COUNTRY PAPER

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DISASTER MANAGEMENT IN BANGLADESH

A paper prepared for the fourth session of the Scientific and Technical Committee (STC) of the International Decade for Natural Disaster Reduction (IDNDR) to be held in New Delhi from 1 to 5 February, 1993.

Mr. Chairman, the Hon'ble Minister of Agriculture, Govt. of India, Delegations of the participating countries, distinguished guests, ladies and gentlemen.

It gives me great pleasure to represent my country in this Fourth Session of the Scientific and Technical Committee of IDNDR in this historic great city of Delhi and to present a country paper on Bangladesh before this august gathering.

1. Introduction

Bangladesh is one of the most vulnerable countries in the world prone to natural disasters. The peculiar geography of the country not only gives us the life-giving monsoons, but also causes the catastrophic ravages of cyclone, nor'wester, tornado and flood. Living with flood and cyclone is a part of our life. Floods of various magnitude occur almost every year causing extensive damages to life and property. In 1987, 36% area of the country was overflooded. The 1988-flood engulfed 84 per cent of the country including the capital city.

Although floods, droughts and tornadoes are common almost every year, the worst of the natural disasters is the tropical cyclone which originates in the deep sea of the Bay of Bengal, often associated with tidal surges and hit our coastal areas. The cyclone occurred over sixty times during the last about two centuries. We can never forget the dreadful cyclone of 1970 taking the heaviest toll of .5 million of human lives.

Frequent natural disasters have contributed significantly to make Bangladesh one of the poorest countries of the world (GNP per capita US$160). Disaster management therefore requires considerable strengthening. This paper contains the following issues :

i. Disaster impact upon Bangladesh
ii. Institutional arrangements for disaster management in Bangladesh
iii. Functioning of institutional arrangements for disaster management
iv. Management of cyclone disaster 29-30 April, 1991 and Operation Sea Angel
v. Disaster Mitigation Programme
vi. Lessons learnt from disaster management

2. General Information

2.1 Area

Bangladesh is a small country (144 thousand square kilometers in area)

2.2 Population

About 110 million. Bangladesh is the most populous least developed country (LDC) and contains the eighth largest population in the world.

2.3 Location

Bangladesh is in the east of Asia and to the north of Indian Ocean. It lies between 20.34 and 26.38 north latitude and between 88.01 and 92.41 east longitude. It is almost surrounded by India except for a short (about 197 km) south of eastern frontier with Myanmer and southern irregular deltaic coast line facing the Bay of Bengal.

2.4 Climate

The country experiences hot summer season of high humidity from March to June and a somewhat cooler but still hot and humid season from September through October and a cool dry winter season from November to the end of February

- winter temperature on average is maximum 29°C and minimum 10°C.
- Summer temperature on average maximum 34°C and minimum 21°C.
- Monsoon average rainfall is 1194 mm to 3454 mm.

2.5 Topography

Bangladesh's vulnerability to tropical cyclone is made critical because of its geographical features, high density of its population and poor infrastructure. Two of the subcontinent, largest rivers, the Ganges and Bramaputra converge to form huge alluvial delta created by deposits of silt washed from the Himalay a range. The concave shore of the Bay of Bengal acts as a funnel extending northward and towards the Meghna estuary from which the large continental shelf runs down to the bay.

3.0 Disaster Management

3.1 Disaster Management includes

- prevention and preparedness measures taken in disaster prone areas in anticipation of the known hazards
- response to disasters when they occur involving search and rescue, relief, short term repairs and rehabilitation and long term rehabilitation.

3.2 Disaster Preparedness

Measures to ensure the readiness and ability to

- take precautionary measures in advance of an imminent threat in cases where advance warnings are possible

- organise timely response in the event of a disaster preparedness involves:

    - forecasting and warning systems for cyclones and floods

    - operational capability to ensure timely action at all levels when a warning is issued and following a disaster impact.

Following a disaster this includes arrangements at local level

- for evacuation of people, livestock

- to organise search, rescue

- provide relief

- make emergency repairs to restore essential services

Education, training and practice are essential to all levels.

3.3 Disaster Mitigation

Measures designed to reduce, on permanent basis, the adverse impact of cyclones, floods etc. This includes :

- embankments, drainage channels, afforestation and other structural and physical measures to reduce the impact of cyclones and floods

- land use planning to ensure that assets are not located in hazardous areas through regulations

- improving construction standards for building and other structures, strengthening existing ones to better withstand high winds, floods, earthquakes through regulations or incentives.

3.4 Emergency Relief

Relief includes material aid to enable affected families to meet their basic needs for shelter, clothing, water and food (including the means to prepare food) and emergency medical care immediately following a disaster.

