

Chapter - 2
Pre-Disaster Preparedness
and
Management

Chapter-2: Pre-Disaster Preparedness and Management

2.1 Institutional Set-up

The Disaster Management Act, 2005, envisages establishment of designated agencies and dedicated structures with defined role and responsibilities for management of disasters at the State and district levels. Audit found gaps in the establishment and functioning of the institutional mechanisms as summarized in table-2.1 below:

Table-2.1: Institutional Set-up for disaster management

Authority	Mandate/ Activities	Audit findings
State Disaster Management Authority (SDMA)	The SDMA was to be administratively functional by appointing full time members supported by core secretariat to lay down policies and plans for disaster management in the State. The SDMA should also meet at least once in a year.	The SDMA, though established in April 2007, was not fully constituted as its full time members were yet to be appointed (July 2016). The SDMA met only once (February 2012) during 2010-15 when State Disaster Management Policy (SDMP) was approved. The SDMP though approved (February 2012) by the SDMA, had not been implemented fully.
State Advisory Committee (SAC)	The SAC to be constituted consisting of experts in the field of disaster management to make recommendations on various aspects.	The SAC had not been constituted as of October 2015.
State Executive Committee (SEC)	To implement the National Plan, State Plan, lay down guidelines for preparation of disaster management plan by the departments and to act as a coordinating and monitoring body for management of disaster in the State.	National Plan and State Plan had not been implemented. Guidelines for preparation of disaster management plan by departments were also not laid down.
Divisional Disaster Management Authorities (DDMA)	Divisional Disaster Management Authorities to be created to act as the planning, coordinating and implementing body for disaster risk reduction and management at the divisional level and to provide guidance for the purpose of disaster management to the DDMA's.	Divisional Disaster Management Authorities had not been established as of April 2016.
District Disaster Management Authorities (DDMA's)	To prepare the District Disaster Management Plan and to coordinate and monitor the implementation of the National/State Policy and the National/State/District Plan, DDMA's will ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all departments at the district level.	DDMA's though constituted, were non-functional. District Disaster Management Plans had not been formulated in the six test-checked districts. District Disaster Management Plan of Leh District approved (May 2011) had neither been implemented nor reviewed.

The above institutional gaps inhibited the ability of the State Government to prepare cohesive disaster management plans that would enable rapid response to disasters as they occurred and mitigate their impact in terms of loss of lives and property.

In the exit conference, the Commissioner Secretary, Relief and Rehabilitation Department stated that institutional set up for management of disasters had not been functional on the ground.

2.1.1 Disaster Response Force - Training and Deployment

The State Government established (February 2012) the State Disaster Response Force out of existing two battalions of Auxiliary Police. The mandate of the Force was deployment in disaster-like situations, search/ rescue operation in actual disasters and assistance to civil administration in relief and rehabilitation process. Audit observed the following:

- (a) No Standard Operating Procedures (SOPs) had been prescribed for deployment of Force personnel. Against a sanctioned strength of 1,588, the actual strength of the Force was 1,142 of which only 358 personnel (31 *per cent*) were actually deployed in its units. The balance 69 *per cent* of its personnel were utilized for purposes such as parade/quarter guard duties (243), attachment with Home Guard/Civil Defence units (76), various offices (244), attached to political leaders and serving/retired police officers as PSOs/orderlies (86) and with trade⁶ duties (36). The balance (99) were on leave/training.
- (b) It was mandatory for Force personnel to undergo a basic re-orientation course followed by specialized courses. Only 399 personnel were imparted training on orientation course, 465 personnel were imparted training on disaster management courses and 237 on specialized⁷ courses during 2010-11 to 2014-15.
- (c) Specialists such as engineers, technicians, electricians, dog squads and medical/ paramedics were not available with the Force.

Thus, not only was the State Disaster Response Force significantly short of its sanctioned strength by 28 *per cent*, the bulk of the available manpower was neither fully trained nor deployed for disaster relief and rehabilitation thereby defeating the objective of creation of the Force.

⁶ Gardener, Carpenter, Plumber, Painter, Barber, Electrician, Washer man, Tailor and Mason

⁷ Avalanche rescue course (87), Water ship course (30), Biological incident course (16), Advance search and rescue operation (11), Auxiliary Firefighting (09), Flood/ cyclone disaster response (13), Earthquake Disaster Response and Management course (19), Emergency response rail transport accident course (04), Life support basic course (12), Life support advance course (12), Collapse structure search and location course (06), Incident command management system (03), EOC Management (01), Chemical Disaster first responder course (05), Unexploded bombs and explosive safety (04) and Radiological and Nuclear Emergency (05)

In response to the audit observations, the Commandant General Home Guards/Civil Defence issued (June 2016) instructions for reversion of all personnel of the Force posted in home guard/civil defence district units to Disaster Response Force components and utilization of Force personnel exclusively for rescue duties.

