

# KARNATAKA STATE DISASTER MANAGEMENT POLICY



**KARNATAKA STATE DISASTER MANAGEMENT AUTHORITY  
&  
GOVERNMENT OF KARNATAKA  
REVENUE DEPARTMENT (DISASTER MANAGEMENT)**

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# 1 Preamble

## The Context:

1.1.1. Disasters disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often pushing nations, in quest for progress, back by several decades. **With the increasing frequency and intensity of disasters, as an acknowledgement of good governance in a caring and civilized society, the state needs to deal effectively with the devastating impact of disasters. Thus, efficient management of disasters, rather than mere response to their occurrence, has in recent times, received increased attention both within India and abroad.**

The UN Office for Disaster Risk Reduction's (UNISDR) Global Assessment Report on Disaster Risk Reduction (GAR) 2015, a risk profile of India, estimates that Average Annual Loss (AAL) from multi-hazard disasters in India is to the tune of \$9.8 billion per year. **It has also shown that India suffered** a whopping USD 79.5 billion economic loss due to climate-related disasters in the last 20 years, according to a UN report which **Disaster Risk Reduction highlights** the impact of extreme weather events on the global economy. **From the report titled** 'Economic Losses, Poverty and Disasters 1998-2017' was compiled by the UN Office for Disaster Risk Reduction.

The lessons learned from the long trail of disasters, have led to a gradual realization among the world community that the developmental gains cannot be sustainable unless disaster risks are adequately addressed, **preventive** management of natural hazards constitutes an important element of India's national **developmental** activities. The Tenth, Eleventh and Twelfth Five-Year Plans **has also specifically** highlighted the need for considering risks emanating from natural hazards in the developmental plans. As a result the Government of India enacted the Disaster Management Act-2005, National Policy-2009, and National Disaster Management Plan 2016, Drought Management Manual-2009 (amended 2018). Many States have also evolved similar documents.

Government of Karnataka, is following up its **disaster preventive and management implementation** based on National Acts and Guidelines issued by National Disaster Management Authority and notification issued by Ministry of Home Affairs, Finance Ministry etc. **especially** in relief, evacuation and recovery measures.

The Climate change impacts and rapid urbanization are increasing the exposure of communities to natural hazards with greater risk of damage & losses. With time and need, the State is moving towards its own DM policy, with reference to National Disaster Management policy-2009, Global documents (SFDRR, SDG and UNFCCC) and ground reality of the State to Hazard, Risk and Vulnerability.

## Disaster Risk in Karnataka

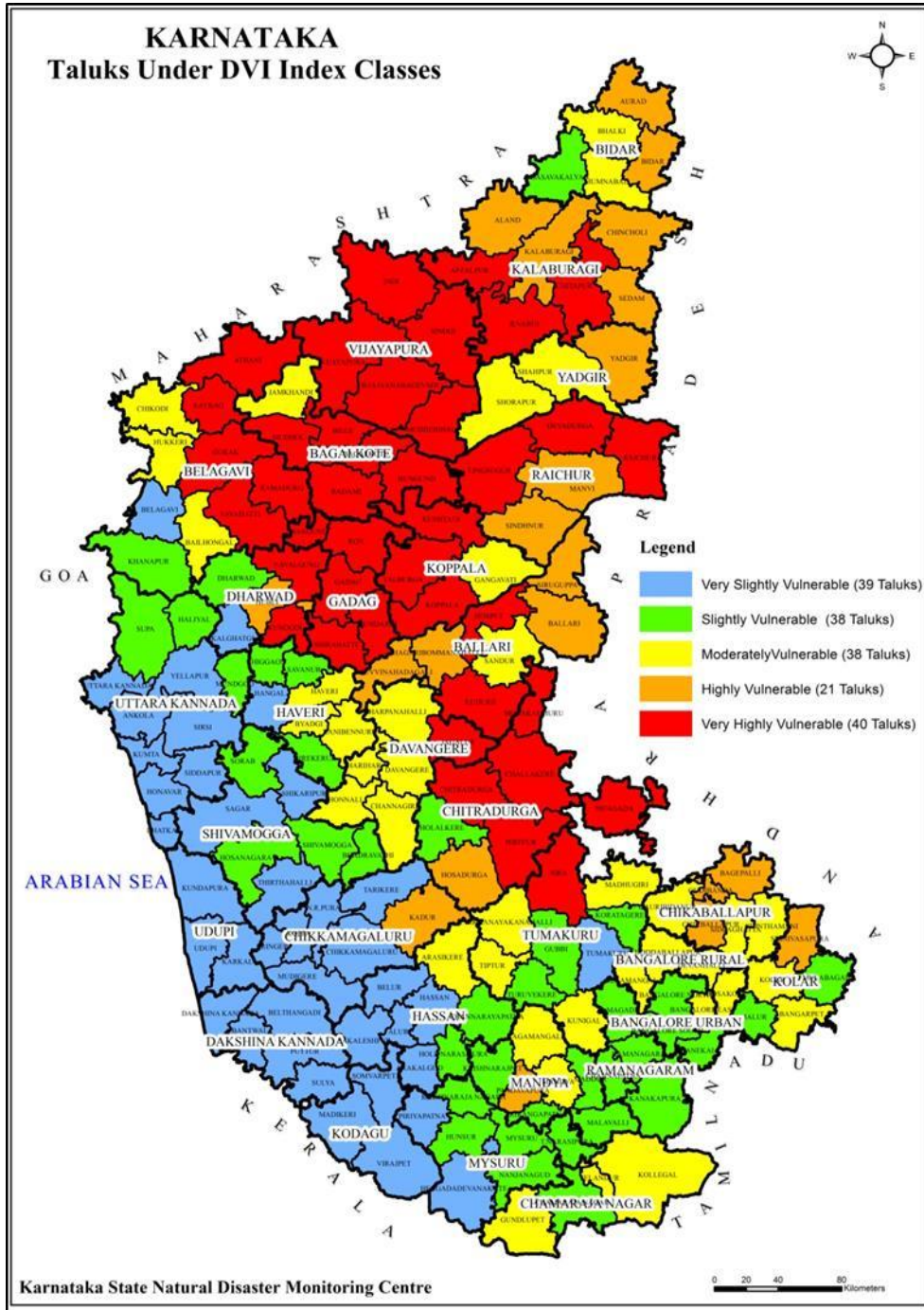
1.2.1 The state of Karnataka is one of the most disaster-prone state in southern India owing to its geo environmental diversity and vulnerability. The state is prone to different kinds of natural hazards (disasters) such as droughts, floods, cyclones, hailstorms, landslides and earthquakes. 80% of the state's geographical area is susceptible to drought, 22% of the state's geographical area is prone to a moderate earthquake, 24% of the state's geographical area is prone to cyclones and heavy winds, and more than 30% of the state's slopes are prone to landslides. While many of these vulnerabilities are on account of natural causes many times human action often exacerbates is a contributing factor.

