



DISASTER IN BANGLADESH

Facts about Bangladesh

- Total Population: 130 million
 - 890 people per square kilometer in Bangladesh where 30 in the USA
 - 85% people live in rural area
 - literacy rate for female 20% and 35% for male.
 - Per capita Income is only US\$ 290
 - Life Expectancy 59 years for both sexes
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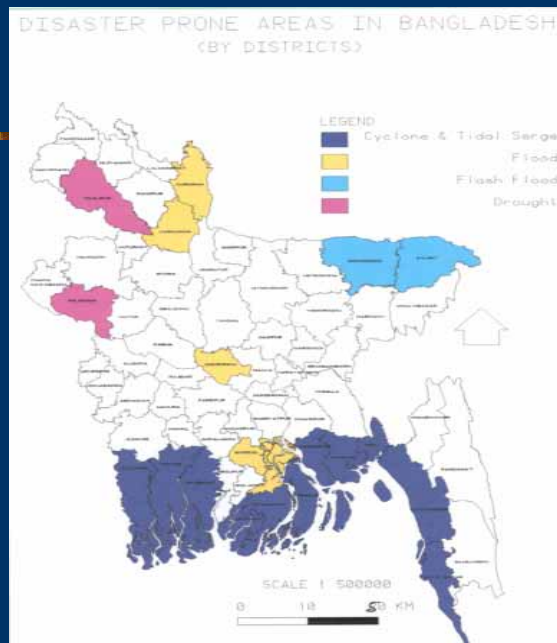
Economy

- 60% of Bangladesh household are without sufficient land to produce enough food for their family
- 20% of Bangladeshi do not have any land for homestead
- Agriculture is the life line of economy, contributes 36% of GDP and employer of 66% of total labor force.
- 70% of the effective land area of the country is under crop production.

Above mentioned factors along the geographic location make the country complex to the disaster.

- Bangladesh is one of the most disaster prone country in the world.
- The major natural disaster are flood, cyclone, tornado river bank erosion and drought.
- The damage caused by these hazards to human settlements, physical property, animals and human lives have been enormous.

Disaster Prone Areas



FLOOD

- Flood is found to be a frequent disaster event in Bangladesh.



- Two major floods that caused havoc to the country in 1988(affected 62% land—dead 2380) and 1998(68% land-dead 918)) are considered to be worst in the living memory.
- Almost every year flood damages human settlements, crops and properties, kill human and livestock, disrupt transportation and communication network, damages roads and development infrastructure, causes scarcity of food and water, spreads water borne diseases, bring miseries and sufferings to the people; slow down development process of economic growth of the country



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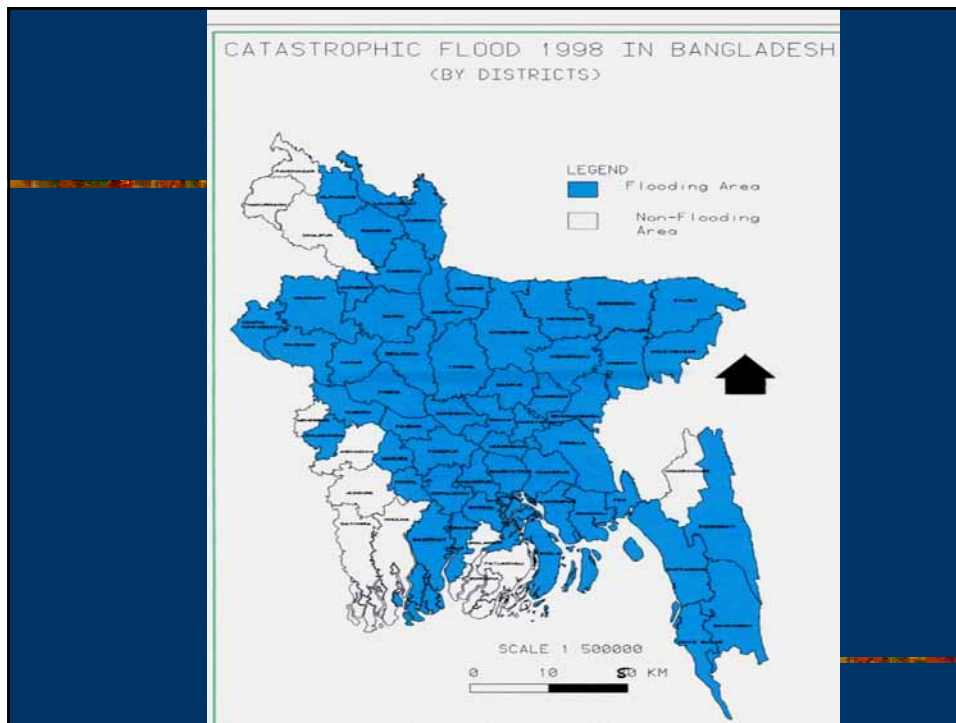
Reason for Flood

