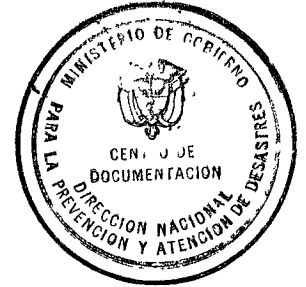




WORLD METEOROLOGICAL ORGANIZATION



PROGRESS WITH IMPLEMENTATION
OF
WMO'S ACTIVITIES IN SUPPORT OF THE IDNDR

Geneva, March 1992

AREAS OF RESPONSIBILITY

1. The World Meteorological Organization (WMO) has responsibility within the United Nations system for activities relating to meteorology, climatology and operational hydrology. The Organization takes a major role in the mitigation of disasters caused by:

- Tropical cyclones
- Floods
- Droughts
- Tornadoes and severe thunderstorms
- Other severe weather phenomena such as storm surges and major snowstorms and extremely high or low temperatures
- Landslides and avalanches.

2. WMO contributes to the mitigation of other types of disaster through its involvement in the meteorological and hydrological aspects of insect plagues and forest fires and in the dissemination over its Global Telecommunication System of tsunami warnings and certain seismological data.

PROGRAMMES INVOLVED

3. All the major programmes of WMO contribute to the aims of the IDNDR to a greater or lesser degree. These include:

- World Weather Watch Programme
- Hydrology and Water Resources Programme
- Applications of Meteorology Programme
- Atmospheric Research and Environment Programme
- World Climate Programme
- Education and Training Programme
- Technical Co-operation Programme.

4. While these Programmes are regularly adapted to match prevailing conditions and demands, they are long-term in nature: they have a considerable history and are expected to continue well into the future. It is very obvious, however, that many of WMO's activities have the same aims as those of the IDNDR. One of WMO's major objectives has always been the reduction of loss of life and economic damage from natural disasters and its activities will continue throughout and beyond the Decade. Several of these activities, however, are being intensified and accelerated during the IDNDR to emphasize WMO's role with the aim of saving yet more lives and reducing the level of damage still further.

5. When it met in May 1991, Eleventh WMO Congress was informed of the background and structure of the IDNDR, and expressed its satisfaction with the support that WMO was giving to the Decade. It was seen as important that WMO continue to support Decade activities and to this end Congress adopted the WMO Plan of Action for the IDNDR.

6. When adopting the WMO Plan of Action for the IDNDR, Cg-XI specifically requested the Executive Council (EC) to review and amend the Plan periodically. In future, therefore, the Council is expected to consider the implementation of the three special projects currently mentioned in the Plan and to add or delete projects as necessary. EC decided that the first such review would be carried out at its session in 1993. In response to its request the Secretary-General will report to EC in 1993 on progress with implementation of the three projects and could submit additional project(s) for possible inclusion in the WMO Plan of Action for the IDNDR. A proposal from the Hurricane Committee, such as for example, support to the upgrading of meteorological telecommunications and data handling for hurricane monitoring and forecasting, may be added as a new special project to the WMO Plan of Action for the IDNDR.

SPECIAL INITIATIVES

7. In addition to the long-term activities which are undertaken as part of WMO's major programmes, plans have been developed for three projects specially geared to the goals of the IDNDR. These projects are designed to be very cost-effective and to have a significant impact at both international and national levels. It is anticipated that additional projects will be initiated at later stages in the Decade to cover different regions of the globe and different areas of endeavour.

Tropical Cyclone Warning System for the South-West Indian Ocean Region

8. The objective of the project is to substantially upgrade the tropical cyclone warning system in the South-West Indian Ocean region through the application of meteorological satellite and microcomputer technology and the transfer of scientific knowledge.

9. The project is being implemented by Members of the RA I Tropical Cyclone Committee for the South-West Indian Ocean in co-operation with WMO, with assistance from the European Development Fund (EDF) for island countries, and FINNIDA for mainland countries.

10. At the request of the Committee and within the framework of the WMO Plan of Action for the IDNDR, an RA I Roving Training Seminar on Tropical Cyclone Forecasting was organized by WMO in Maputo, Mozambique from 28 October to 1 November 1991 for English-speaking countries and in St. Denis, Réunion from 4 to 8 November 1991 for French-speaking candidates. Emphasis was placed on practical rather than theoretical training and comprised lectures, exercises (particularly exercises on satellite and radar data interpretation), demonstrations and group discussions. The seminar in Maputo included "hands-on" training on the use of computer programs, specifically the Australian Tropical Cyclone Workstation (ATCW), to support operational tropical cyclone forecasting.

11. Based on experience gained during the seminars in both Maputo and Réunion, the participants unanimously agreed that the seminars were highly successful and achieved their objectives of providing support to the transfer of technology and promotion of human resources development. The seminars made specific recommendations on future training for tropical cyclone forecasters in the South-West Indian Ocean region as required for upgrading of tropical cyclone warning services in the region.