4. Disaster Impact upon Bangladesh

Disaster impact upon less developed countries is highest in terms of life. Disaster propensity is greater in Bangladesh than amongst the other countries of South Asia Region. During the last few years, Bangladesh faced three major disasters: the 1987

and 1988 floods and the 1991 cyclone. About 45 millions of people were affected by 1988 floods. On the other hand, about 12 millions people were badly affected and 140 thousand people lost their lives by the cyclone of April 29-30 of 1991. The cyclone left a trail of destruction which was, as per UN-Bangladesh Joint Task Force Report estimated to represent 2.4 billion in US dollars which is more than one year's annual development programme (ADP) expenditures. The economic impact of this loss is obviously several times higher. There were extensive damages to the ports, ships, vessels, telecommunications, embankments, export processing zones, garments factories, educational institutions, health, water supply, sanitation, housing, agriculture, forestry and fisheries.

5. Institutional Arrangement for Disaster Management :

5.1 Role of the Ministry of Relief (MoR)

The institutional arrangements and procedures for dealing with natural disasters have developed over the years and have stood up remarkably well. For example, prior to the catastrophic cyclone of April 29-30, 1991 the most deadly cyclone hit Bangladesh on 12 November, 1970. It claimed 500,000 human lives. In respect of loss of property, the disaster of 1991 cyclone is of greater magnitude because it hit a more coastal area compared to 1970. If the 1991 cyclone has been as severe as the 1970 cyclone, given that the population of the coastal areas has nearly doubled during the past twenty years then we could have predicted a casualty of almost 1 million people. However, improved early warning as well as precautionary measures and preparedness by the Government and various agencies helped reduce the casualty (loss of lives 140,000) considerably in the area ravaged.

The Ministry of Relief is designated as the focal point to co-ordinate all disasters related activities particularly short term relief, repairs and rehabilitation. The disaster related activities of the Ministry of Relief in recent times have focused on :

- disseminating the standing orders for flood and Cyclone
- supervising cyclone preparedness programme
- consolidating the damage reports submitted by Deputy Commissioners
- allocating and arranging delivery of food and other relief goods including Gratuitous Relief, Test Relief and special Vulnerable Group Development allocation
- administering government's funds allocating for the transportation of relief materials

A control room functions in the MoR round the clock with wireless communication to maintain direct contact with district/thana headquarters.

5.2 Role of Directorate of Relief and Rehabilitation (DRR)

The DRR works as the implementing arm of MoR in dealing with emergency situations of floods, cyclones, etc. The DRR is responsible to arrange mobilisation of relief goods, deploy rescue boats for rescue operation, consolidating damage reports and allocating relief goods.

5.3 Codes

Standing Orders (or codes) issued by MoR in 1984 (floods) and 1985 (cyclones) provide lists of responsibilities of different Ministries Divisions, Departments and Agencies. Ministries/Divisions/Departments/Agencies are expected to establish their own internal Action Plans. Both codes assign a central role to the Secretary, MoR who shall be "the Chief Executive Officer" for emergency relief operations and, in that context, exercise control over all civil officers.

- The Flood Code provides for a Standing Central Coordination Committees with Minister of Relief as Chairman for Flood Emergency with a membership and responsibility "to assess flood damages, co-ordinate relief works and provide policy guidelines for field work".

- The cyclone code provides for a National Co-ordination Committee for Cyclone Emergency to assess damages, co-ordinate, direct and oversee overall rescue, relief and rehabilitation measures, assess and allocate resources at national level, review the implementation of the Standing Orders.

- Specify the responsibilities of divisional commissioners, deputy commissioners, thana officers and union council chairmen and members.

- provide instructions concerning the formation and operations of emergency relief camps, the stocking and administration of emergency relief goods.

6. Functioning of Institutional Arrangements for Disaster Management

6.1 Cyclone

- Bangladesh being situated in the tropical zone is prone to destructive tropical cyclone associated with tidal surge. Cyclones are classified according to their intensity and following nomenclature are in use :

(a) Depression : wind speed up to 31 MPH

(b) Deep Depression : wind speed up to 32-38 MPH

(c) Cyclonic storm : wind speed up to 39-54 MPH

(d) Severe Cyclonic Storm : wind speed up to 55-73 MPH

(e) Severe Cyclonic Storm with hurricane Intensity : wind speed above 74 MPH.

6.2 Wind Storm Warning System

The Bangladesh Meteorological Department (BMD) is responsible for forecasting windstorms and issuing warning from its storm warning centres (SWC) in Dhaka. BMD receives meteorological reports from stations throughout the region via WMO World Weather Watch and Tropical Cyclone Projects.