2.1.2 Disaster Risk Assessment

The SDMP (February 2012) emphasizes conducting assessment of hazards, vulnerabilities and risks prevailing in the State and preparation of risk maps on the basis of outcome of the assessment. Accordingly, the State Government was to undertake risk assessment in 13 districts identified as multi-hazard districts.

Audit observed that no hazard and disaster risk map of the State had been prepared though ₹20 lakh had been released (June 2014) under 'Capacity Building' for this purpose. Data relating to nature, location, intensity and likelihood of possible major hazards and population and assets at risk were not available with the State Government. Consequently, realistic and informed strategies and action plans for disaster risk reduction could not be formulated.

In the exit conference, the Commissioner Secretary, Relief and Rehabilitation Department stated that risk maps would be prepared in respect of each district.

2.1.3 Prevention and Mitigation Measures

The Disaster Management Act, 2005, requires that the State Government should establish a State Disaster Mitigation Fund (SDMF) and District Disaster Mitigation Fund (DDMF) for prevention and mitigation of disasters and for planning, training, capacity building, procurement of equipment, etc. as part of disaster management.

Audit noticed that the Disaster Mitigation Fund had not been established in the State as the SDMP did not stipulate earmarking of funds. In the exit conference, the Commissioner Secretary, Relief and Rehabilitation Department accepted that pre-disaster activities such as mitigation and preparedness were not undertaken in the State and the Department is now focusing on such activities.

2.1.4 Regaining/ Restoring Wetland/ Water Bodies/ Flood Channels

In the floods of September 2014, Srinagar and adjoining districts were the most affected areas. The heavy rainfall resulted in huge water discharge in the Jhelum river exceeding the carrying capacity of the river and its flood channels. This combined with blocked flood channels and inadequate flood control measures triggered floods with devastating effect.

The flood spill channels with original carrying capacity of 17,000 cusecs of water had been reduced to a carrying capacity of 4,000 cusecs of water due to accumulation of sediment load from various *nallahs* which merge with the channel at various points. To address this issue, a scheme for improvement to

flood spill channel by way of construction of central cunnette⁸ was taken up (2008-09) by the Irrigation and Flood Control (I&FC) Department at an estimated cost of ₹14.93 crore. Subsequently, this was subsumed (2010-11) under the 'Flood Threat to River Jhelum Scheme' at an estimated cost of ₹50.68 crore. Audit examination of records of the two schemes revealed the following:

(i) Improvement to Flood Spill Channel by Construction of Central Cunnette

- (a) Against 23,501 metres and 6,61,478 cubic metres of flood spill channel required to be treated and excavated respectively as per the Detailed Project Report (DPR) of the scheme, only 19,075.09 metres (81 *per cent*) and 5,53,511.81 cubic metres (84 *per cent*) were treated and excavated respectively.
- (b) An amount of ₹1.98 crore was utilized for purposes not related to the flood spill channel such as survey and investigation, contingency charges, procurement of cement, Reinforced Cement Concrete pipes, steel, laptops, cameras, gensets, payments necessitated by Court awards, construction of footbridge, drainage, chain link fencing, providing of gates, maintenance and repairs and construction of restoration wall. The Flood Spill Channel Division Narbal stated (March 2015) that project funds were utilized on such items due to non-providing of adequate funds for these items.

(ii) Flood Threat to River Jhelum

- (a) Similarly, against 11,947 metres and 11,78,331 cubic metres of flood spill channel required to be treated and excavated respectively as per the DPR of the scheme, only 8,087 metres (68 *per cent*) and 5,05,995.13 cubic metres (43 *per cent*) were treated and excavated respectively. Inadequate treatment of the channel resulted in blocking of free flow of water in the area.
- (b) ₹9.20 crore was utilized on construction of structures at Wullar lake and miscellaneous items which were not approved in the DPR. The Flood Spill Channel Division Narbal stated (March 2015) that works were shifted to Wullar lake on the direction of the administrative department. No approval was obtained from GoI for diversion of the funds.
- (c) No Objection Certificate (NOC) was required to be obtained from wetland authorities for execution of construction works in wetland areas falling under the area of implementation of the scheme. The requisite NOC was not obtained prior to start of the work. Consequently, construction of drainage channel covering 1,641 metres, allotted (July 2011) to a contractor for an amount of ₹1.44 crore could not be completed due to objection raised against the construction by the wetland authorities. As a result, 2,07,172 cubic metres of earth could not be excavated from the wetland area and the wetland continued to remain filled with silt despite

⁸ A channel of small cross section dug in the bottom of a much larger channel or conduit to concentrate the flow at lower water stages

an expenditure of ₹27.97 lakh incurred on the project. The Flood Spill Channel Division Narbal stated (March 2015) that application is now being processed for grant of permission.