In addition to vulnerability to naturally induced hazards, vulnerability to vector borne epidemics such as Chikangunya and Dengue, other epidemics like Kyasanur Forest Disease is on the rise. **The Urban sprawl with lack of hygiene infrastructure and unhygienic living conditions has also contributed to increase vulnerability.**

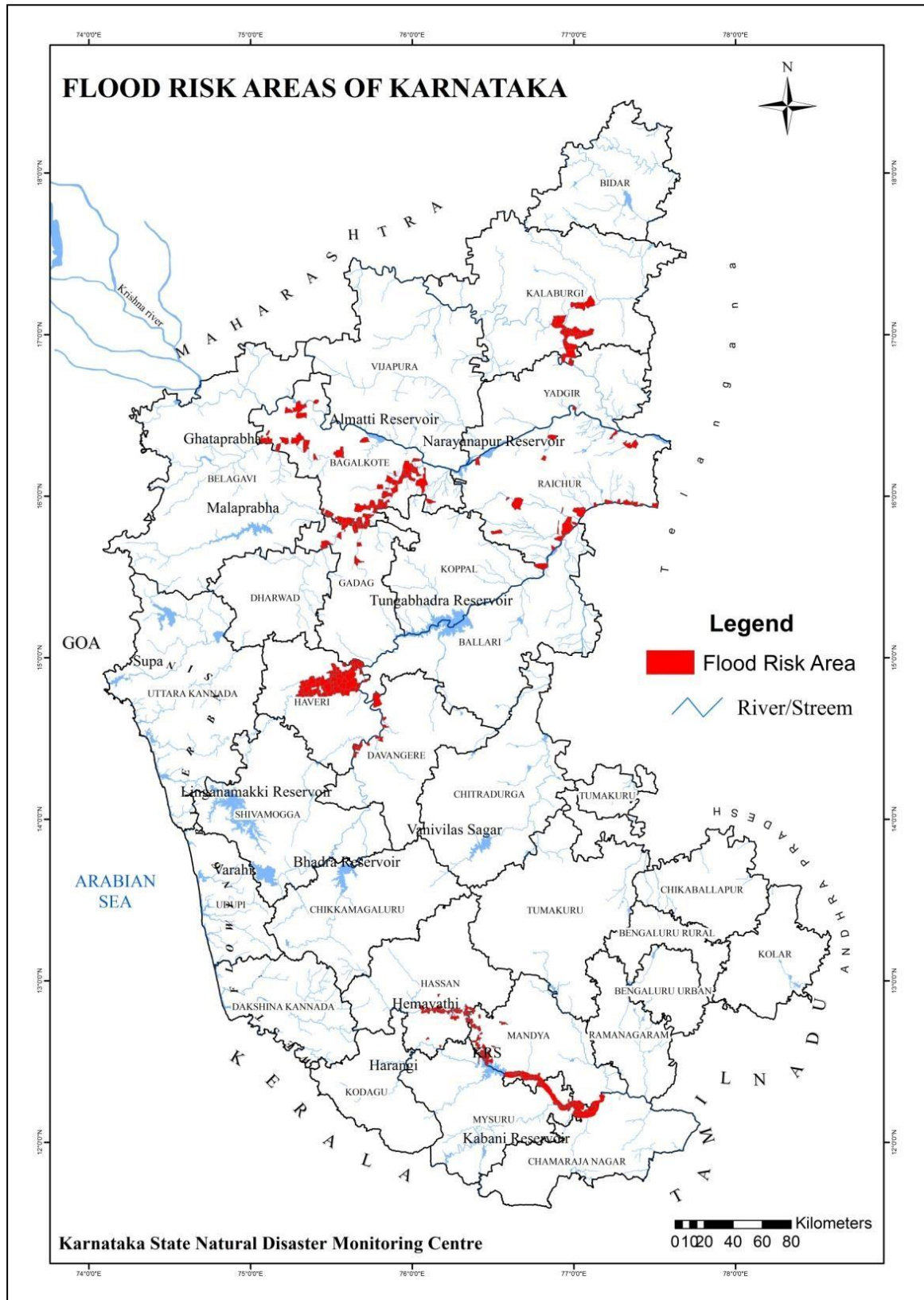
10.2.2 In the context of human **knowledge** vulnerability to disasters, the economically and socially weaker segments of the population are the ones that are most seriously affected. Within the vulnerable groups, elderly persons, women, children— especially women rendered destitute, children orphaned on account of disasters and differently abled persons are exposed to higher risks.