The flood is caused by a combination of following several factors:

1. Huge flows of rainfall and snow melt from Himalayas across the boarder
2. Poor Drainage system
3. High tide in the Bay
4. Excessive silt load in the river due to soil erosion



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CYCLONE

- Bangladesh has 710 k.m long coastal belt(southern part) and entire belt is exposed to the potential danger of cyclone.
- 75% occurs during spring and autumn.
- The impact of cyclone 1970 and April 1991 was severe.
- A wave of up to 9-12 meters was produced by these two cyclone
- Killed 300,000 people in 1970 and 138,000 in 1991
- Besides the death toll nearly 4 million people lost their homes in 1991.

- The reasons why so many people died were found to be poor housing, high population density, too few and inadequate shelters, problems with signals and warnings, perceptions (many people believe in widespread myth due to lack of knowledge), vulnerability of particular groups, unavailability of trees as life savers. Also, there was a significant difference in the death rates in both sex and age; namely, females, children and the elderly died disproportionately more than others.

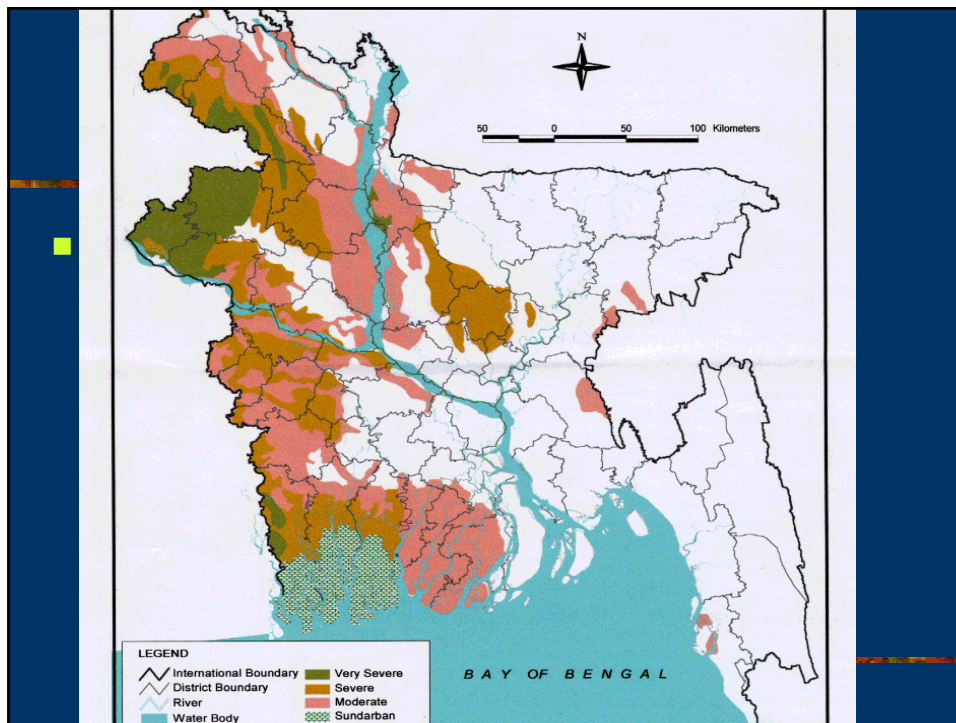
TORNADO

- They are common in the central part of Bangladesh
- 75% of them occur during monsoon period
- In 1989 a major tornado affected Manikganj and Dhaka district and left over 100,000 homeless, more than 10,000 people injured and 800 people dead in a couple of minutes
- many people were blown away at a considerable distance (one person was blown over 1.5 km)
- 605 persons were killed in the districts of Jamalpur and Tangail on 13 May 1996.