Had the two schemes been progressed and implemented as per the approved DPRs, the impact of the floods of September 2014 may have been mitigated.

2.1.5 Incorporation of Earthquake Resistant Designs in Building Codes

The SDMP approved in February 2012 envisaged that the National Buildings Code and other codes prescribed by the Bureau of Indian Standards (BIS) for seismic zones IV and V should be followed by the concerned departments. Following a series of low magnitude earthquakes which took place in the Kishtwar-Doda-Bhaderwah belt in May 2013, the Hon'ble Governor wrote (December 2013) to the Government, suggesting *inter-alia*, the need for retrofitting the existing buildings and mandatory incorporation of earthquake resistant design features for new constructions.

Audit noticed that while earthquake-resistant designs had been adopted for construction of office buildings, bridges, etc. these had not been made mandatory for private buildings. Further, disaster resistant designs and retrofitting techniques had not been ensured in re-construction of houses which were fully or severely damaged during the floods of September 2014 and for which relief was provided by the Government. Hence, the constructions remained vulnerable to earthquakes in a seismic sensitive zone.

2.1.6 Early Warning

The SDMP envisages that a mechanism should be in place to receive forecasting and early warning from agencies such as the Indian Meteorological Department (IMD) and the Snow and Avalanches Study Establishment. Modern equipment such as Doppler Radars and satellite based information were to form the basis of accurate forecasting, advance warning and alerts for floods, cloudbursts, snowstorms, etc.

Despite release (June 2014) of ₹20 lakh, the mechanism for early warning systems had not been established and funds were surrendered. In the exit conference, the Commissioner Secretary, Relief and Rehabilitation Department stated that an early warning system would be established very soon.

2.1.7 Emergency Operation Centres

The SDMP envisages establishment of Emergency Operation Centres (EOCs) in each district for quick response and effective decision-making during emergencies.

Audit observed that though the State Executive Committee (SEC) earmarked (2013-14) ₹2 crore for establishment of four EOCs in the Districts of Jammu, Srinagar, Leh and Kargil in the first phase, they had not been established.

In the exit conference, the Commissioner Secretary, Relief and Rehabilitation Department stated that establishment of EOCs is underway and would be established very soon.

2.1.8 Capacity Building and Public Awareness for Managing Disasters

The Disaster Management Act, 2005, envisages promoting general education, awareness and community training about disasters and building capacity to combat disasters as an important pre-disaster activity. Further, the Standard Operating Procedures (SOPs) prescribed by GoI envisaged mock drills by search and rescue teams at State level to test their preparedness.

Audit noticed the following:

- (a) GoI allocated ₹20 crore for the purpose of building capacity such as procurement of equipment for rescue and relief, establishment of early warning system in the district headquarters, creation of public awareness for pre-disaster preparedness and for imparting training to various stakeholders. Of this, ₹12 crore was released by GoI. However, the State Government could utilize only ₹1.79 crore. Consequently, balance funds of ₹8 crore were not released by the GoI.
- (b) Out of ₹6.02 crore released (June 2014) to the Revenue Department for pre-disaster management activities, ₹29 lakh was utilized as of March 2015 and balance amount of ₹5.73 crore was surrendered. Similarly, ₹32 lakh released through sanction to the Technical Education Department for skill upgradation of workers had not been utilized.
- (c) ₹25.24 lakh provided by GoI for ‘capacity building’ for disaster management was spent by the Revenue, Relief and Rehabilitation Department on procurement of vehicles during 2014-15 not covered under ‘capacity building’.
- (d) While chapter on disaster management had been included in the academic curriculum by the State Board of School Education and certain initiatives had been taken such as conducting training programs on various aspects of disaster management and training of sarpanches, divisional level officers, engineers and volunteers, no steps were taken to increase public awareness about risk mitigation strategies; and
- (e) Mock drills were not organized for any type of calamity/disaster to sensitize the relief machinery as preparedness measures were not reflected in the Annual Reports submitted to the GoI.

Thus, the State Government had not undertaken capacity building activities including public awareness and preparedness as envisaged in the Disaster Management Act and ₹10.21 crore out of ₹12 crore released by GoI remained unutilized. Further, ₹25.24 lakh was utilized for procurement of vehicles during 2014-15 instead of capacity building.