Chapter 7

Communicating and Sharing Knowledge About Disaster Preparedness

Communication is the mainstay for managing emergencies. Communications can be of immense use in effective disaster management by being instrumental in promoting awareness and dissemination mechanisms during the preparedness stage and for emergency communication during times of disaster (Department of Agriculture and Cooperation 2001). Recent disasters have demonstrated the important role effective communication systems play.

Communicating and sharing knowledge at national level

Nationally the need for a state-of-the-art communication system for disaster management has been recognised. However, information coordination and management are major challenges in India due to the sub-continental proportions of the country and the diversity of languages and cultures. In order to address the challenges and use communication technology for rapid response for disaster preparedness and management, effective decision-making, and improving the skills of practitioners, the following initiatives are being taken within the national framework.

National emergency communication network

The communication network between the national and state EOCs has been the responsibility of the Department of Telecommunications. However, considering that communication becomes the first casualty in most rapid onset disasters, efforts are being made to put in place a multi-mode and multi-channel communication system. The police network (POLNET), formerly for police personnel only, has been made available for disaster management. The POLNET has been extended to the Emergency Operations' Centres (EOCs) and district incident commanders (district collectors) in addition to the available terrestrial links.

National emergency communication plan

A National Emergency Communication Plan was developed, and it identified an implementation process for a dedicated communication system for disaster management with built-in redundancies. The plan's objective is to set up a reliable information and communication network for emergencies employing both terrestrial and satellite-based communication technologies. This plan has been approved by the government.

The Indian Space Research Organisation (ISRO) has set up a communication hub on a V-Sat terminal with audio, video, and data communication facilities in New Delhi: it is connected to 25 client nodes in state EOCs and national nodes. Phase I of the National Disaster Management Communication Plan to provide satellite-based mobile voice, data, and video communications between national EOCs and state EOCs as well as mobile EOCs has been completed. Phase II for connecting national, state, and district EOCs with disaster sites is currently being implemented. The plan integrates the existing communication links with state-of-the-art dedicated emergency communication measures. A schematic diagram of the plan is given in Figure 7.

Indian disaster resource network

During disaster situations, an organised inventory of specialised equipment, supplies, and skilled personnel is essential for mobilising resources for immediate response. Lack of an updated inventory has, in the past, resulted in loss of precious time.

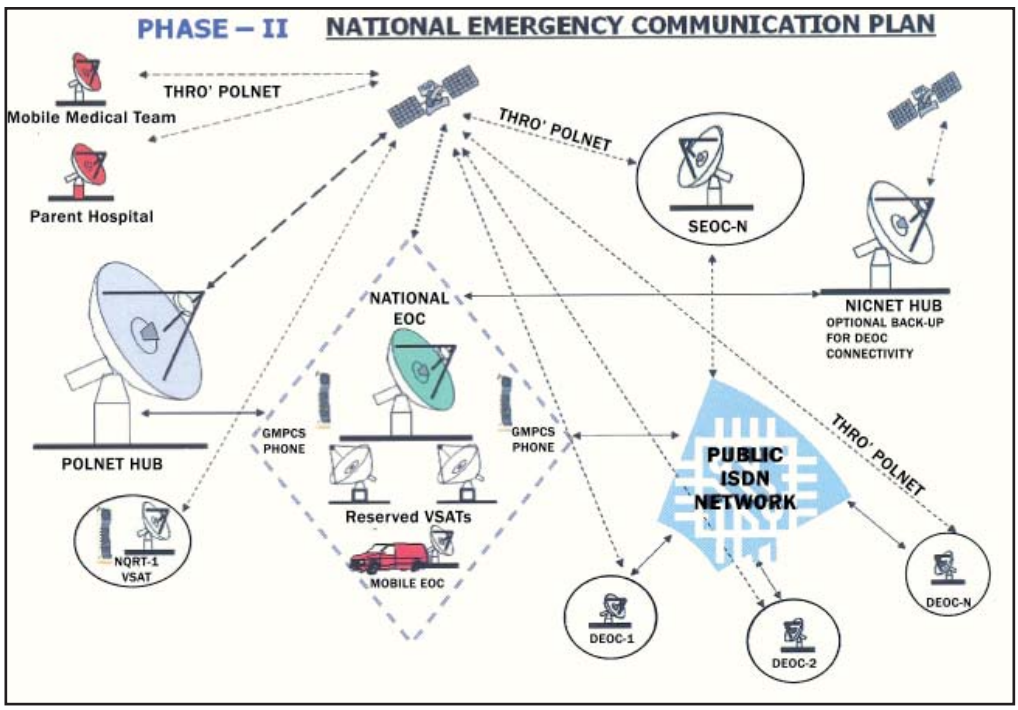

Figure 7: Schematic diagram of the national emergency communication plan

A nation-wide electronic inventory of essential and specialist resources for disaster response has been established called the Indian Disaster Resource Network (IDRN). The IDRN is a web-based centralised database that provides quick access to resources, hence minimising the time taken to respond to emergencies. The IDRN is an organised information system for collecting and transmitting information about specific equipment, human expertise, and critical supplies from district level onwards.