DROUGHT

- South west and north west regions of Bangladesh are drought prone area.
- Occurs during pre-monsoon because of uncertainty in rainfall
- During dry season due to prevalence of dry days and lack of moisture
- Major crops are affected by drought resulting substantial loss in crop yield.



RIVER BANK EROSION

- There are 230 rivers and canals in the country(7.5 of total area)
- River erosion is common in the rainy seasons and it takes a serious turn during the flood
- Carries away land and destroys houses
- App. One million people are affected every year

EARTHQUAKE

- Earthquakes are the most deadly of natural disasters affecting the human environment.
- Bangladesh has not been affected by the earthquakes since ancient time. Affected by small earthquake occasionally.
- No record of tsunamis hitting coastal area
- Bangladesh is the the world's most densely populated area,any future earthquake shall affect more people per unit area than any regions of the world.
- There is a urgent need for educating the public and decision maker about the threat of earthquake.

Vulnerable Groups

- Statistics: from the total death
 - 75% are women and older people
 - Almost others: Children under 12 years

The cause of death of Children and women

- 1.They are physically weak and illiterate
2. Long hair and dress of women is an obstacle
3. They are not aware of coping mechanism
4. They are not empowered to take decision at the critical moment in absence of men.
5. Lack of their participation in disaster management activities
6. They do not understand warning signals
- 7.They love their small property so they donot want to leave their houses

Coordination in designing Disaster Reduction System

- Natural calamities brings tremendous strain on the economy of the country.The poorer the country,the greater the number of victims and adverse effects on its economy
- But disaster mitigation can be planned.This has been practiced as part of traditional coping mechanisms. However Disaster management actions maybe described into the two broad categories:
 1. Structural and 2.Non-Structural

Structural/Direct

1. Land Use Planning: In order to reduce the effect of Cyclones on detached island, some afforestation projects have been already implemented.
2. Embankment Building in offshore island, coastal areas and some river banks
3. Road Construction: Roads are required in the disaster prone area for pre-disaster evacuation and post-disaster relief and rehabilitation operation.
4. Construction of strong cyclone shelters: Still inadequate compared with the number of vulnerable population.

Non-Structural/Indirect

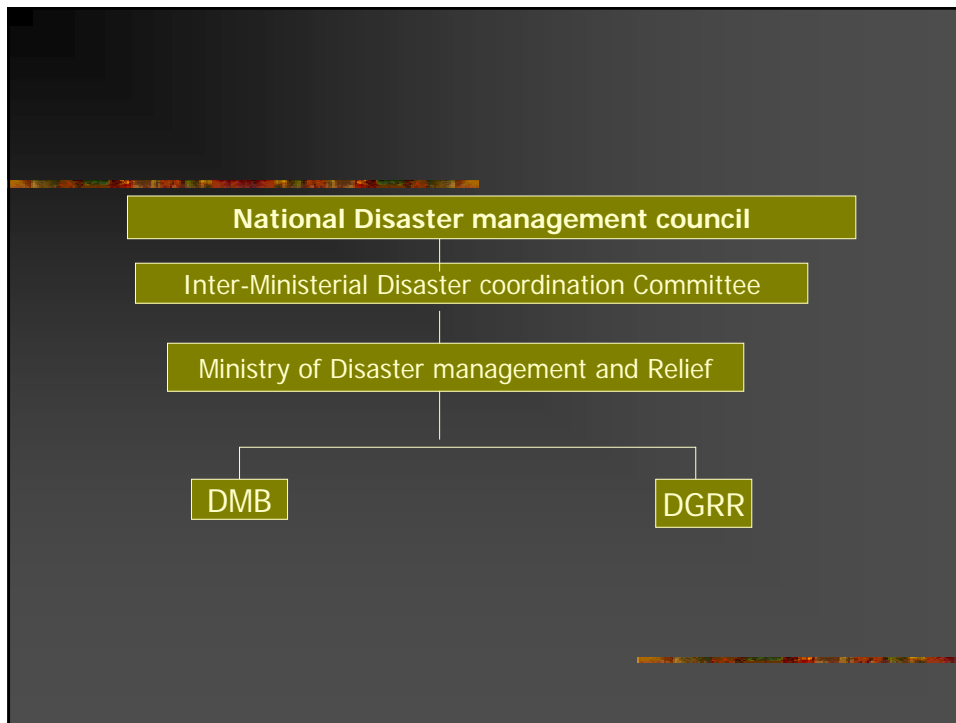
- Standing Order: Duties and responsibilities of various ministries, Departments and other organization working for disaster cooperation.
- Forecasting and warning system (11 signals for Seaport and 4 signals for River ports)
- Disaster management subject in school level
- Disaster management session in all types of Training Institute
- Community Involvement: not systematic due to lack of policy and awareness. Now Govt. decided to implement disaster management committees in the grassroots level through strengthening the local government.

