-term forecasting of climate anomalies, such as El Niño episodes, which enables more rapid and extensive warnings than ever before. The results of the conference will thus form an important input into the first intergovernmental meeting of experts on El Niño (see sect. V below).

37. The second session of the Inter-Agency Committee on the Climate Agenda (IACCA) was held at Geneva on 16 and 17 April 1998. The meeting paid significant attention to the 1997/1998 El Niño phenomenon, and placed particular emphasis on the work carried out by the Inter-Agency Task Force on El Niño within the framework of the International Decade for Natural Disaster Reduction. IACCA strongly supported the proposal to prepare a retrospective of the 1997/1998 event, and agreed that this should be considered a major climate agenda activity. The Committee furthermore recommended that the scientific and technical retrospective be combined with the socio-economic analysis, and that the coordination of the scientific and technical aspects of the retrospective would remain within WMO.

38. WMO, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and its Intergovernmental Oceanographic Commission (IOC) support regional and national assessments of monitoring and prediction capacities, *inter alia*, through a series of regional WMO-coordinated climate outlook forums, such as those held in Africa in

September 1998. The first, at Mombasa, Kenya, was concerned with eastern Africa (i.e., the Horn); the second, at Harare, was concerned with the southern (i.e., Southern African Development Community (SADC)) countries on the continent. Representatives of relevant meteorological services and universities of each region, regional drought monitoring centres (Nairobi and Harare), WMO, the International Research Institute for Climate Prediction and other international centres with capabilities for climate prediction attended each meeting in order to establish probability distributions to indicate the likelihood of below-, near- or above-normal rainfall for each area.

39. WFP has established a global task force on El Niño that supports national food security assessments; FAO supports assessments of El Niño-induced impacts in the agricultural sector; WHO has engaged itself in programmes of El Niño impact assessment in the national health sectors. The regional commissions develop and apply models for social and economic impact assessment, and the Bretton Woods institutions have formulated both regional and country-specific assistance programmes. UNDP is supporting El Niño-related case study projects for the purpose of integrating disaster mitigation and preparedness into development and rehabilitation programmes. In the majority of cases, these activities are successfully coordinated by the United Nations resident coordinator system.

40. The 1997 meeting of the ESCAP Typhoon Committee made a number of recommendations towards the strengthening of the response to El Niño and associated circulation patterns at country level, as well as at the level of institutions. ESCAP has been able to report on considerable progress towards the implementation of these recommendations since January 1998. In particular, the ESCAP secretariat initiated collaboration on research with various research institutions in the region. ESCAP-supported initiatives in several member States included mitigative measures to prevent water shortages during droughts and public information campaigns through the media.

# V. Intergovernmental meeting of experts on El Niño

41. The meeting of experts has been conceived in pursuance of General Assembly resolution 52/200, based on the notion that credible strategies for the reduction of natural disaster impacts of future El Niño occurrences must be built on effective dialogue and cooperation between the scientific and technological dimension of the United Nations system and its operational responsibilities in the fields of disaster management and humanitarian assistance, sustainable development, and technical cooperation and capacity-building. Social and economic impacts of natural disaster induced by El Niño can only be effectively assessed and ultimately reduced if the scientific parameters of the El Niño phenomenon are fully understood.

42. Through the generous support of the Government of Ecuador, the intergovernmental meeting of experts will be held at Guayaquil from 9 to 13 November 1998 within the framework of the International Decade for Natural Disaster Reduction. The meeting will provide important global and regional information, and will give impetus to the development of an internationally concerted and comprehensive strategy towards the integration of the prevention, mitigation and rehabilitation of the damage caused by the El Niño phenomenon.

43. The meeting will follow and draw on the findings of a number of specialist regional scientific meetings. Its overall objectives are:

(a) To evaluate how well the internationally coordinated systems for providing current and advance climatological and weather-related information performed during the 1997/1998 El Niño, and to recommend priorities and initiatives to improve the effectiveness of those systems for future El Niño and other climate-related emergencies;

(b) To assess climate risk in the context of various dimensions of society and begin the formulation of long-term strategies that integrate preparedness and risk management into development strategies;

(c) To link this scientific work with the United Nations system's responsibilities in the economic, social, environmental and development fields.

44. WMO, in collaboration with UNESCO/IOC, has agreed to coordinate the preparation of the scientific and technical component of the meeting (mostly on days 1 to 3) within the framework of the United Nations Inter-Agency Task Force on El Niño. Other inputs will be made by the World Bank, the Department for Economic and Social Affairs of the United Nations Secretariat, UNDP and the United Nations Research Institute for Social Development (UNRISD) and others (days 4 and 5).

# VI. Conclusions and recommendations

45. The 1997/1998 El Niño event has caused natural disasters in vulnerable regions around the globe. The experience has once again demonstrated the need for innovative strategic approaches at the local, national, regional

and global levels to strengthen our resilience to such consequences. Events have confirmed the strategic relationship between disaster reduction, social and economic well-being and the protection of vital natural resources for future generations. As indicated in the report of the Secretary-General on strengthening of the coordination of emergency humanitarian assistance of the United Nations (A/53/139-E/1998/67), there is much more that can be done to ensure that, where possible, such disasters are prevented, and that, where this is not possible, a rapid coordinated and effective response is mounted. In order to meet this challenge effectively, science, technology and operational entities in the social and economic fields must work hand in hand. The United Nations offers the unique platform for the comprehensive and systemic study of root causes, evaluation of capabilities, analysis of needs and formulation, as well as implementation of preventive action. The Inter-Agency Task Force on El Niño, coordinated within the framework of the International Decade for Natural Disaster Reduction, will ensure that this opportunity for improving international cooperation to reduce the impacts of future El Niño events is not lost.

46. The following recommendations have been developed in order to ensure continued effective and coordinated implementation of General Assembly resolution 52/200, with a particular view to establishing a coordinated approach by the United Nations system and integrating El Niño-related disaster reduction needs of countries and communities at risk into the disaster reduction strategy for the twenty-first century that is being developed within the concluding evaluation of the International Decade for Natural Disaster Reduction, in 1999:

(a) The prevention of negative impacts from future El Niño events must be the highest priority in international disaster management. This should be a guiding principle for further system-wide action on El Niño;

(b) There is a continuing need for active collaboration and the exploitation of synergies between science, technology and the operational entities of institutions within the United Nations system in order to further improve the understanding of the effects of El Niño, the prediction of potential disaster impacts and the development of preventive actions;

(c) The work of the Inter-Agency Task Force on El Niño should be continued, and considerations on El Niño should be integrated into the planned review of IDNDR at the substantive session of 1999 of the Economic and Social Council;

(d) There should be broad-based, substantive and financial support from within the United Nations system and its Member States for the intergovernmental meeting of experts on El Niño to be held in Ecuador from 9 to 13 November 1998;

(e) The findings of the meeting of experts, including the plan for future action, should be presented to the Commission on Sustainable Development at its seventh session in April 1999, and to the Council at its substantive session of 1999 to support the deliberations to be held under the planned review of IDNDR;

(f) The recommendations expected to emanate from the meeting of experts, as far as these are relevant to the particular situations of small island developing States, should be submitted for the consideration of the Commission on Sustainable Development at its seventh session, and for the consideration of the General Assembly at its special session, in 1999, on the five-year review of the Global Programme of Action for the Sustainable Development of Small Island Developing States;

(g) Adequate consideration of the El Niño-related concerns of countries at risk of impact should be made in the development of United Nations system advocacy roles and in the promotion of relevant strategies and policies at all levels.