The IDRN lists the equipment and resources by type and by function as well as location. Being a live system the inventory is revised every quarter with entries made at the district and state level. The nodal authority in each district is responsible for collecting, compiling, and updating the data in the inventory in the central server with the help of the relevant district departments. Security features have been built in to prevent unauthorised entry into the web portal. The data of specified items in the inventory are collected from various departments at the sub-district (sub-division or block) level in paper format and entered at the district level through the IDRN portal.

The users and partners of IDRN are 602 district administrations of 35 states and union territories (UTs); 35 state and UT administrations; 5,000 member corporate bodies registered with the Confederation of Indian Industry; around 33,000 builders, contractors, and construction companies registered with the Builders' Association of India; Indian Railways; and public sector undertakings. Over 84,000 records from 564 districts have been entered, while data from the remaining districts are being collated.

GIS database and decision support system

The geographical information system (GIS) database is an effective decision support tool for emergency responders through which they can have access to information in terms of crucial parameters for areas affected by disaster. Efforts are being made to set up a mechanism for sharing thematic and spatial data through a designated electronic clearing house. The National Spatial Data Infrastructure (NSDI) was recently set up by the Survey of India (Department of Science and Technology) to collect, compile, analyse, and prepare value-added maps for use by various agencies in the field of disaster management; for management of natural resources; and for industrial applications. The NSDI will work towards interoperability of data and information-sharing protocols to facilitate effective policy analyses and informed decision-making for improving the effectiveness of disaster management (DM). It will then form a synergic linkage with the National Database for Emergency Management (NDEM) established by the Ministry of Home Affairs and designed to have spatial and non-spatial databases in a secure environment. It will be enlarged and fine-tuned to address the information needs for DM during both natural and technological disasters through the entire management cycle.

India disaster knowledge network

Knowledge of disasters transcends the rigid disciplines of prevalent knowledge and has to be considered within the entire gamut of knowledge available. The need for integrating disaster-related knowledge is recognised in various institutions across the country and symbiotic linkages are being put into operation through an on-line India Disaster Knowledge Network (IDKN) portal to provide a platform for practitioners and technical institutes to share tools, formats, guidelines, and other resource materials for various disasters. The IDKN will cover natural, manmade, and biological disasters and evolve as a network of networks tuned to the needs of disaster managers, decision makers, communities, and many others. The process of encouraging and forging symbiotic linkages is to be enhanced by forming horizontal and vertical linkages with premier international organisations. The focus will be on building partnerships to complement each other's efforts.

Communicating and sharing knowledge at regional level

Disasters of great proportion are rarely confined within national boundaries. Recent disasters bringing devastation in several South Asian countries have brought into focus, as never before, that nothing short of strong regional cooperation can reduce the risks of disaster in any meaningful manner in this part of the world. Mutual cooperation among countries with vulnerability to similar disasters can go a long way to reducing the risks from disasters.

The Department of Science and Technology and other scientific research institutions pursue international cooperation with many countries. Regional cooperation in promoting early warning systems for disasters is spearheaded by the Indian Meteorological Department (IMD) and Central Water Commission for Joint Flood Management. Institutional arrangements for sharing real-time data on water levels in transnational rivers and formation of oceanic depressions are already in place. After the tsunami in 2004, the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC) has been instrumental in triggering a series of cooperative initiatives among member countries with the purpose of sharing meteorological and early warning information; however, addressing disaster management issues holistically had not been attempted until recently.

SAARC Disaster Management Centre, New Delhi

The South Asian Association for Regional Cooperation (SAARC) has taken the initiative of establishing a SAARC Disaster Management Centre (SDMC) in New Delhi. Inaugurated on 10th October, 2006, the SDMC is currently located within the National Institute of Disaster Management. It is to be developed as a dynamic centre for knowledge,

research, and training on disasters, actual or potential, natural or manmade, in any part of South Asia. It is envisioned that the SDMC will be a global centre of excellence in the field of disaster risk mitigation and management. The SDMC is expected to work with all the stakeholders in the member countries on disaster management by providing policy advice and facilitating capacity-building services such as strategic learning, research, training, system development, and promotion of expertise for effective disaster preparedness and mitigation.

The SAARC Disaster Management Centre is expected to collaborate with other SAARC Centres, particularly the SAARC Meteorological Research Centre, SAARC Coastal Zone Management Centre, and SAARC Forestry Centre to avoid duplication and achieve synergy in terms of programmes and activities.

Another regional networking association of South Asian countries called the Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC) is considering disaster management as one of the key areas of cooperation. Comprising of countries dependent on the Bay of Bengal for their trade; viz, Bangladesh, Bhutan, Nepal, India, Sri Lanka, Myanmar, and Thailand, BIMSTEC aims to provide a unique link between South Asia and South-east Asia based on mutual interests and common concerns among member countries and the complementarities of their economies.

International and multilateral agencies

Disaster preparedness in India has received assistance from various international and multilateral agencies. The disaster management planning process taken up by the state of Maharashtra in the aftermath of the Latur Earthquake was sponsored by the World Bank, and the Gujarat Reconstruction Programme received assistance from various agencies, one of them being the World Bank. The Disaster Risk Management Programme (DRM), currently being implemented in 169 multi-hazard prone districts, is a collaborative effort of the UNDP, USAID, and European Union. The ICS (Incident Command System) programme, through which trainers and incident commanders are being trained in the United States, is funded by the USAID.