Major Actors for coordination

1. National Government Agencies
2. Defense forces
3. NGO's/International Organizations etc.

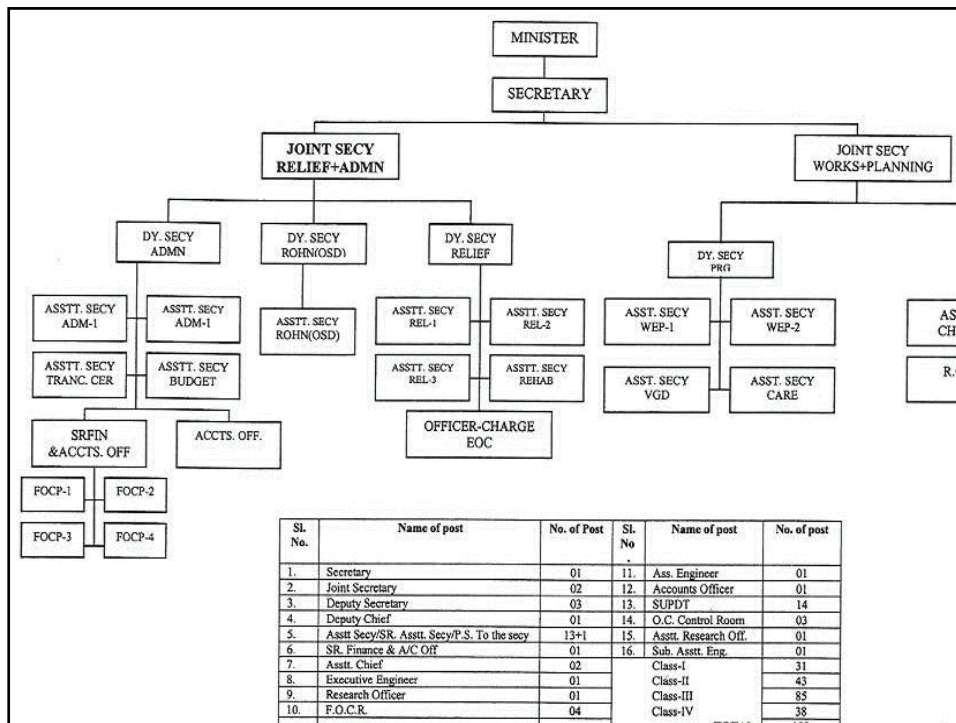
Main Government Organization

- Ministry of disaster Management and Relief(MDMR)
- Disaster Management Bureau(DMB)
- Directorate General of Relief and Rehabilitation(DGRR)