6.3 Cyclone Preparedness Programme (CPP)

The CPP is established in 24 Thanas in the coastal area. The programme is operated jointly by the GOB and BDRCS. The CPP headquarters in Dhaka has direct radio contact with BMD and with its own personnel at zonal and thana levels and in some unions. In 1991 cyclone throughout the warning phase, approximately 21,000 of its volunteers disseminated the warning signals against the approaching cyclone through megaphones sirens and house to house contact. Three hundred fifty thousand people were evacuated before the cyclone.

6.4 Flood

River flooding originates in the catchment areas of the Ganges, Meghna and Brahmaputra outside of Bangladesh. We experience two types of floods, slow type flood and flash flood. The causes of floods and its intensity in the country can be attributed to the following:

- excessive snowfall in the Himalayas and subsequent melting of the same, rainfall in the hilly regions, north of Assam and in the Assam valley itself.

- excessive local rainfall and silting up of rivers

- blockage of natural drainage due to unplanned growth of habitation and construction of roads and embankments.

6.5 Flood Warning System

The Bangladesh Water Development Board (BWDB) Flood Warning Centre (FWC) is responsible for forecasting floods and issuing warnings.

The FWC receives data from a network of 43 rivers and 48 rainfall observation stations within Bangladesh and for river and rainfall stations in neighbouring countries through the WMO World Weather .

7. Management of Cyclone Disaster : 29-30 April 1991

The April 29-30 cyclone of 1991 was the worst of the natural disasters in this century. Its fury with wind velocity over 230 km. per hour and tidal surge up to and occasionally over six meters struck 150 km of the coastal areas.

7.1 Early Warning

On the 25th April, immediately after the first danger signals became apparent, the Government cyclone warning system went into operation. On the 26th April, the depression concentrated into a cyclonic storm. The message was transmitted to all

DCs and CPP field officers through telephone contacts and wireless network. The union level trained volunteers were engaged in evacuation work.

Evacuations of people from vulnerable zones to cyclone shelters and protected areas were instructed and some 3 million people were shifted to safer places.

On 29th April, an urgent meeting of the Implementation Board of Cyclone Preparedness Programme (CPP) as per Standing Orders on Cyclone was held in the Ministry of Relief and decisions were taken to undertake the following measures :-

(a) Control Room of the Ministry of Relief and CPP were kept in operation round the clock.

(b) Radio Bangladesh and Bangladesh Television were urged to broadcast Special Weather Bulletins.

(c) All ministries, departments and organisations were instructed to take steps as directed in the Standing Orders for Cyclone.

(d) Director General of Relief and Rehabilitation was advised to send the relief materials and cash money to the respective Deputy Commissioners.

7.2 The Role of the Government

The cyclone hit the coastal belt at the mid night on the 29th April. It was a big challenge for the new Government to combat the unimaginable disaster. But the Government faced it with courage and determination. The Government and the entire nation responded by mounting a co-ordinated cyclone preparedness and relief effort that quickly gained momentum.

On 29th April the Hon'ble Prime Minister convened a special meeting with the concerned Cabinet Members to discuss the emergent situation and to take necessary measures. Parliament was adjourned to allow Members to return to their own constituencies to provide moral support and leadership. On 30th April, the Emergency Relief Co-ordination Committee headed by the Prime Minister was established to provide policy guidelines to the Emergency Relief Management Committee headed by the Relief Minister. This second committee effected the entire co-ordination and implementation of all relief efforts. In addition, a high powered committee chaired by the Cabinet Secretary with several key Secretaries of the Government was constituted to review the position and advise and take appropriate measures for relief and rehabilitation.

Co-ordination Cells were set up at zonal, district, thana and union levels with representatives of local administration, the Army and the NGOs in order to harmonize relief operations and ensure balanced distribution of supplies. The affected areas were divided into two zones under two senior Secretaries as Zonal Coordinators with their headquarters at Chittagong and Barisal. 6 Cabinet Ministers were entrusted with the responsibility of overall supervision and co-ordination of relief and rehabilitation works in 6 badly affected districts. 22 State Ministers, Whips, MPs and other renowned personalities were assigned the responsibility for supervision of relief works in 12 badly thanas of Chittagong zone.

7.3 Response by the Foreign Countries and International Communities

Immediately after the cyclone, the Hon'ble Prime Minister quickly visited the affected areas by helicopter to see for herself the real devastation and the need for help. On the 1st May she appealed to the international communities to extend their helping hands. She invited the heads of the foreign diplomatic missions and UN agencies at her Secretariat and appraised them of the cyclonic havoc.

