

CHAPTER II: PREPAREDNESS

2.1 Standards of preparedness

2.1.1 Pre-disaster management

Government of Maharashtra prepared (1997) the State Disaster Management Action Plan (SDMAP) including preparedness for floods on the lines of 'Model Action Plan' (MAP) formulated by Government of India in 1981 exclusively for management of floods. The SDMAP is in existence for its operation by various departments and agencies of the GOM and other Non-Government Organisations (NGOs). It includes:

- formation of coordination committee both at the state level and district level for meeting periodically before monsoon, in association with NGOs concerned;
- formation of emergency operation control centers equipped with a number of telephones, wireless sets, with arrangement to man them round the clock;
- broadcasting educational and informative talks on disaster preparedness for general public,
- system of keeping strict vigil on the water levels in the reservoirs through reservoirs engineers and communicating flood warning down the line before releasing water therefrom,
- imparting training to state level officials, private sector, and NGOs through Yeshwantrao Chawhan Academy of Development Administration, (YASHADA), and,
- keeping warning and communication system and instruments in the Emergency Operation Centre (EOC) in operational condition.

Similar plans shall also to be prepared at district level, taluka level and village level. Annual action plan is also to be prepared at taluka level.

2.1.2 Post disaster management

While extending relief and rehabilitation operations during and after disaster, the evaluation shall be made for determining the adequacy of resources, shortcomings if any, coordination between various agencies, community participation, need for long term planning, etc. as prescribed in SDMAP which would eventually be helpful in updating the plans.

With a view to ensure proper implementation of the plans for meeting natural calamities, a check list of action points forwarded with MAP for arranging necessary actions by the various departments and officials of the Revenue

Department, shall be used repeatedly and periodically as a follow-up measure, before, during, and after the flood disaster.

2.2 Audit findings

2.2.1 Disaster management plan

The Disaster Management Plan (DMP) included activities like (i) setting up of a Communication Network, (ii) setting up of Emergency Operation Center (EOC) in Mantralaya and District Control Rooms (DCRs) at the headquarters of all the districts and (iii) creation of a Disaster Management Information System (DMIS). During the period 1996-97 to 1999-2000, Rs 31.12 crore was spent on these activities. Thereafter no expenditure was incurred on DMP till May 2006.

In the ten test checked districts and Mantralaya, it was observed that the DMP was not prepared in Sangli District despite bad experience of destruction by floods in July 1989, July 1991 and September 1994. In remaining nine districts DMPs prepared in 1997 were neither updated nor rehearsed. At State level also the DMP was not updated and rehearsed.

The annual action plan for 2005-06 was available only in nine out of twenty seven talukas. The DMPs were, however, not prepared by any of the talukas.

The Government agreed (September 2006) to furnish a note on rehearsal done during 2006; the same is awaited (December 2006).

2.2.2 Long term planning after disaster

Of the ten test checked districts, the need for long term planning and reconstruction was assessed only in the District of Mumbai after disaster in 2005. In nine other test checked districts, no such assessment was made after the disaster, though the Districts of Sangli, Thane and Bhandara were badly affected by the floodwaters of the rivers Krishna, Waldhuni, and Vainganga respectively.

GOM proposed (February 2006) to have a long term rehabilitation programme for Mumbai City including (i) regular desiltation and removal of encroachments on the banks of Mithi river (refer box for more details) for restoring its normal discharge carrying capacity, (ii) replacement of existing storm water drainage system, (iii) resettlement of people living in land slide prone areas and low lying areas, (iv) relocation of houses in blue zones, and (v) establishment of epidemic control centres. Other than the desilting of Mithi river, no improvement was noticed in audit in other areas of the long term programme.

DMP was not prepared in Sangli District which was worst affected in flood.

Payments of transportation charges of excavated material made without stack measurement and proof of transportation.

The Mithi river: Shrinking catchment.

On 26 July 2005, the city of Mumbai witnessed 94.4 cm rainfall within 18 hours. Due to the shrunken carrying capacity of the Mithi river, flood water spread over the suburbs causing heavy damages. Consequently, Mithi restoration plan came out for implementation under MRDPA⁵ created specifically for its development. The Authority coordinates activities allotted to various related organisations, BMC⁶, MMRDA⁷, Collector, MSD⁸, MPCB⁹, CWPRS,¹⁰ Pune and IIT, Pawai.

The fact-finding committee appointed by Government in July 2005 (CHITALE Committee) recommended, among others, desiltation, widening, deepening and evacuation of encroachers. They reiterated the recommendation made in Brihan Mumbai Storm Drainage and Sewer Rehabilitation Project (BRIMSTOWAD) in February 1993.

On acceptance of recommendations of CHITALE Committee the MRDPA agreed to implement the desilting and widening works in two phases before monsoon 2006. Till 26 June 2006, MMRDA and MCGM¹¹ had claimed to have excavated about 12.96 lakh cubic meter of silt / debris / rocks from the river. The excavated material of 7.57 lakh cubic meter was transported at dumping sites at, Turbhe Mandale and Dahisar in Thane District by MMRDA at a cost of Rs 5.55 crore as the dumping sites were not provided by MCGM or by Collector, MSD, Bandra. Neither the records of stack measurement taken at dumping sites nor proof of transportation in the form of toll receipts, number of trips, number of trucks engaged, lorry numbers, dates of transportation etc. was on record though MMRDA was required to maintain all these records, as per decision of the Executive Committee. Since there were no records on the basis of which payment were made, the matter requires detail investigation.

Government agreed (September 2006) for preparation of long term plan for all the districts and also accepted the facts regarding Mithi river floods of 2005.