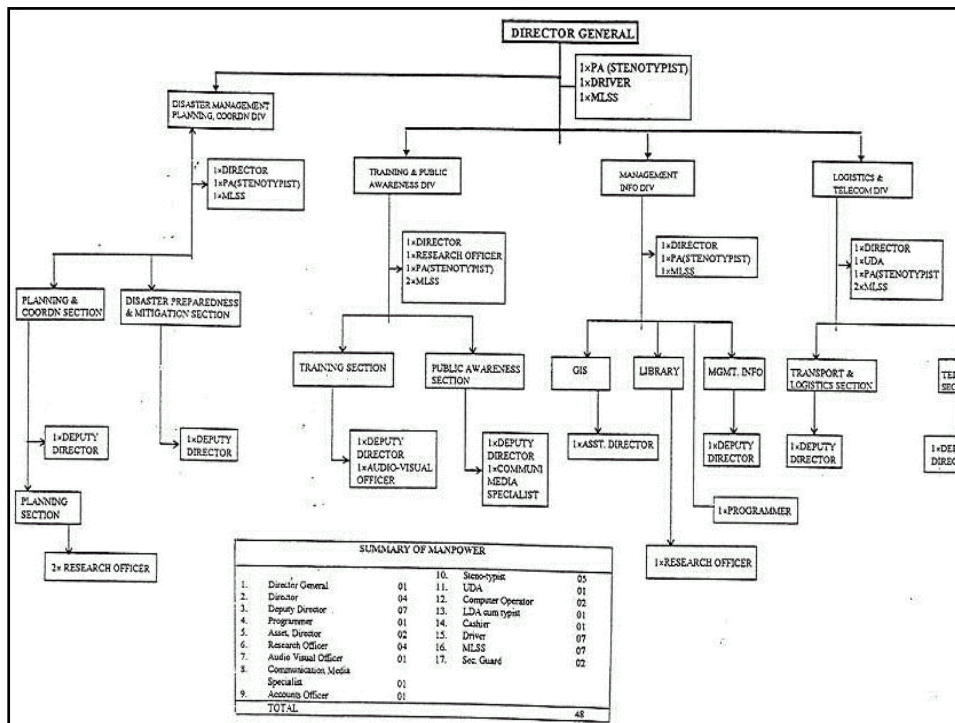
Role of MDMR

- Focal point of the Govt. for Disaster related issues
- Review the own action plan of the ministry on disaster management every 3 months
- Control the activities of all officials engaged for emergency relief
- Identify the disaster prone area and population affected by the disaster
- Issue necessary orders for proper coordination of steps relating to disaster and response.
- Keep the Emergency operation center (EOC) open day and night during the warning stage



