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Was the information provided consulted with other institutions? YES Yes NO

If yes, please list these organizations here-below:

1. Federal Flood Commission, Islamabad.
2. Provincial Relief Department, Lahore
3. Provincial Irrigation Department, Lahore
4. Water & Power Development Authority Lahore
5. Pakistan Meteorological Department

**1.1-Are there national policy, strategy and legislation addressing disaster risk reduction?** Yes, there is national policy and strategy for disaster reduction, particularly there is a Federal Flood Commission at Islamabad which is responsible for policy making, planning and coordination with different provinces and agencies for implementation of the policy. Federal Flood Commission (FFC) was established in 1977 to provide the necessary infrastructure at the federal level to help the provinces in meeting the technical and financial resources required to carry out the Flood Mitigation Measures. During the recent past FFC has played a unique role in remodeling the flood mitigation policy of the country on modern lines with the help of the foreign loan mostly obtained from Asian Development bank (ADB).

**1.2-Is there a national body for multi-sectoral coordination and collaboration in disaster risk reduction, which includes ministries in charge of water resource management, agriculture/land use and planning, health, environment, education, development planning and finance?** Yes, Ministry of Water & Power under which the Federal Flood Commission is responsible for planning & coordination for disaster risk reduction alongwith emergency relief cell. Flood Forecasting Division (FFD) of the Pakistan Meteorological Department plays a pivotal role in the entire flood mitigation process. Hydrometeorological data from the various national and international sources is received in this Division, which is then processed to prepare flood forecasts and warnings to be disseminated outwards to various national organizations. Major actions required to be taken by the Division before, during and after the flood season are summarized below

- Ensure serviceability of the meteorological equipment including QPM Radar Lahore, QPM Radar Sialkot, Teleprinter network, FAX, APT, RTT and MDD Equipment.
- Ensure availability of the following items in sufficient to last for the whole of flood season: Surface and upper air meteorological charts, isohyetal maps, various forecast forms, data tabulation sheets stationery etc.
- Update the calibration of the radar and flood forecasting models
- Liaison with telecommunication authorities for timely reception and transmission of meteorological and hydrological data and rapid dissemination of flood forecast and warning to all the agencies.

The operational setup of Flood Forecasting Division is shown as Annex-I

Provincial relief organizations are charged with the responsibility pertaining to disaster preparedness, emergency response, and post disaster activities pertaining to all disasters including floods. Flood preparatory actions required to be taken by the relief Commissioner include:

- Arranging inspection of the flood protection.
- To establish flood warning center and the flood centers at the district and Tehsil levels.

Emergency Relief Cell has been established under the cabinet division and is controlled by the Cabinet Secretary. The Director General Relief heads the cell. Main function of the Emergency Relief Cell includes.

- Planning and assessment of relief requirements of major disasters.
- Stock piling of basic necessities needed during emergency such as dry ration, tarpaulins, blankets etc

**1.3-Are there sectoral plans or initiatives that incorporate risk reduction concepts into each respective development area (such as water resource management, poverty alleviation, climate change adaptation, education and development planning)?** Yes, there are initiative to incorporate risk assessment as an integrated flood management and mitigation taken into account of climate for which purpose Flood Forecasting division of Pakistan Meteorological Department is associated. The early warning concept results in both poverty elevation as sustaining the development.

**1.4-Is disaster risk reduction incorporated into your national plan for the implementation of the UN Millennium Development Goals (MDGs), Poverty Reduction Strategy Paper (PRSP), National Adaptation Plans of Action, National Environmental Action Plans and WSSD (World Summit on Sustainable Development) Johannesburg Plan of Implementation?** For national environmental planning ministry of environment and provincial environment department are looking after this aspect.

**1.5-Does your country have building codes of practice and standards in place, which takes into account seismic risk?** Presently accordingly to our knowledge no such codes have been devised.

**1.6-Do you have an annual budget for disaster risk reduction?** The financial mechanism for risk reduction initiative is implemented through UN grants and specific allocation already with individual departments/institutions.

**1.7-Are the private sector, civil society, NGOs, academia and media participating in disaster risk reduction efforts?** There are few NGO's which are coordinating both between Government & civil society for disaster reduction. Major deficiencies are financial recourse constraints.

## **Component 2 Risk Identification**

**2.1-Has your country carried out hazard mapping/assessment?** Yes, hazard mapping/assessments made for limited area under Flood Protection Sector Project (FPSP). Some parts are available with National Engineering Services (Nespak).

**2.2-Has your country carried out vulnerability and capacity assessments?** No assessment has been carried out.

**2.3-Does your country have any mechanisms for risk monitoring and risk mapping?** Nothing has been done.

**2.4-Is there a systematic socio-economic and environmental impact and loss analysis in your country after each major disaster?** Not available.

**2.5-Are there early warning systems in place?** Elaborate arrangements for early warning system particularly for floods for which Flood Forecasting Division has been established using satellite, radars, manual observations. The same information is passed on to community, press and government agencies and gradual improvements have been made to cover-up the problem areas.

### **Component 3 Knowledge Management**

**3.1-Does your country have disaster risk information management systems (governmental and/or non-governmental)?** With reference to floods there is a well laid out and detailed dissemination as attached. (Annex-II)

**3.2-Are the academic and research communities in the country linked to national or local institutions dealing with disaster reduction?** In collaboration with the university for carrying out research on specific topics with reference to disaster reduction is being done e.g. at Punjab University Lahore & University of Engineering & Technology Lahore.

**3.3-Are there educational programmes related to disaster risk reduction in your public school system?** No, there is no programme at school level.