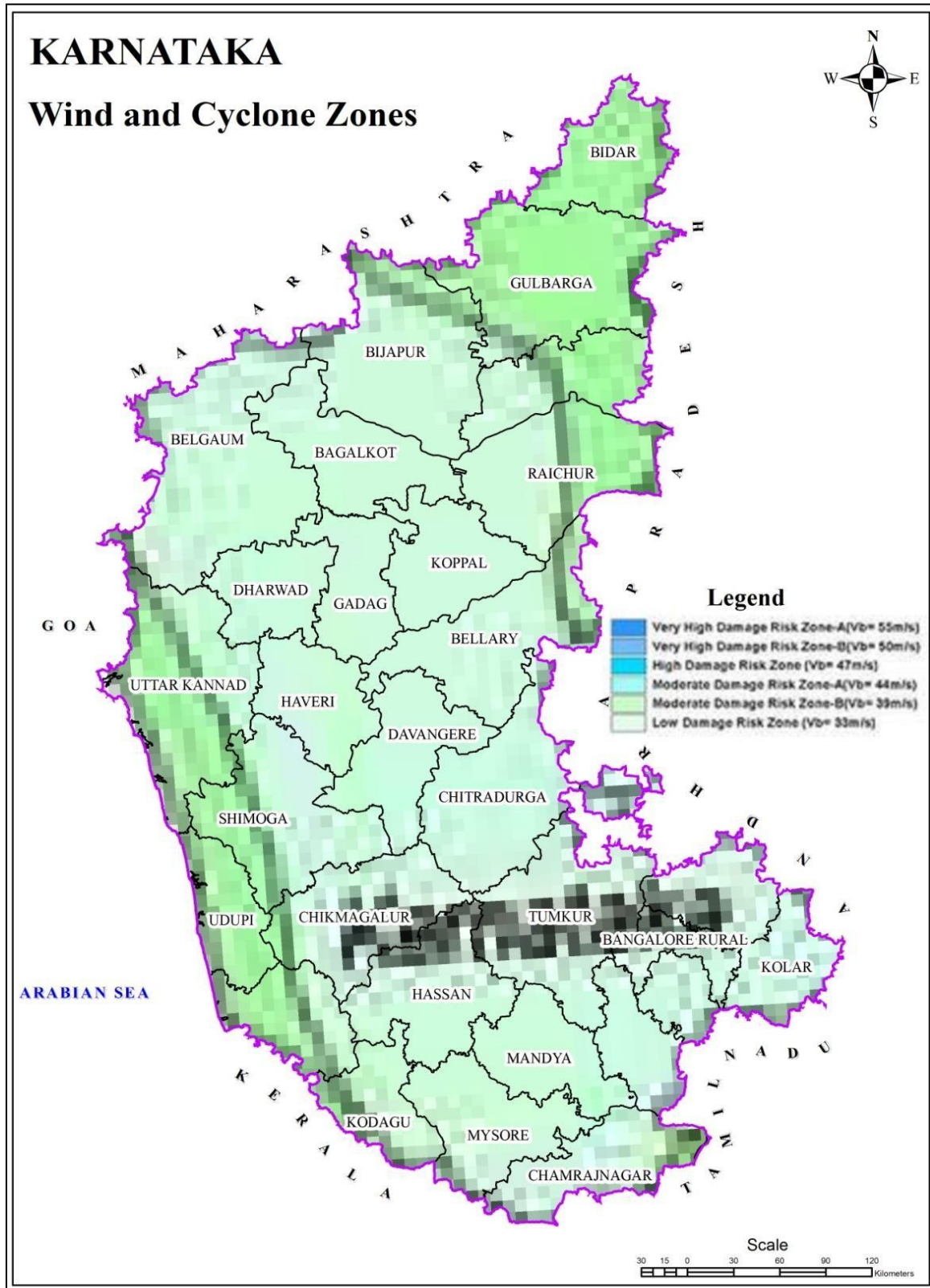
# Map 1: Drought Zones in Karnataka



# Map 2: Flood risk areas in Karnataka

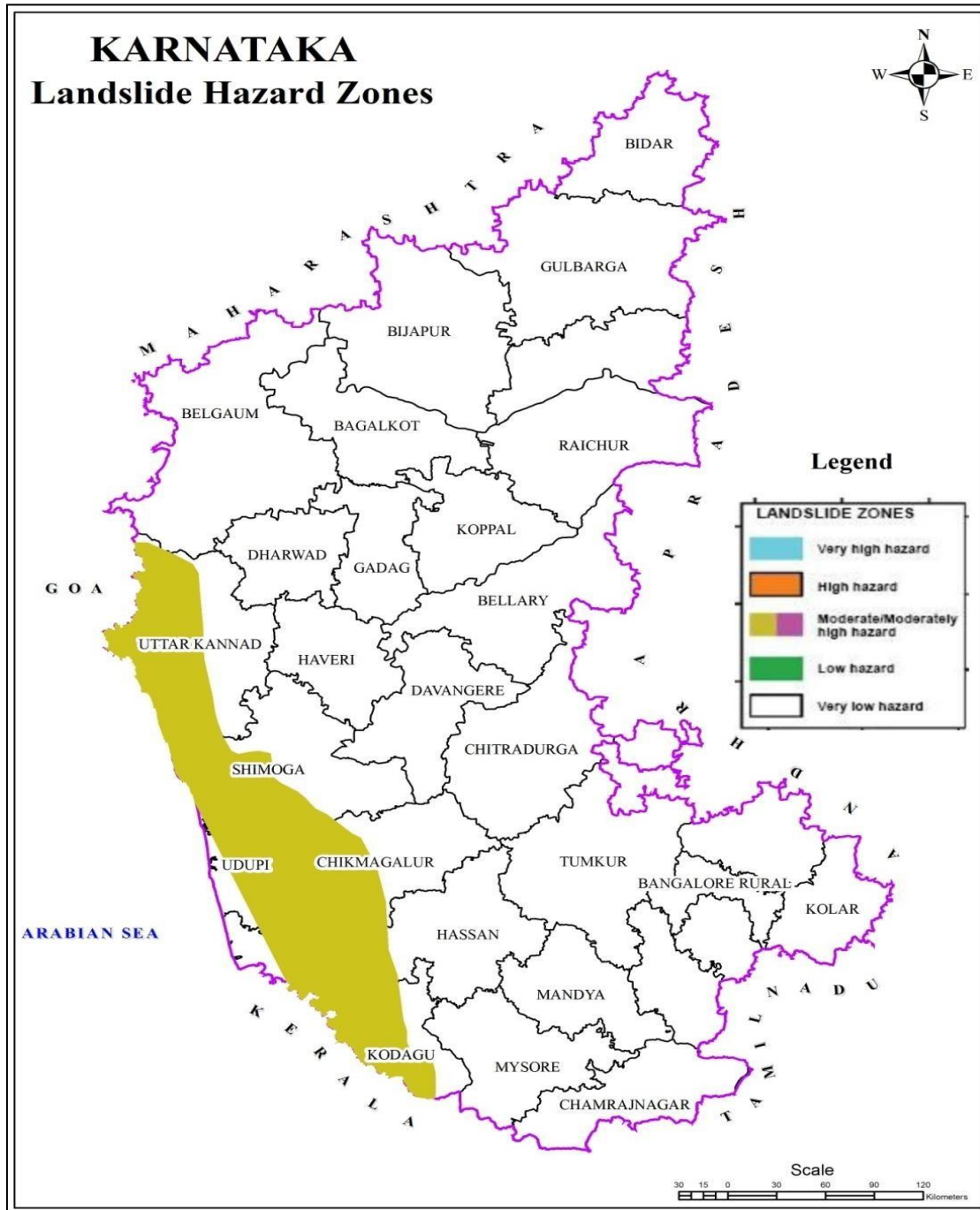


# Map 3: Wind and Cyclone zones in Karnataka

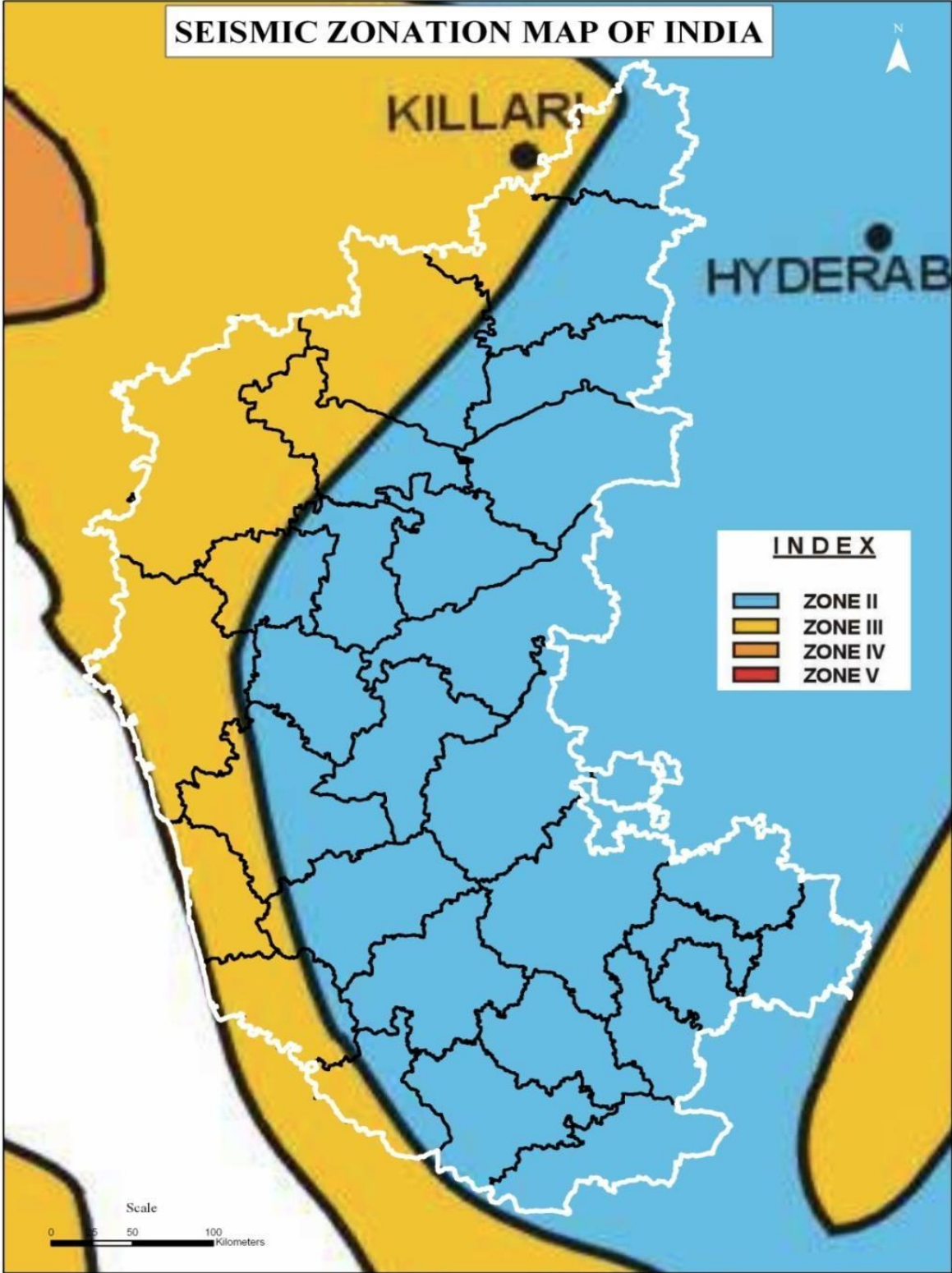




# Map 4: Landslide Hazard Zones in Karnataka



# Map 4: Earthquake Zones in Karnataka



# 2. Approach and Objectives:

## Vision

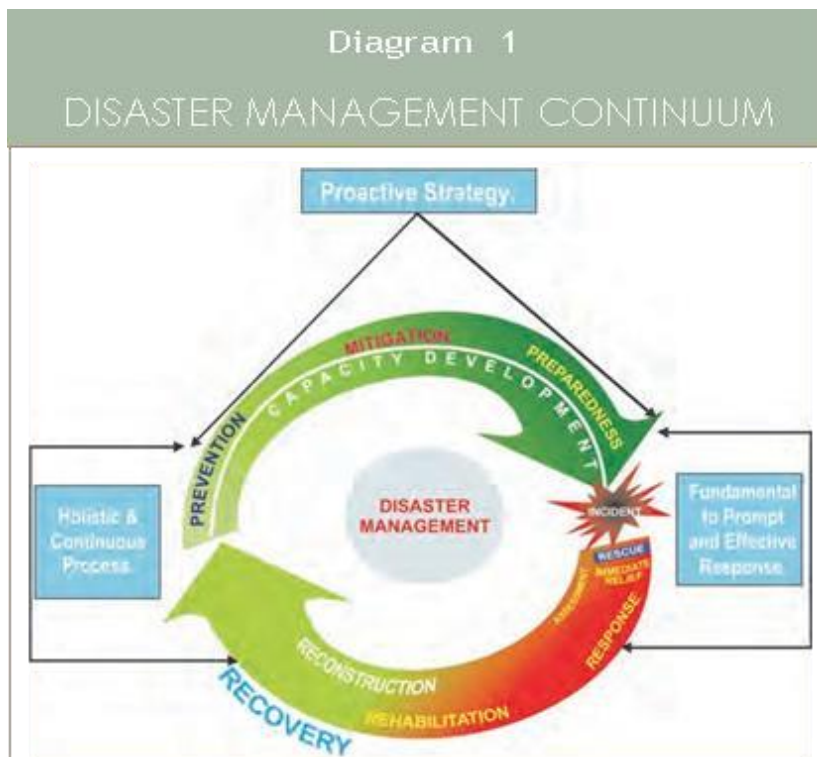
2.1.1 To build a safe disaster resilient Karnataka by developing a holistic, proactive, multi-disaster integrated with technological strategy involving set of policies, tools procedures for prevention, mitigation, preparedness, timely response and recovery.

## Disaster Management (DM)

2.2.1. A disaster<sup>1</sup> refers to a catastrophe, mishap, calamity or grave occurrence from natural or man-made causes, which is beyond the coping capacity of the affected community. DM involves a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for:

- Prevention of danger or threat of any disaster.
- Mitigation or reduction of risk of any disaster or its severity or consequences.
- Capacity building including research and knowledge management.
- Preparedness to deal with any disaster.
- Prompt response to any threatening disaster situation or disaster.
- Assessing the severity or magnitude of effects of any disaster.
- Evacuation, rescue and relief.
- Rehabilitation and reconstruction.

2.2.2 A typical DM continuum comprises six elements; the pre-disaster phase includes prevention, mitigation and preparedness, while the post-disaster phase includes response, rehabilitation, reconstruction and recovery. A legal and institutional framework binds all these elements together (Diagram I).



## Approach

2.3.1 A holistic and integrated approach will be evolved towards disaster management with emphasis on Disaster Risk Reduction, by building strategic partnerships at various levels, with multiple stakeholders and appropriate technologies. The themes underpinning the policy are:

- Community based Disaster Management, including last mile integration of the policy, plans and execution.
- Capacity development in all phases of Disaster Management cycle (Evacuation, Relief, Response, Recovery, Rehabilitation, Re-construction and Recovery).
- Consolidation of past initiatives and best practices for realistic implementation for the benefit of at-risk population.
- Cooperation with agencies at National and International levels.
- Multi-sectoral synergy.

## Objectives

2.4.1 The objectives of the State Policy on Disaster Management are:

- Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.
- Encouraging mitigation measures based on technology, traditional wisdom and environmental sustainability.
- Mainstreaming disaster management into the developmental planning process.
- Establishing institutional and techno- legal frameworks to create an enabling regulatory environment and a compliance regime.