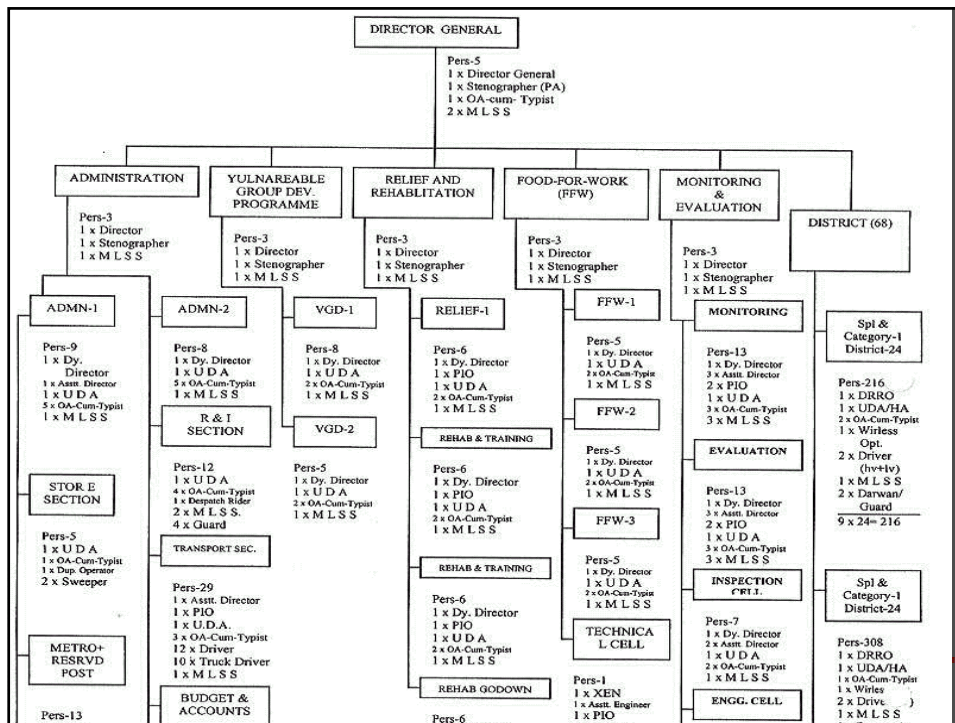
Role of DMB

1. To Coordinate Disaster Management activities
2. To organize Training and Public Awareness activities
3. To promote prevention and preparedness at all levels on various disaster
4. To collect data and dissemination information.
5. To work with local authorities, line agencies and NGOs to develop their action plans and increase their own capacity.
6. To organize logistic arrangement in connection with Disaster Management



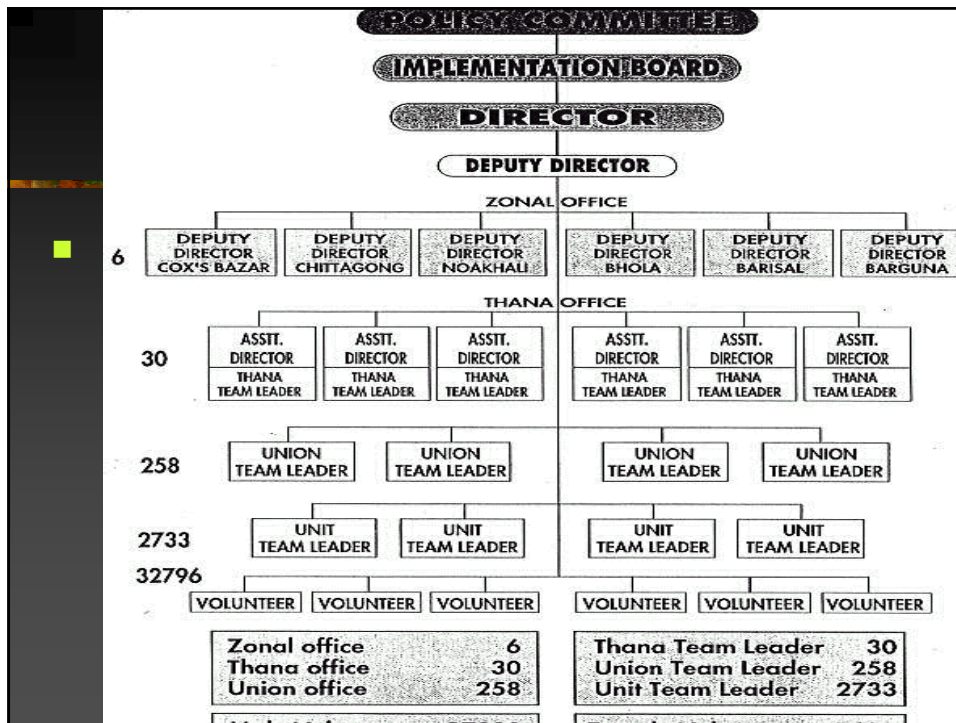
Role of DGRR

- Inform the ministry about the requirement of relief materials
- Relief preparedness in the affected area
- Ensure quick dispatch of relief materials
- Ensure stock and maintenance of adequate materials in disaster-prone areas
- Ensure proper accounting-keeping of the use of allotted relief materials



Role Of Cyclone Preparedness Program(CPP)

- CPP of Red Crescent Society has its 33,000 well trained male and female volunteers spreading over the coastal belt of Bangladesh
- motivate people at grass-root level for rescue and shelter during crisis period such as disseminate cyclone warning, rescue and provide first aid to injured people
- Organize preparedness program in disaster prone areas
- Assist relief and rehabilitation operation & community capacity build up activities.



Role of Armed Forces

The armed forces play significant role in post disaster relief operation.