**3.4-Are there any training programmes available?** No training programme is available.

**3.5-What kind of traditional indigenous knowledge and wisdom is used in disaster-related practices or training programmes on disaster risk reduction in your country?** Elementary & basic method like building embankments in some areas are being practiced.

**3.6-Do you have any national public awareness programmes or campaigns on disaster risk reduction?** No such elaborate program is available.

### **Component 4 Risk Management Applications/Instruments**

**4.1-Is there any good examples of linking environmental management and risk reduction practices in your country?** Environmental management at limited scale in watershed and

agriculture does exist which is carried out by respective provincial government. The agriculture & irrigation departments are also looking after it.

**4.2-Are financial instruments utilised in your country as a measure to reduce the impact of disasters?** No such financial instruments are utilized.

**4.3-Please identify specific examples of technical measures or programmes on disaster risk reduction that have been carried out in your country (see below, case studies).** Special programme & technical measures under Flood Protection Sector Project 1 (1994-1997) & Flood Protection Sector Project 2 (1998-2003) have been started under which various level of improvement have been carried out in both structural & non-structural measures.

## **Component 5 Preparedness and Contingency Planning**

**5.1-Do you have disaster contingency plans in place? Are they prepared for both national and community levels?** Emergency relief cell of Cabinet division Islamabad & provincial relief commissioner have disaster contingency plans for national and community levels.

**5.2-Has your government established emergency funds for disaster response and are there national or community storage facilities for emergency relief items – mainly food, medicine, tents/shelters?** There are funds allocated on annual basis for emergencies and disaster and the relief items are adequately stored with emergency relief cell at federal level and in each province at relief commissioner level in flood season & in each district with limited scale.

**5.3-Who is responsible for the coordination of disaster response preparedness and is the coordination body equipped with enough human and financial resources for the job?** In both Federal & Provincial level the following are responsible for coordination & preparedness:

1. Cabinet Division emergency relief cell
2. Provincial relief cell
3. Respective army units

## **Component 6 Call for good practices in disaster risk management**

During the flood season July-Sept. 2001 the radar images helped a lot in determining the rainfall over the catchment areas of the neighbouring country. This cross border rainfall estimation in quantitative terms was an extremely useful input before the maximum runoff was reached in the river plain of the Sutlej riverbed. The rainfall estimates assisted in both determining the peak discharge value and the time of its arrival. A timely forecast was issued on 15-8-2001 at 1030 hours and the actual peak occurred 18-8-2001 at 0000 hours, which enabled the District Management of Kasur to evacuate the

people and cattle, who were in the river bed of the river Sutlej and a heavy loss of life and property was avoided.

The concept of cost-benefit ratio is new to the state run disaster reduction organizations. This office has adopted a methodology to ensure that the benefit driven from disaster reduction techniques are more than the annual expenditure of the organization borne by the state. The disaster reduction technique/methodology was applied in the country's largest reservoir for storage of excess water which resulted in reservoir generation through irrigation and power generation resulting in ten times the budget of the organization, which has now adopted as regular measure though it was practiced for the first time in 2002. The early warning for disaster management below the significant and high level of the river flow in two major rivers in the country, last year which resulted in saving the relief cheques and financial assistance to the community and damage which could have been inflicted on both life cattle and personal saving of the public caught unaware in the river basin.

This is disaster preemption approach in the sense that disaster post rehabilitation costs are much higher viz-a-viz the disaster precaution. Two brief case studies with actual scenario will be presented in detail with site-specific non-conventional approach.

## **Component 7**    **Priorities you want addressed at World Conference on Disaster Reduction**

1.    Capacity building and capacity improvement of the early warning institutions.
2.    Wide circulation of successes of each country and selection of the common good practices for implementation and adoption.
3.    Formation of disaster reduction regional groups for effective coordination and liaison for a compact and unified approach comprising of 4 to 6 countries.
4.    Formation of quick disaster response for at regional level.
5.    Adoption and consideration of proactive approaches rates the response oriented approach.

I would like to present following national experience at the conference:

Technical advancement and scientific improvements in early warning system for example have made significant progress in past few years particularly in developing countries like Pakistan. However, the main stay and focus of all this is venerable community at large for the type of disaster identification and its early warning and effectiveness & to a greater extent it is depending upon the acquisition of latest satellite imagery, Radar profile and computerized processing of numerical data. As early warning organization intotality the purpose is half fulfilled if it does not result in reducing the damages to community and public of the region/area under disaster threat. An effort has been made to use both conventional bookish and non-conventional /non-procedural methodology to reduce the time lag and communication gap between the scientists, administrator and common man & these practices have been successfully adopted in the past two years with a coat-benefit ratio approach to the whole concept.

This organization is entrusted with the responsibility of countrywide issuance of flood forecast to all the national agencies. For this purpose we have radar-network covering whole of the country, satellite imagery for detection of any cloud rain generation system for flood, data from ground observatories both through telephone & H.F Link. Numerical models have been developed for flood forecast and its routing from origin till Arabian sea covering length and breath of the country & round the clock monitoring and computerized data processing is carried out.

Previously the communication was mainly between the designated official channel & it remained confined to state-run and state employed offices, which has been now extended to NGO's and agencies/organizations, both state run and public-oriented. These are directly affected by the flash flows and regular river flows. A detailed mechanism with flow diagram and tree structure of organization & individual exists in placed.

Though the role of the organization is to issue the flood forecasts however, we have gone a step beyond our designated responsibility and taken the responsibility of dissemination of flood warning/forecast directly to the government officials, to media, Rescue and relief authorities and to the public/community authorities, a district level, a full methodology and mechanism was developed by removing & bypassing the obstacles and bottlenecks.

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