Though GOM contended, in the exit conference, that long term plans were prepared, such plans were not made available to audit in the four test checked districts for verification.

⁵ Mithi River Development and Protection Authority

⁶ Brihan Mumbai Municipal Corporation

⁷ Mumbai Metropolitan Region Development Authority

⁸ Mumbai Suburban District

⁹ Maharashtra Pollution Control Board

¹⁰ Central Water and Power Research Station

¹¹ Municipal Corporation of Greater Mumbai

2.2.3 Warning dissemination system

A warning system is essential to indicate the onset of a disaster. This may range from sirens to public announcements. A system of pre-disaster risk assessment, forecasting and warning dissemination helps in improving preparedness for disaster management. Of the 10 test checked districts, the warning systems were not in existence in three¹² districts. Of the rest, the systems were not functional in four districts.

VHF sets (53) in four districts were not functional during flood 2005.

It was observed that 53 out of 69 Very High Frequency (VHF) sets installed in four¹³ districts in 1998-99, as a part of disaster management, were not functioning since 2003-04 for want of maintenance and repairs. As a result, these could not be used during disaster 2005. Even during flood 2006, the VHF systems in Nanded and Sangli Districts were found non-functional. These were however, partly functional in Kolhapur District.

Government while accepting (September 2006) the facts, stated that the VHF technique was outdated and annual maintenance contract in all the districts could not be entered into. Hence the system was defunct. Government should have replaced such outdated sets by new one well in advance as a part of preparedness.

2.2.4 Staff not trained

Provision for imparting training to the staff in forecasting, warning dissemination and evacuation techniques was included in the DMP for mitigating and preventing the disaster. It was, however, noticed that necessary training was not imparted to the staff concerned in five¹⁴ test checked districts.

Further, during the period 2002-06, only 108 officers from seven departments¹⁵ were given training. The number of trained officials was negligible as compared to the staff in the departments. Regarding training of Home Guards, as required in GOI's action plan, records were not made available to Audit.

2.2.5 Verification of stock of relief articles and essential medicines

Adequate stocks of relief articles and essential medicines (boats, tents, tarpaulins, blankets, ropes, bleaching powder, vaccines for cholera, typhoid, snakebite, water purification tablets, insecticides for anti-fly and anti-mosquito measures, hand pump sets for drinking water) are required to be arranged by various departments¹⁶ and verified by District Collector before the onset of monsoon. Necessary equipment needed in case of floods was also required to be intimated to the local Army Commanders. It was observed in the test

¹² Mumbai, Parbhani and Raigad

¹³ Kolhapur, Nanded, Pune, Thane

¹⁴ Bhandara, Gondia, Nanded, Parbhani and Raigad

¹⁵ Agriculture, Home, Irrigation, Public Health, Revenue & Forests, Rural Development & Water Conservation, Urban Development.

¹⁶ Home, Public Health and Revenue & Forests

checked districts that no such stock verification report was submitted by the concerned offices to the district authorities. As a result, stock of water purifying tablets was not available at the time of flood 2005. The same was procured and supplied after 15 to 88 days from the disaster.

Government stated (September 2006) that they had never expected this kind of flood situation.

2.2.6 Removal of silt and drainage cleaning

With a view to keep flood damages as well as distress at the minimum, the MAP, (1981) had suggested cleaning of drainage passing through residential areas regularly well before the onset of monsoon for restoring their designed discharge. It was observed that in none of the ten test checked districts, instructions for drainage cleaning were issued from the Administrative Departments (Revenue and Forests and Urban Development) to the district authorities and local bodies (Municipal Corporations, Municipal Councils). In Mumbai District, the floodwater continued for 8 to 10 days mainly due to choked drainage and reduced water carrying capacity of Mithi river. This was mainly due to non observance of the recommendations of BRIMSTOWAD Report (1993), which suggested desiltation, widening and deepening of the river.

The Government stated (September 2006) that due to resource crunch, recommendations of the BRIMSTOWAD report were not implemented.

2.2.7 Overall Assessment of preparedness

Coordination Committee on natural calamities was required to meet at least one month before the onset of monsoon each year (May) for assessing preparedness for disaster management by calling representatives of important NGO's besides officers of various Government offices and local bodies. No such meeting was held in May 2005. However, immediately after July 2005 meetings were conducted at Mantralaya to monitor the relief measures.

The MAP of GOI (June 1981) provides for close liaison with the local officials of Food Corporation of India for stocking food grains at vulnerable places for distribution to the flood affected families. It was observed that no such liaison with the FCI officials for stocking adequate food grains was made in any of the test checked districts. Government stated (September 2006) that adequate stock of food grains was available during flood.

2.3 Conclusion

The floods caught the State unaware. Disaster Management Plan has not been rehearsed in most of the districts. Co-ordination Committee meetings were not held before monsoon 2005. Level of preparedness for flood with reference to Modal Action Plan of 1981 was not adequate in the State as the VHF system was not functional and sufficient staff was not trained for disaster management before onset of monsoon. As a result, there was huge loss of life

and property. The long term planning after disaster 2005 was not done except desilting and widening of Mithi river in Mumbai.

2.4 Recommendations

- DMPs at all levels need to be updated, improved and rehearsed.
- The warning system/communication systems should be kept operative through periodic rehearsals, maintenance, etc. particularly before the onset of monsoon.
- Training should be imparted to all staff likely to be associated with rescue, relief and rehabilitation operations, including Home Guards and Non-Government Relief Organisations.
- A time-bound comprehensive plan for restoration of the Mithi river needs to be prepared and implemented.

Government accepted the recommendations during exit conference (September 2006).