- (a) Roving lecture services on specific subjects to be organized by WMO for the island countries of the South-West Indian Ocean during the off-cyclone season;
- (b) Attachments or study tours to be arranged for tropical cyclone forecasters from the region to the cyclone warning centres in Réunion, Madagascar and Mauritius and to advanced centres outside the region such as RSMC Miami Hurricane Center, the Australian Tropical Cyclone Warning Centres and the African Centre for Meteorological Applications for Development (ACMAD);
- (c) A training course on tropical meteorology and tropical cyclone forecasting, similar to that organized by the USA in co-operation with WMO, to be held at the Australian Bureau of Meteorology for senior tropical cyclone forecasters of the Southern Hemisphere during the off-season (May to October).

COMPREHENSIVE RISK ASSESSMENT

12. The objective of this project is to promote a comprehensive approach to risk assessment and thus enhance the effectiveness of efforts to reduce the loss of life and damage caused by flooding, by violent storms and by earthquakes. The modern technology involved will include geographic information systems, remote sensing and seismic hazard studies.

13. An international team of experts will be formed to undertake the project. The experts will be drawn largely from developed countries, and a demonstration project will be located in a developing country. The region chosen will be subject to a range of flood and flood-related hazards, severe storms, earthquakes and volcanic activity. Account will be taken of the potential impact on these of anticipated future changes in climate in the region. As regards seismic hazard, the region chosen will have a history of occurrence of earthquakes not necessarily having caused major damage.

14. The project will see the preparation of a comprehensive report on the causes, current risks and possible future probability of flooding from different causes, the risk of major storms and the occurrence and consequences of earthquakes and volcanic activity. The combined risks will be discussed and analyzed. The various items of technology used in the project will be generalized and presented in forms appropriate for international transfer. The project will be used as a basis for training local experts and those from other developing countries in the use of the technologies involved.

15. This project was approved by WMO Congress at its last session in May 1991. A co-ordination meeting is being held in Geneva from 23 to 25 March 1992 at which it is intended to review plans for the project, consider current expertise and past activities in risk evaluation and develop recommendations for the further implementation of the project. Three members of the Scientific and Technical Committee will attend this meeting, together with representatives of a number of intergovernmental and non-governmental organizations.

SYSTEM FOR TECHNOLOGY EXCHANGE FOR NATURAL DISASTERS (STEND)

16. The objective of this project is to identify and facilitate the transfer of technology for use in reducing the impact of natural disasters. Technology relevant to all the types of natural disasters encompassed within the IDNDR is to be included. This technology will include instrumentation and other equipment, technical manuals and other guidance material and computer software.

17. A system (STEND) will be developed for collecting information on relevant operational technology and advising potential users on the purpose, nature and conditions for acquisition of the technology concerned. STEND will be modelled on the highly successful Hydrological Operational Multipurpose System (HOMS) of WMO and there will be close co-ordination between the two so as to take advantage of areas of common interest and to avoid duplication. HOMS will provide the technology needed for hydrological disasters such as floods and droughts.

18. STEND will rely on inputs provided by national institutions with expertise and experience in the specific topics of disaster reduction technology and on national focal points whose role it will be to channel information into STEND and distribute information from STEND at the national level. In view of this, the system will operate with a small international staff and it can be expected to be very cost effective.

19. This project was approved by WMO Congress in May 1991 and an initial planning meeting is planned for November 1992. Discussions are proceeding with national authorities on the provision of support (particularly staff) for the project.

ICSU/WMO DEMONSTRATION PROJECT ON TROPICAL CYCLONE DISASTERS

20. Following the second meeting of the STC, links between WMO and ICSU have been further strengthened and agreement reached on a number of joint activities.

21. The project is essentially a research project with an emphasis on the practical applicability of the results obtained. WMO therefore sees its Tropical Meteorology Research Programme as providing a major input.

22. A sub-committee has been established under the above WMO Programme to investigate new cost-effective means of using unmanned aircraft observing systems, otherwise referred to as "drone reconnaissance". A representative of ICSU is participating in this work.

23. A joint symposium will be held in China in October 1992, with ICSU taking the lead, and a workshop is planned for Mexico at the end of 1993 in which WMO will take the lead.

24. WMO considers that, in the light of these developments, the original description of this project should be modified somewhat so as to clarify that meetings are not limited to Asia and that the transfer of currently available methodologies may be between any regions and not just from the Caribbean to Asia.

25. As regards the establishment of a Centre for Tropical Cyclone Sciences, there are as yet no funds to support its establishment and, of prime importance, the exact role of such a centre has yet to be clarified. In view of this, WMO feels that consideration should first be given to the on-going programmes of various activity centres that have already been established in the Asian region.

26. A field experiment conducted in the North West Pacific in 1990 has provided inputs to a number of research activities on tropical cyclones which are now making valuable contributions to this project.

OTHER ACTIVITIES OF IMPORTANCE TO IDNDR

Tropical Urban Climate Experiment

27. In the WMO Third Long-term Plan (TLTP) it is stated that "many of the activities during the International Decade for Natural Disaster Reduction (IDNDR) will directly or indirectly relate to climate applications, i.e. will require input of both climate information and knowledge. There will be an increasing need for climate information in land use planning, especially for human settlements, as well as a need for near real time climate information, i.e. "operational climatology", in disaster reduction schemes and for other applications."