- Ensuring efficient mechanism for identification, assessment and monitoring of disaster risks.
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communication with information technology support.
- Ensuring efficient response and relief based on Humanitarian approach towards the needs of the vulnerable sections of the society.
- Undertaking reconstruction as an opportunity to build back better of disaster resilient structures and habitat for ensuring safer living.
- Promoting a productive and proactive partnership with the media for disaster management.
- Promoting the importance of preparedness through the tools such as Risk Informed Programming and Emergency Preparedness for Response.
- Strengthening the response mechanisms to reduce the post disaster impact on affected population.



# 3. Institutional and Legal Arrangements

## Disaster Management Act, 2005

3.1.1 The Act lays down institutional, legal, financial and coordination mechanisms at the National, State, District and Local levels. These institutions are not parallel structures and will work in close harmony. The new institutional framework is expected to usher in a paradigm shift in DM from relief-centric approach to a proactive regime that lays greater emphasis on preparedness, prevention and mitigation.

## Institutional Framework under the Act

### State Disaster Management Authority

3.2.1 Karnataka State Disaster Management Authority (KSDMA) shall function as the apex decision making body. Headed by the Chief Minister it shall facilitate, co-ordinate, review and monitor all disaster related activities in the state including capacity building. The Authority shall lay down the State Disaster Management policy and guidelines to be followed by the government departments and approve the State Disaster Management Plan and Departmental plans in accordance with the guidelines laid down by the National Disaster Management Authority (NDMA). The KSDMA statutory powers to facilitate, coordinate and monitor the activities related to disaster management utilizing the resources and expertise of relevant government departments, district administration, local authorities, non-governmental organizations, the public sector, international development agencies, donors and the community. It shall also exercise the powers and functions as laid down in the National Disaster Management Act, 2005, section 14, 15, 16, 17 and 18.

### State Executive Committee

3.2.2 The State Executive Committee (SEC) shall assist the KSDMA in the performance of its functions. The SEC will be headed by the Chief Secretary to the State Government and coordinate and monitor the implementation of the National Policy, the National Plan and the State Plan. The SEC will also provide information to the NDMA relating to different aspects of DM (National Disaster Management Act 2005, section 20, 21 and 22).