The outside world was very quick to react. Some friendly countries, namely Pakistan, India, Thailand, UK, China and Japan quickly sent several helicopters for rescue and relief operation. In addition the UK sent one Naval ship and Kuwait sent two boat ambulances. Simultaneously on the 3rd May, the Secretary General of the United Nations issued an urgent appeal to the international community. On 5th May, the UN Disaster Relief Coordinator arrived in Bangladesh and accompanied with the Hon'ble Prime Minister and other high officials to make a spot survey by air and on the ground. The UNDP Resident Representative also convened meetings with a standing Inter-agency working group on Disasters.

By the mid-May emergency relief covering cash, food, clothing, medical supplies, water purification tablets, water pumps, shelter materials and cooking utensils reached substantially. The entire foreign relief - cash and kind as reflected in the ERD's statement upto 17 November, 1991 indicates a total volume of US$ 481.83 million from 38 countries, 11 international agencies and 44 NGOs.

7.4 Operation Sea Angel

After the cyclone of 1991 the most remarkable contribution was made by the United States by sending an amphibian Navy and Marine Task Force known as "Operation Sea Angel" equipped with helicopters, hovercrafts, landing crafts, ground transports and fixed wing aircraft. This unit joined other units in a combined Task Force. These infusions with great lift and logistics capacity continued a massive operation to the most remote islands and inaccessible coastal areas for about two weeks. By 24th May it was reported that the Joint Task Force has been able to lift over 3500 tons of essential relief items covering short term needs.

7.5 Aftermath Rehabilitation Works

The Government had undertaken urgent short and long term reconstruction activities. The telecommunication system had to be quickly restored; ports and harbours were cleared and put to operation and all other physical and socio-economic infrastructures had to be reconstructed. The Ministry of Relief also undertook special Test Relief, VGD and Food for Works Programme in the affected areas which facilitated short term rehabilitation and created massive employment opportunities for distressed people.

7.6 Comprehensive Disaster Management

In order to strengthen the Government's capability to co-ordinate and monitor disaster related activities through Ministry of Relief a T.A. Project, "Assistance to Ministry of Relief" was undertaken under UNDP assistance. The project reviewed existing procedures and organisational structures for disaster management. The project prepared a project document and other related documents for Comprehensive Disaster

Preparedness/Management Programme within the context of the Flood Action Plan. The recommendation of TA project to establish a permanent set up named "Disaster Management Bureau (DMB)", to be attached to the Ministry of Relief to manage recurrent disaster problems is under active consideration of the Government.

8. Disaster Mitigation Programme

8.1 Concept Plan for Integrated Coastal Protection

The elements of the plan are in various stages of planning and implementation, they can be summarised as :-

- Sea facing and similar embankments plus afforestation
- Multipurpose shelter and 'killas'
- Cluster village
- Transport systems (roads, helipads, dropzones, land strips, water ways and landing/jetties)
- Medical facilities
- Warning/communication for cyclone
- Landuse planning

8.2 Embankments

Following 1985 cyclones, medium and long term plans were prepared by BWDB aimed at existing coastal embankments. An emergency one year project is being implemented for the construction of priority sea facing embankments. This will be followed by further embankment construction, which is due for completion in mid 1995.

8.3 Cyclone Shelters and Killas

The programme of cyclone shelter construction has been started from 1970 cyclone. It is expected that within the year 1995 a total of 1650 cyclone shelters will be constructed by Ministry of Education, Local Govt. Division, Bangladesh Red Crescent Society and Cabinet Division. Meanwhile different NGOs has so far constructed 171 number of cyclone shelter in the coastal area, in addition to the existing 612 numbers.

8.4 National Disaster Management Council and Observing of IDNDR

The Government of Bangladesh has taken necessary steps to constitute a National Disaster Management Council with Prime Minister of Bangladesh as Chairperson. Ministry of Relief has been entrusted to maintain its secretarial responsibility. On 14th October, 1992 the International Day for Natural Disaster Reduction was observed in befitting manner, where high officials and heads of foreign missions were present. The Hon'ble President of Bangladesh was the Chief Guest.

9. Lessons Learnt from Disaster Management

The best lesson learnt from disaster management are :

- learning to live with cyclone, better preparedness for the future to minimize the loss of life and property

- People are capable of coping disasters if appropriate co-ordination and logistic support are in place

- NGOs, local voluntary agencies must be well co-ordinated in order to avoid duplication and prevent misuse of materials.

- the warning system is incomprehensive to ordinary people and hence should be used more effectively

- warning alone is not sufficient, clearly there is a lack of preparation on the part of administration to organise a well co-ordinated rescue and evacuation operation which can save life and property.