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Development of geospatial framework for risk reduction in districts of India

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India administratively comprises of 28 states which include 632 districts and 7 Union territories, out of which 199 districts are multi-hazard prone. Area wise, 59% of the land mass of India is susceptible to seismic hazard, 5% of the total geographical area is prone to floods, 8% of the total landmass is prone to cyclones, 70% of the total cultivable area is vulnerable to drought and the hilly regions are vulnerable to avalanches/landslides/hailstorms/cloudbursts. Section 30(2)(xvi) of the Disaster Management Act 2005 stipulates that 'the District Disaster Management Authority (DDMA) shall coordinate the response to any threatening disaster situation or disaster and shall mandatorily prepare District Disaster Management Plan (DDMP). Each district of India need to identify the elements of risk through the process of identifying the hazards, vulnerability and adaptive or coping capacities. Though it is prepared mainly in a textual form but the use of spatial data to generate such plans can phenomenally increase the usability and efficiency of the whole program. This paper discusses a model conceptual geospatial framework at a district level which has been developed for identification of the risk using synthesis of geospatial data sets and ancillary data to have first order understanding of the risk owing from multiple hazards in a district. Nellore district of Andhra Pradesh state which is prone to multi hazards has been taken as the study area. A composite multi-hazard map has been generated from through the process of overlaying operation and providing suitable rankings to various classes of individual hazard maps of earthquake, cyclone and flood. This study helps in identifying the priority areas (areas of highest risk) wherein the district administration can undertake fast track mitigation measures to minimise the effects of the possible disasters in the future.

Biography

J K Garg is currently Professor of the University school of Environmental Management and also the Director, Centre for Disaster Management Studies in Guru Gobind Singh Indraprastha University, New Delhi. He has done MPhil (Environmental Science) from Jawaharlal Nehru University, New Delhi and PhD in the area of Wetland Conservation and Management from Gujarat University, Ahmadabad, India and has more than 35 years of experience. He has pioneered the research pertaining to use of remote sensing and GIS for environmental applications in the country while working at Space Applications Centre, Indian Space Research Organisation (ISRO). He has more than 140 publications which include research papers in international/national journals, book articles, and reports etc.

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