### State Crisis Management Committee

3.2.3 The State Crisis Management Committee (SCMC) comprising high level officials of the Government of Karnataka (GoK) headed by the Chief Secretary shall deal with major crisis which have serious or national ramifications. It shall be assisted by SEC as may be necessary. The Secretary, KSDMA shall be a member of this Committee. SCMC will be activated in the event of a crisis. The Chief Secretary shall be the Incident Commander at the state level and shall formulate the response teams/Crisis Management Groups as per the type and severity of the crisis (National Disaster Management Act 2005, section 21).

### State Emergency Operation Centers

3.2.4 State Emergency Operation Centre (SEOC)/Control Room shall be the nerve centers for coordination and management of disasters. They shall be the physical location from where coordination of response, relief and restoration will take place. They shall function 24x7 and shall be equipped with contemporary technologies, communication infrastructure facilities and adequate human and material resources. This will work in close coordination with the Karnataka State Natural Disaster Monitoring Center, Indian Meteorological Department, Ministry of Home Affairs,

National Disaster Management and other concerned departments.

### District Emergency Operation Center

3.2.5 District Emergency Operation Centre (DEOC)/Control Room shall be the nerve centers for coordination and management of disasters at district level. They shall be the physical location from where coordination of response, relief and restoration will take place. They shall function 24x7 and shall be equipped with contemporary technologies, communication infrastructure facilities and adequate human and material resources. They shall work in close- coordination with the Emergency Operation Centers and Karnataka State Natural Disaster Monitoring Centers.

### District Disaster Management Authority

3.2.6 The District Disaster Management Authority (DDMA), headed by the Deputy Commissioner, with the elected representative of the local authority as the Co-Chairperson shall act as the planning, coordinating and implementing body for DM at District level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and KSDMA. It shall, inter alia prepare the District DM plan for the district and monitor the implementation of the State Policy, the State Plan and the District Plan. DDMA shall also ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all Departments of the State Government at the District level and the local authorities in the district (National Disaster Management Act 2005, section 25, 26, 27, 28. 29 and 30).

### Local Authorities

3.2.7 For the purpose of this policy, local authorities would include Panchayati Raj Institutions (PRI), Municipalities, District and Cantonment Boards and Town Planning Authorities which control and manage civic services. These bodies shall ensure capacity building of their officers and employees for managing disasters, carrying out relief, rehabilitation and reconstruction activities in the affected areas and shall prepare DM Plans in consonance with guidelines of the NDMA, SDMAs and DDMA. Specific institutional framework for dealing with disaster management issues in mega cities will be put in place (National Disaster Management Act 2005, section 32).

### State Institute of Disaster Management (Center for Disaster Management – Administrative Training Institute)

3.2.8 The State Institute of Disaster Management (SIDM) i.e Center for Disaster Management – Administrative Training Institute (CDM – ATI) was started in 2001 with for capacity development. CDM – ATI shall be involved in training, research, documentation and development of a state level information base. It shall network with other knowledge-based institutions and function within the broad policies and guidelines laid down by the KSDMA. It shall organize training of trainers, DM officials and other stakeholders. The CDM – ATI will strive to emerge as a ‘Centre of Excellence’ in the field of Disaster Management.

## Other important Institutions:

### State Disaster Response Force, Fire and Emergency and Police

3.3.1 The State Disaster Response Force (SDRF) shall create response capabilities from within state's existing resources, to begin with shall equip and train one battalion equivalent force for state level disaster response. DM training shall be included in State's Police Training Colleges and basic and in-service courses, for gazetted and non-gazetted officers.

The State Police Forces and the Fire Services are crucial immediate responders to disasters. The police force shall be trained and the Fire Services upgraded to acquire multi-hazard rescue capability.

Home guards and civil defense are being community based organizations shall be used their services in all phases of the disaster management.

### Armed Forces & Central Para Military Forces

3.3.2 The armed forces form an important part of the Government's response capacity and are immediate responders in all serious disaster situations and assist the civil administration when the situation is beyond their coping capability. At the State and District levels, the local representatives of the armed forces shall be included in their executive committees to ensure closer coordination and cohesion. The local representatives of the Central Para Military Forces (CPMFs) shall be co-opted/invited in the State executive committee.

### Karnataka State Natural Disaster Monitoring Centre (KSNDMC)

3.3.3 The Karnataka State Natural Disaster Monitoring Centre co-ordinates the work on scientific and technological research Institutions to ameliorate the natural hazards in Karnataka. The facilities at KSNDMC will provide necessary forecast, early warning and analysis for the State to take necessary and appropriate decisions. The KSNDMC will partner with other national and state institutions in relation to scientific data for risk reduction and climate change adaptation measures.

### Role of National Cadet Corps, National Service Scheme, Bharat

#### Scouts/Guides, and Nehru Yuva Kendra Sangathan

3.3.4 Among the community, the youth are best placed in the community to be involved in disaster management initiatives. Youth based organizations such as Nehru Yuva Kendra Sangathan (NYKS), the National Cadet Corps (NCC), the National Service Scheme (NSS), Bharath Scouts/Guides and other local youth clubs will be involved in community based disaster initiatives. GoK will support initiatives to build capacities of the youth to manage disasters in the communities (National Disaster Management Policy 2009, section 3).

The Indian Red Cross and Youth Red Cross services will be utilized in the disaster risk reduction activities.

# 4. Financial Arrangements:

## Approach

4.1.1 In order to bring about a paradigm shift from the relief-centric approach to one covering prevention, preparedness and mitigation, efforts would be made to mainstream prevention and mitigation measures into the developmental plans and programmes by enlisting cooperation from all stakeholders.

## DM to be in-built in Developmental Plans

4.2.1 KSDMA will ensure mainstreaming of disaster risk reduction in the developmental agenda of all existing and new developmental programmes and projects which shall incorporate disaster resilient specifications in design and construction.

## National Disaster Response and Mitigation Funds

4.3.1 A National Disaster Response Fund has been constituted as mandated in the Act towards meeting expenses for emergency response, relief and rehabilitation, in accordance with the guidelines laid.

## State and District Level Arrangements

4.4.2 The State shall constitute the Disaster Mitigation and Response Funds at the State as well as District levels. The modalities for the application of these funds will be worked out in accordance with the provisions of the Act.

4.4.3 Every department of the State Government shall **prepare a** disaster management plan in conformity with the guidelines laid down by the NDMA. The Sub-committee of the State Executive Committee shall monitor and review the plan time to time.

4.4.4 The guidelines on various disasters will form the basis for the formulation of plans for mitigation projects at the National, State and District level. State government, ministries and departments will identify Mitigation Projects for implementation. The state level mitigation projects will be duly prioritized and approved in consultation with the KSDMA.



# 5 Disaster Prevention, Mitigation and Preparedness

## Disaster Prevention and Mitigation

5.1.1 Unlike man-made disasters, natural hazards like floods, earthquakes, and cyclones cannot be avoided. However, with mitigation measures along with proper planning of developmental work in the risk prone area, these hazards can be prevented from turning into disasters. A multi-pronged approach needs to be adopted to undertake mitigation measures:

- Building mitigation measures into all development projects.
- Initiating of National level mitigation projects by the KSDMA, in high priority areas, with the help of the State Ministries and Departments concerned.
- Encouraging and assisting district level mitigation projects in accordance with the guidelines.
- Indigenous knowledge on disaster and coping mechanisms adopted by various States will be given due weightage with special focus on protection of heritage structures.