1. Effective chain of command ensures quick response in mobilization.
2. can provide various types of transportation facilities on land, air and sea to reach relief materials to the affected areas.
3. Undertake any rescue, relief and reconstruction works by deploying well-trained, energetic and disciplined troops.
4. Can Provide good number of medical and engineering teams to meet immediate needs.

Role of NGO's

- NGOs in Bangladesh have earned high credibility for intervening in post disaster situation very quickly with emergency survival relief.
- There are more than 25,000 NGOs registered with different dept., therefore Bangladesh is the land of NGO's. Most of the NGO's are depended on foreign donors.
- Most NGO's are involved in health, sanitation, infrastructure, education, agriculture, rural development and income generation program.

Expert Opinion For disaster mitigation

Coping with Disaster

Three steps:

1. Immediate Steps
2. Midterm steps
3. Long term Steps

These steps should not be viewed in isolation. They are parts of an integrated process needed for Disaster management and should be implemented simultaneously.

Immediate Steps

- **Identifying vulnerable group:** major victims
 - **Need for people's participation**
 - **Need for social mapping:** social vulnerability map helps in identifying remote flood affected areas.
 - **Preventing politically motivated use of relief:** The more needy areas are often neglected
 - **Scarcity of Safe drinking water:** main cause of suffering for the flood victims
 - **Combating water borne diseases:** diarrhea, skin diseases etc.
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Mid-term steps

- **Agricultural Rehabilitation:** Immediate need for making seeds and loans available to the farmer
- **Employment Generation, micro credit program:** Linked with agricultural rehabilitation and rural credit, the NGO's have major role to play in this area
- **Small Business and Industrial Rebuilding:** rebuild the factories and social security needs to create for industrial workers.
- **Macroeconomic issues:** Damage assessment of various sectors: a. Export oriented sectors (shrimp and garments) b. Domestic market oriented sectors c. infrastructure d. agriculture

Long-term Steps

- **Flood forecasting Mechanism:** need to be developed and strengthened. Creation of vulnerability maps and flood maps is crucial for developing an effective flood management system.
- **Drainage and maintenance of infrastructure:** Plans and strategies to prevent water logging in urban areas.

Bottlenecks of Cooperation and Coordination

1. Absence of clear understanding about the responsibilities and proper coordination among the organization and officers for relief operation. It results disorganized, overlapping and ineffective response.
 2. Lack of training in emergency coordination with other actors in disaster management
 3. Ignoring the NGO's participation in the planning process of Disaster management.
 4. Non-availability of authenticated lists of vulnerable people
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Negative Impact of Development Projects

1. Unplanned physical interventions on natural drainage path have caused many local flood problems
A huge number of roads are constructed by the local govt. without considering the impacts of water flow in rainy season and flood.
 2. Indiscriminate cutting of trees made the coastal areas more vulnerable to the cyclone.
Illegal logging and shrimp cultivation turned the covered resourceful coastal area into naked and most vulnerable coastal area
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Recommendation to improve Coordination

1. A clear definition of authority
2. More survey in disaster area
3. Mobile communication and more equipment.
4. Shifting from relief to prevention, mitigation and preparedness
5. Building up local capacities
6. Adopting of a integrated approach
8. Linking disaster with development
9. Encouraging investment and research
10. Capitalizing on exiting technology and management tools
11. Focusing on vulnerable groups.

My Research At ADRC

- Flood or cyclone are not part of nature's order, something that has to be endured as a part of life.
- The concept of "live with flood" does not foster any economic growth.
- The technical expertise for reduction of flood are readily available.
- Disaster management approach emphasizes the need for decreasing flood losses by comprehensive structural and nonstructural steps.

- Real Preparedness lies with the activities which reduce the vulnerability and increase the capacity of the people and community so that they can face the disaster with courage and recover rapidly.
- Development assistance and plan can be designed to work toward preventing and preparing for reducing vulnerability.
- Both development and disaster preparedness assistance can be based on as appreciation of local competence, therefore promoting capacities.

Changing the Approach

Before drawing up any disaster management scheme, it is utmost important to investigate in details the following factors

1. Identify the problem: information fails to reach the population in danger, information is not properly understood, ineffective response by the affected people
2. Find solution: poor communication, inadequate education and training, acceptable way to flood forecasting information etc.
3. Find alternatives: If any financial difficulties, finding the alternative solution in cheap way.