28. In one of the projects in the WCP, entitled TRUCE (Tropical Urban Climate Experiment), direct reference is made to IDNDR. This project is aimed at improving our knowledge about tropical urban climates in order to provide a firmer basis for planning and managing the fast growing cities in low latitudes.

29. A major activity related to TRUCE is a Technical Conference on Tropical Urban Climates planned to be held in Dhaka, Bangladesh, from 11 to 16 January 1993. This conference, which is organized jointly between WMO, the International Federation for Housing and Planning (IFHP), the International Council for Building Research Studies and Documentation (CIB) and the International Geographical Union (IGU) will cover topics of concern to IDNDR as well as focus on the future activities of TRUCE. It is WMO's hope that this Technical Conference on Tropical Urban Climates will be of interest to IDNDR and that ways can be found to incorporate aspects of special relevance to the Decade in the programme of the conference.

First Joint Session of the WMO/ESCAP Panel on Tropical Cyclones and the ESCAP/WMO Typhoon Committee

30. The first joint session of the two intergovernmental tropical cyclone bodies, i.e. the WMO/ESCAP Panel on Tropical Cyclones for the Bay of Bengal and the Arabian Sea and the ESCAP/WMO Typhoon Committee, was convened by WMO and ESCAP at Pattaya from 18 to 27 February 1992. This was in response to the request made by the WMO Regional Association II (Asia) that efforts be made to develop closer co-ordination towards achieving a common goal in tropical cyclone mitigation with discussions focussed on activities of mutual interest in the respective Regional Co-operation Programmes.

31. Recognizing the importance and benefits of inter-regional co-ordination, the joint session felt that co-ordination of programmes and activities of the two bodies could be further enhanced through frequent exchange of information between the Typhoon Committee Secretariat (TCS) in Manila and the Technical Support Unit (TSU) in Dhaka. To this effect, it was agreed that activities under TCDC arrangements should be promoted among all Members of the Panel and the Typhoon Committee, for example, provision of consultancy services, forecasters' attachment to advanced centres, group training events, exchange programmes for forecasters and study tours.

32. The advantages and benefits gained from the first joint session were recognized and it was agreed that another joint session of the two bodies should be held in a few years time.

Monitoring of flood forecasting systems

33. The WMO Regional Tropical Cyclone Bodies undertake hydrological activities which concentrate on the assessment of risk and forecasting of floods resulting from tropical cyclones. Particular attention is now focused on the routine monitoring of designated flood forecasting systems with the aim of exchanging experience in their operation and seeking to improve their performance.

34. A new methodology, "The Management Overview of Flood Forecasting Systems (MOFFS)", has been recommended by all the five WMO tropical cyclone bodies for use by their Members. An important aspect of MOFFS is that it is designed to detect and record deficiencies in the flood forecasting systems being used. Various means may then be sought for their improvement, drawing on national, regional or international expertise and funding, as appropriate.

35. The WMO Secretariat is keeping a register of all systems so designated and will request the national experts responsible to rate the performance of their systems on a regular basis and to inform the Secretariat of the outcome. These results will be reviewed and discussed at various meetings of national experts and will provide a very valuable basis for the exchange of practical experience between the individuals and national services concerned and the assessment of national and regional support in the field of flood forecasting.

Involvement of Non-Members of WMO in TCP activities

36. The RA V Tropical Cyclone Committee for the South Pacific and South-East Indian Ocean was re-established by Regional Association V of WMO as a working group of the Association to promote and co-ordinate work in the South Pacific and adjacent areas for accelerating action to reduce the loss of life and damage caused each year by tropical cyclones and associated phenomena. In addition to twelve Members of WMO, seven non-Members of WMO, namely, Cook Islands, Kiribati, Niue, Tokelau, Tonga, Tuvalu and Western Samoa were invited to designate experts to participate in the work of the group. These non-Members of WMO are small island states or territories with small populations and economies.

37. Observations from small island states and territories are indispensable inputs to tropical cyclone analysis and forecasts by the TCWC, Nadi and other centres in the region.

38. In December 1991, tropical cyclones "VAL" and "WASA" hit Western Samoa with disastrous results, again demonstrating that a single tropical cyclone can significantly set back the social and economic advancement of a small developing country.

39. Within the context of the IDNDR, a regional project proposal entitled "Reduction of Natural Disasters Related to Tropical Cyclones in the South Pacific Region" has been submitted to UNDP for inclusion in its fifth cycle inter-country programme (1992-1996) to continue its assistance to the RA V Tropical Cyclone Committee in the implementation of the Committee's Regional Co-operation Programme aimed at improving the capabilities of the national Meteorological/Hydrological Services and hence the tropical cyclone forecasting and warning services. The project request has not yet received approval from UNDP.

Co-operation with the World Tourism Organization

40. The World Tourism Organization (WTO) is an intergovernmental organization and is seeking technical co-operation with WMO, specifically through the publication of a handbook on natural disaster reduction in tourist areas. The aims of the publication are to offer practical advice on the protection of tourist development and resorts, especially in developing countries, from the consequences of natural climatic disasters.