## Risk Assessment and Vulnerability Mapping

5.1.2 Hazard zonation, mapping and vulnerability analysis in a multi-hazard framework will be carried out utilizing Geographic Information System (GIS). The Karnataka State Natural Disaster Monitoring Center (KNDMC) in collaboration with Indian Space Research Organization (ISRO), Geological Survey of India (GSI), and Karnataka State Remote Sensing Application Center (KSRSAC) shall create a data base. This will be the first step towards addressing disaster vulnerabilities, other state agencies, knowledge-based institutions and district DM authorities need to carry out risk and vulnerability assessment of all disaster prone areas. The global tools and best practices will be adopted for the said purpose.

## Increasing Trend of Disasters in Urban Areas

5.1.3 Disasters in urban areas are distinct in many ways and the intensity of damage is usually very high, warranting effective DM plans. Of late, there has been an alarming increase in such types of disasters. Search and rescue efforts in the urban areas also require specialized training. Action plans for checking **both vertical and horizontal contributors which are changing risk of the landscape, unplanned urbanization, ensuring safer human habitat against all forms of disasters especially intentional disaster as unrest, cyber-attacks, and terrorist attacks** will be recognized as priority areas. State Government shall accord priority for improving urban drainage systems with special focus on non-obstruction of natural drainage systems. Urban mapping of infrastructure of spatial resolution will be taken up for development of Decision Support System (DSS) for management of urban risks.

## Critical Infrastructure

5.1.4 It is of utmost importance that critical infrastructure like dams, roads, bridges, flyovers, railway lines, power stations, water storage towers, irrigation canals, delta water distribution networks, river and coastal embankments, ports and other civic utilities are constantly monitored for safety standards in consonance with worldwide safety benchmarks and strengthened where deficient. **Special attention will be given to socio-technological systems like non-disruption/alternate provisions, for disruption of information and communication systems.** The building standards for critical infrastructure need to be aligned to the safety norms and Departments/Authorities concerned would ensure the requisite actions and measures to ensure this.

## Climate Change Adaptation

- 5.1.5 Karnataka is highly susceptible to hydro-meteorological hazards. According to various studies on climate change impacts, frequency and intensity of these disasters are likely to rise in future. Therefore, KSDMA will make efforts to enhance the resilience of vulnerable communities living in coastal area and river plains in the state to cope with disasters and extreme climate events. It will promote integrated water management, construction hazard-resistant buildings & shelters, promotion of alternative livelihoods

## Preparedness

### Role of State Ministries and Departments, Districts

- 5.2.1 Districts have to accord the highest priority to building up their own DM capabilities. Plans at all levels will be made in consonance with the guidelines and provisions in the DM Act, 2005. While the State Plan will be prepared by the SEC, the disaster and domain-specific plans will be made by the respective State Ministries and Departments. District plans will be prepared for their specific disaster-related vulnerabilities in accordance with the guidelines issued by the NDMA and KSDMA. New institutional mechanisms may have to be built specifically in those sectors of DM where none of the existing agencies are working towards the building of required capacities.
- 5.2.2 The plans prepared by State Ministries and Departments, and Districts will incorporate the inputs of all stakeholders for integration into the planning process. The participation of all stakeholders, communities and institutions will inculcate a culture of preparedness. A bottom-up approach needs to be adopted for better understanding and operationalization of these plans.

### Forecasting and Early warning:

- 5.2.3 GoK shall establish, upgrade and modernize the forecasting and early-warning systems for all types of disasters. Karnataka State Natural Disaster Monitoring center shall be responsible for monitoring and carrying out surveillance, for specific natural disasters, in association with nodal agencies. KSNDMC will identify technological gaps and formulate projects for their upgradation, in a time-bound manner. GoK shall provide Karnataka State Natural Disaster Monitoring Center, the required infrastructure for upgradation/ establishment of meteorological observation systems.
- 5.2.4 KSNDMC shall establish Master Control Facilities for providing Alerts/Early Warnings/Forecast/Advisories to the farmers, fishermen, Governance and others in the State along with information dissemination for real time data towards providing Near Real Time Alerts/Early Warning/Advisories to the Community. KSNDMC shall be a "Nodal Agency" identified by the Government for taking up monitoring activities pertaining to all Natural Disasters in the State.
- 5.2.5 KSNDMC shall provide inputs to line departments like Dept. of Revenue, Agriculture, Horticulture, Water Resources, Watershed Development Department, Fisheries, Rural Development and Panchayati Raj and Department of Energy, GoK.
- 5.2.6 KSNDMC shall provide inputs to the Farming Community, Agriculture and Horticulture based sector, Fisherman, Transport sector, Power and Electricity sector, State and District level Disaster Management Authorities in Karnataka. Besides, the information shall be shared with the knowledge centers like State Universities, Research Centers and National Institutes like ISRO, Indian Meteorological Department (IMD), and Center for Mathematical Modelling and Computer Simulation (CMMACS) etc.

- 5.2.7 KSNMDC shall use the state-of-the-art technology, software, web-enabled application in the Master Control Facility for monitoring the Natural Disasters and is unique in the Country. The Centre shall provide meso-scale weather forecast at Hobli level, early warning, alerts and scientific reports for management of Natural Disasters in Karnataka.
- 5.2.8 KSNMDC shall prepare and disseminate Reports on Daily/Weekly/ Monthly/Seasonal and Annual at Hobli level and also shall provide Rainfall and Weather information at Gramapanchayati level. The customized information shall be disseminated through SMS, email, Web Portal, Social Network & Social Media. The reports and information in the form of Advisories shall be provided to the Community in general and to the Farmers in particular through the 24x7 Help Desk named Varuna Mitra. KSNMDC shall develop an app SIDILU for rain and lightning forecast with precautionary contents.

### **Strengthening the Emergency Operation Centers (EOCs):**

- 5.2.9 A network of EOCs at State and District levels with robust communication network will be critical for timely collection of hazard-related information and rapid dissemination of relevant information and warnings. Effectiveness of post-disaster response & relief management in the state will depend upon the status of EOCs and communication network. Therefore, KSDMA will ensure strengthening of communication network and EOCs at State and district levels to ensure fail proof communication.

### **Medical Preparedness and Mass Casualty Management:**

- 5.2.10 Health and Medical care is one of the most critical and immediate response components in any disaster response situation. DM plans for hospitals will include developing and training of medical teams and paramedics and development of critical infrastructure. The surge and casualty handling capacity of all hospitals at the time of disasters will be worked out and recorded through a consultative process, in the pre-disaster phase by the state and district authorities. The State and District authorities will be encouraged to formulate appropriate procedures for treatment of casualties by the private hospitals during the disasters. These plans will also address post-disaster disease surveillance systems, networking with hospitals, referral institutions and accessing services and facilities such as availability of ambulances and blood banks.