Changes in Development Plan

For proper planning and management against disaster a systematic and well organized program is necessary. 4 stages of disaster management program:

1. Pre-Disaster mitigation: To reduce the impact of or prevent disaster event, example: structural measure, public education
2. Pre-Disaster Preparedness: a response plan for the flood is developed in advance, ex: a warning system is installed and the people responsible for implementation of preparedness are trained. Institutional mechanism for implementation is specified.

3. Response to disaster: Activities which are undertaken during and immediately after flood, such as emergency aid, evacuation to pre-designed shelters, flood fighting and taking measures for minimizing secondary damage and recovery operation.

4. Post disaster recovery: support is provided for return to normal life.

Additional Approaches learnt in Japan

- Disaster Preparedness: Dissemination of knowledge on disaster prevention, improvement of evacuation system, improvement of disaster prevention facilities and equipment.
- Countermeasure against Flood: River channel improvement, construction of flood ways, flood gates and channel for adjusting the flow of rivers etc.
- Countermeasure against drought: development of lakes and marshes

- Countermeasure against Landslides: Cut slope planting, Constructing a concrete wall on the slope, piling and drainage
- Countermeasure against River Bank erosion: although no solution for the protection, but the people, who live close to river bank, may be provided portable house and Insurance system. (but rehabilitate them in planned settlements in safer place and finding job are the best solution)

My future Plan

- We(PKSF) are working closely with the government.
- Microcredit is useful tool to reduce poverty. It is very effective for post-flood recovery stage because it creates job.
- Besides credit operation, research is an important component of the institutional development program of PKSF where we work with the BIDS(Bangladesh Institute of Development studies),government research institute in Bangladesh.

- I was not specialized at Disaster field when I came to ADRC, but ADRC has developed me in this field. When I will return to PKSF, I wish to work at Research division specialized in Disaster management.
- I will approach my recommendation to DMB, MDMR and BIDS.
- I also want to handle disaster management Fund.
- I have also plan to take master degree/diploma in Disaster management or Emergency and Risk management

Some Recommendations for ADRC

Some member countries are not so cooperative in providing information. We have to do something to make them active. My suggestions are:

1. ADRC can divide each Researcher for taking responsibility for some countries. He will regularly contact with the counterpart plus accumulating latest disaster information from those countries. He can also make visit once a year to each member country.
2. To make attractive, ADRC can take several innovative steps or expand activities, maybe more cooperative project with JICA and UN.

- Since ADRC is dealing with disseminating information, they can arrange some training program in member countries where they will provide information to government organization and NGO's.
- ADRC may not limited to the one focal point of a all Asian country. They should extend their boundaries with close contact with the other organization.
- ADRC can arrange global disaster seminar in any certain topic.

Some suggestions for future VR

- The V.R should be informed what ADRC expects from him and what he will get from ADRC. The duties and responsibilities should be provided and clearly defined before coming to ADRC. They can be utilized more with their usual/daily activities of ADRC.
- The culture of Japan is different from other Asian countries. To be familiar with new environment, it takes time specially creating working culture. I would not suggest to extend the V.R program, but rather ADRC can keep provision of research period in minimum 6 months and maximum 12 months.

- Japan is highly developed and technological country. I think people can remember more things practically than books. They should more extensive field visit to disaster related organization.
- All researcher at ADRC attend international seminar frequently. Most of VR from developing country does not have any experience of any international seminar. They must have curiosity what happen there. He should be allowed to attend one international seminar as an optional where ADRC can provide him registration and accommodation only.

- If it is not possible , they maybe allowed to attend international expert meeting held in ADRC. As a future leader in the country, it will give him the understanding of new vision. We, from third world country, read lot of articles of disaster mitigation process, but we have lack of sense new concept and cooperation.That's why ADRC is so active but we are not responsive.
- I understand that all of this steps will need more money but I think if you think of objective of VR, I mean disaster reduction in Asian region,I think it should be part of research.