Contemporary studies and work towards disaster risk reduction

Role of Science and Technology:

The Sub-Committee on Disaster Reduction (SDR) ofthe National Science and Technological Council (NSTC) in the United States has articulated important areas that require continued energy and resources to meet the challenges of hazard risk reduction. The areas include terrorism events, mitigation activities, hazard information, hazard research, risk communication capabilities etc. The comprehensive approach to disaster management entails inclusive strategy for disaster management i.e. prevention and mitigation, preparedness, response and recovery, correlated for the purpose of sustainable development strategies. The all-hazards approach targets developing a common framework based on knowledge from all relevant fields for handling all types of disasters. The focus is harnessing science and technology for risk reduction from all man-made or natural disasters including terrorism. The integrated approach places reliance on administrative coordination for joint strategizing for risk reduction that includes all organisations. The developmental relief approach underlines the need of undertaking disaster relief as part of long term development.

Role of Information Technology:

Information Technology has revolutionized communication giving connectivity to remote and far flung areas. The World Wide Web and the Internet have provided information in specialized branches of disaster management. The information communication revolution has made possible the setting up of local area and wide area networks known as Intranet and Extranet that link up institutions over distant regions and facilitate information sharing on a global basis. Modern strategies include Geographical Information System (GIS) by which detailed spatial analysis of ‘at risk’ area is accomplished through satellite imagery. Indian Meteorological Department (IMD) has commissioned a satellite based communication system called cyclone warning dissemination system for cyclone warning in coastal areas. Information Technology has greatly aided planning for disaster response and preparedness and has made disaster risk reduction more fact based.

Role of Information, Education and Public Awareness:

Modern approach is Community based disaster management which involves local people, Panchayati Raj Institutions (PRIs) police, paramilitary forces, fire brigade, medical team and people from NGOs. Manpower planning with effective strategies can largely reduce the risk and also enhance the preparedness of the people about various disasters. Managing people implies creating awareness by providing knowledge about information and technology, resources and skills. The aim is to improve the ability of vulnerable communities to cope with disasters through developing their coping capacity by building on existing practices, skills and local structures. According to a policy statement of Red Cross 2001, adopting a community based approach is the best guarantee that disaster preparedness will be implemented and sustained.

Role of Stakeholder's Participation:

All concerned parties in disaster policy and implementation should put in concerted effort towards disaster preparedness. This implies continuous participation of all stakeholders with regard to new and emergent issues in town planning, administrative up gradation, employment and livelihood in urban and rural areas, mobilization of nongovernment efforts etc

Role of Disaster Prevention:

Disaster prevention involves activities to provide out right avoidance of the adverse impacts of hazards and means to minimize environmental, technological and biological disasters. In Uttarakhand, major landslides occur because of blasting carried out for road cuttings, construction of dams and reservoirs, housing schemes, agricultural practices on steep slopes etc. implemented without proper environmental impact assessment. Public policy with preventive provisions is required to protect against landslide hazards such as minimizing the exposure of facilities and populations to landslides. Preventive and remedial measures are studied within the purview of environmental geomorphology. Best preventive measure against cyclone is provision of warning system and second line unconventional communication infrastructure called Amateur Radio. The National Institute of Amateur Radio (NIAR)has established HAM radio networks along the coastal belts of Andhra Pradesh. Drought is a slow onset disaster and can be controlled through timely action and proper monitoring of the drought prone area through remote sensing.

Other measures includeplanting drought resistant seed varieties and education to farmers. Proper town planning and effective enforcement of legislation and codes for mitigation can effectively prevent loss of life from earthquakes. Undesirable side effects of dams and embankments have shifted focus to non structural mitigation measures to prevent losses from flood disasters