### **Training Simulation and Mock Drills**

- 5.2.11 Efficacy of plans and Standard Operating Procedures (SOPs) are tested and refined through training, seminars and mock drills. The KSDMA will assist the districts in these areas and will also conduct mock drills in different parts of the state. District authorities will be encouraged to generate a culture of preparedness and quick response. Gradually State Government shall engage to plan a series of exercises for various types of disasters in collaboration with NDMA to enhance the response level of various stakeholders

## **Partnership for Mitigation and Preparedness**

### **Community Based Disaster Preparedness**

- 5.3.1 During any disaster, communities are not only the first to be affected but also the first responders. Community participation ensures local ownership, addresses local needs, and promotes volunteerism and mutual help to prevent and minimize damage. Therefore, the efforts of the Districts, in this regard need to be encouraged.
- 5.3.2 The needs of the elderly, women, children and differently abled persons require special attention. Women and youth will be encouraged to participate in decision making committees and action

groups for management of disasters. As first responders to any disaster, communities will be trained in the various aspects of response such as first aid, search and rescue, management of community shelters, psycho-social counselling, distribution of relief and accessing support from government/agencies etc. Community plans will be dovetailed into the Panchayat, Block and District plans.

## Stakeholder's Participation

5.3.3 The participation of civil society stakeholders will be coordinated by the KSDMA and DDMA. Civil Defense, NCC, NYKS, NSS, Bharat Scouts/Guides, Indian Red Cross Society and local Non-Governmental Organizations (NGOs) will be encouraged to empower the community and generate awareness through their respective institutional mechanisms. Efforts to promote voluntary involvement will be actively encouraged.

## Corporate Social Responsibility (CSR) and Public-Private Partnership (PPP)

5.3.4 Historically, the corporate sector has been supporting disaster relief and rehabilitation activities. However, the involvement of corporate entities in disaster risk reduction activities is not significant. Corporate entities should redefine their business continuity plan to factor in hazards, risks and vulnerabilities. They should also create value in innovative social investments in the community. PPP between the Government and private sector would also be encouraged to leverage the strengths of the latter in disaster management. The KSDMA need to network with the corporate entities to strengthen and formalize their role in the DM process for ensuring safety of the communities.

## Media Partnership

5.3.5 The media plays a critical role in information and knowledge dissemination in all phases of DM. The versatile potential of both electronic and print media needs to be fully utilized. Effective partnership with the media will be worked out in the field of community awareness, early warning and dissemination, and education regarding various disasters.



# 6 Response

## Approach

6.1.1 Prompt and effective response minimizes loss of life and property. A caring approach for the special needs of vulnerable sections is also important. The existing and the new institutional arrangements need to ensure an integrated, synergized and proactive approach in dealing with any disaster. This is possible through contemporary forecasting and early warning systems, fail-safe communication and anticipatory deployment of specialized response forces. A well-informed and prepared community can mitigate the impact of disasters.

## Role of the State Executive Committee (SEC)

6.2.1 The SEC will coordinate response in the event of any threatening disaster situation or disaster. While disaster specific guidelines will be formulated by KSDMA, SEC may give directions to the concerned Ministries/Departments of the GoK, Government and State Authorities regarding measures to be taken by them in response to any specific threatening disaster situation or disaster.

## Role of the Nodal and Other State Departments

6.3.1 For various types of disasters, the nodal Ministry concerned will chart out detailed Response Plans which will be integrated into the State Response Plan. The SEC may coordinate response in the event of any threatening disaster situation or disaster.

## Role of State, District and Local Authorities

6.4.1 It is the primary responsibility of the KSDMA to monitor and assess any developing situation and keep the NDMA and SEC apprised of the same. They will also be responsible to constantly evaluate their own capabilities to handle that situation and project the anticipated requirements for the Central resources well in time. Inter-state assistance and cooperation will be encouraged. The States will also be responsible to develop their own response potential progressively and complete the process at the earliest. This will comprise training and equipping of State response forces, community preparedness, training and creation of response caches at the District level. District level preparations will provide the cutting edge to all response activities. Local authorities, PRIs and ULBs will play a significant role in the entire process, particularly in response and rescue operations, relief and rehabilitation, awareness generation and disaster preparedness, restoration of livelihood options and coordination with NGOs and civil society.

## Standard Operating Procedures (SOPs)

6.5.1 All State Ministries, District Authorities and other stakeholders will prepare SOPs in consonance with the National and State Plans. SOPs will be prescribed for activities like search and rescue, medical assistance and mass casualty management, evacuation, restoration of essential services and communication at disaster sites, etc. The other important activities are provision of food, drinking water, sanitation, clothing and management of relief camps. Detailed SOPs will also be devised by all concerned for **dispatch**, receipt and deployment of Central resources.

## Levels of Disasters

6.6.1 The SOPs for determining the levels of disasters and for issuing alerts to electronic messaging systems of various agencies about disasters have been formulated by Ministry of Home Affairs

(MHA). These SOPs will be reviewed periodically for disaster response management in case of natural and man-made disasters.

## Incident **Response** System (IRS)

6.7.1 A traditional command structure exists in the administrative hierarchy which manages disasters in Karnataka. It has been planned to strengthen and professionalize the same by drawing upon the principles of the ICS with suitable modifications. The IRS is essentially a management system to organize various emergency functions in a standardized manner while responding to any disaster. It will provide for specialist incident management teams with an incident commander and officers trained in different aspects of incident management, such as logistics, operations, planning, safety, media management, etc. It also aims to put in place such teams in each District by imparting training in different facets of incident management to District level functionaries. The emphasis will be on the use of technologies and contemporary systems of planning and execution with connectivity to the joint operations room at all levels.

## First and other Key Responders

6.8.1 The role and importance of the community, under the leadership of the local authorities, PRIs and ULBs, being the bedrock of the process of disaster response, is well recognized. For their immediate support, there are other important first responders like the Police, SDRF, Fire and Medical Services. The NDRF will provide specialist response training whenever required. In serious situations, the resources of all NDRF battalions, on as required basis, will be concentrated in the shortest possible time in the disaster affected areas. Other important responders will be the Civil Defense, Home Guards and youth organizations such as NCC, NSS, Bharat Scouts/Guides and NYKS. The deployment of the Armed Forces will also be organized on as required basis.

## Medical Response

6.9.1 Medical response has to be quick and effective. The execution of medical response plans and deployment of medical resources warrant special attention at the State and District level in most of the situations. The voluntary deployment of the nearest medical resources to the disaster site, irrespective of the administrative boundaries, will be emphasized. Mobile medical hospitals and other resources available with the center will also be provided to the district in a proactive manner. Post-disaster management of health, sanitation and hygiene services is crucial to prevent an outbreak of epidemics. Therefore, constant monitoring of any such possibility will be necessary.

## Minimizing damage to property

6.10.1 Minimizing damage & economic losses will be one of the key priorities of KSDMA and DDMA. All line departments and agencies of the State Government shall make concerted efforts to minimize damage to assets and infrastructure.

## Animal Care

6.11.1 Animals both domestic and wild are exposed to the effects of natural and man-made disasters. It is necessary to devise appropriate measures to protect animals and find means to shelter and feed them during disasters and their aftermath, through a community effort, to the extent possible. It is pertinent to note that many communities have shown compassion to animals during disasters, and these efforts need to be formalized in the preparedness plans. The Departments/Ministries of the GoK, such as the Department of Animal Husbandry, Dairying & Fisheries, Social Justice and Empowerment and the States concerned should devise such measures at all levels.

## Information and Media Partnership

6.12.1 During disaster situation, the dissemination of accurate information through electronic and print media is very important. Regular press briefing by trained disaster management officials is essential. Training in information management and accurate reporting will be undertaken at all levels.

# 7 Relief and Rehabilitation

## Approach

7.1.1 Relief is no longer perceived only as gratuitous assistance or provision of emergency relief supplies on time. It is on the contrary, viewed as an overarching system of facilitation of assistance to the victims of disaster for their rehabilitation in States and ensuring social safety and security of the affected persons. The relief needs to be prompt, adequate and of approved standards. Guidelines defining minimum standards of relief will be prepared by the NDMA and guideline developed by KSDMA.

## Setting up of Temporary Relief Camps

7.2.1 DDMA, especially in recurring disaster prone areas, may identify locations for setting up temporary camps. Agencies to supply the necessary stores will be identified in the pre- disaster phase. The use of premises of educational institutions for setting up relief camps needs to be discouraged.

7.2.2 The temporary relief camps will have adequate provision of drinking water and bathing, sanitation and essential health care facilities. Wherever feasible, special task forces from amongst the disaster affected families will be set up to explore the possibility of providing food through community kitchens, and provision of education through the restoration of schools and anganwadis. Efficient governance systems like entitlement cards, laminated identification cards etc., will be developed as a part of uniform humanitarian governance practices through the respective DDMA.

## Management of Relief Supplies

7.3.1 Ensuring minimum standards of relief and speedy management of supplies are important features of relief operations. SOPs will be put in place for ensuring the procurement, packaging, transportation, storage and distribution of relief items, which needs to be carried out in an organized manner. The affected community and local authorities need to work in tandem in managing the relief camps. Guidelines will be evolved to manage the donations received in cash or kind to ensure transparency and accountability.

## Review of Standards of Relief

7.4.1 Existing standards of relief need to be reviewed to address the contemporary needs of communities affected by disasters. The DDMA may review the Relief Codes/manuals and prepare DM Codes for prescribing the norms, standards and criteria for the provision of relief in conformity with the guidelines of NDMA and KSDMA.

## Temporary Livelihood Options and Socio-Economic Rehabilitation

7.9.1 In the aftermath of any major disaster, generally a demand always arises to generate temporary livelihood options for the affected community and the State Government will recognize this aspect in DM planning process. Any such option will ensure that the assets, infrastructure and amenities created are hazard resistant, durable, sustainable, and cost-efficient.

## Provision of Intermediate Shelters



7.10.1 In the case of devastating disasters, where extreme weather conditions can be life-threatening or when the period of stay in temporary shelters is likely to be long and **uncertain, construction** of intermediate shelters with suitable sanitary facilities will be undertaken to ensure a reasonable quality of life to the affected people. The design of such shelters will be eco-friendly and in consonance with local culture. It would be desirable for KSDMA and DDMA's to plan during periods of normalcy, the layout of intermediate shelters which is cost-effective and as per local needs with multi-use potential.

# 8. Reconstruction and Recovery

## Approach

8.1.1 The approach to the reconstruction process has to be comprehensive so as to convert adversity into opportunity. Incorporating disaster resilient features to 'build back better' will be the guiding principle. This phase requires the most patient and painstaking effort by all concerned. The administration, the stakeholders and the communities need to stay focused on the needs of this phase, as, with the passage of time, the sense of urgency gets diluted. The appropriate choice of technology and project impact assessment needs to be carried out to establish that the projects contemplated do not create any side effects on the physical, socio-cultural or economic environment of the communities in the affected areas or in their neighborhood. Systems for providing psycho- social support and trauma counselling need to be developed for implementation during the reconstruction and recovery phase.

## Owner Driven Reconstruction

8.2.1 Reconstruction plans and designing of houses need to be a participatory process involving the government, affected community, NGOs and the corporate sector. After the planning process is over, while owner driven construction is a preferred option, participation of the NGOs and corporate sector will be encouraged. Reconstruction programmes will be within the confines and the qualitative specifications laid down by the Government.

## Speedy Reconstruction

8.3.1 Essential services, social infrastructure and intermediate shelters/camps will be established in the shortest possible time. For permanent reconstruction, ideally, the work including the construction of houses must be completed within two to three years. State Ministries/Departments concerned and the State Governments should create dedicated project teams to speed up the reconstruction process.

8.3.2 Contingency plans for reconstruction in highly disaster prone areas need to be drawn out during the period of normalcy, which may include architectural and structural designs in consultation with the various stakeholders.

## Linking Recovery with Safe Development

8.4.1 Emphasis will be laid on plugging the gaps in the social and economic infrastructure and infirmities in the backward and forward linkages. Efforts will be made to support and enhance the viability of livelihood systems, education, health care facilities, care of the elderly, women and children, etc. Other aspects warranting attention will be roads, housing, drinking water sources, provision for sanitary facilities, availability of credit, supply of agricultural inputs, upgradation of technologies in the on-farm and off-farm activities, storage, processing, marketing, etc.

## Livelihood Restoration

8.5.1 State governments will have to lay emphasis on the restoration of **permanent livelihood** of those affected by disasters and special attention to the needs of women- headed households, artisans, farmers and people belonging to marginalized and vulnerable sections.

# 9. Capacity Development, Knowledge Management, Research and Development

## Approach

- 9.1.1 A strategic approach to capacity development can be addressed effectively with the process comprising **Awareness Generation**, Education, Training, Research and Development (R&D) and Communication, etc. It further addresses putting in place appropriate institutional framework, management systems and allocation of resources for efficient prevention and handling of disasters.
- 9.1.2 There is a need to create a network of knowledge institutions in the field of DM, to share their experiences and knowledge. While knowledge creation will be primarily carried out in specialized domains by nodal institutions, the Center for Disaster Management – Administrative Training Institute and other similar institutions will play an important role in knowledge synthesis, data management and dissemination amongst its clientele groups, especially other training institutions.
- 9.1.3 A primary concern of future effort in research will be the identification of broad research needs in respect of different hazards in various parts of Karnataka and intensifying demand driven research programmes. Regional and International collaboration needs to be encouraged.

## Capacity Development

- 9.2.1 The approach to capacity development will include:
- According priority to training for developing community based DM systems for their specific needs in view of the regional diversities and multi-hazard vulnerabilities.
  - Conceptualization of community based DM systems at the State level through a consultative process involving the Districts and other stakeholders with the State and Local level authorities in charge of implementation.
  - Identification of knowledge- based institutions with proven performance.
  - Promotion of International and Regional cooperation.
  - Adoption of traditional and global best practices and technologies.
  - Laying emphasis on table-top exercises, simulations, mock drills and development of skills to test the plans.
  - Capacity analysis of different disaster response groups at District/Local levels.

## Institutional Capacity Development

- 9.3.1 The CDC-ATI will play an important role in developing and facilitating the implementation of the State training schedule for DM. These will be strengthened with financial assistance and such

efforts will be replicated by Government of Karnataka. The capacity of existing institute needs to be upgraded in accordance with Regional and Local requirements.

- 9.3.2 The KSDMA will also identify various capacity development institutes of the State and Private and engage with them to deliver appropriate capacity building initiatives for Disaster Management.
- 9.3.3 The KSDMA will collaborate with National Institutes, such as National Institute of Disaster Management and other States Institutes of Excellence for the purpose of building capacities in Disaster Management, appropriate to the Hazard Risk and Vulnerability of the State.

## Training of Communities

- 9.4.1 Building the capacity of communities is key to resilience and evacuation. The communities are both -affected and first responders to a hazard event. Building capacity of the first responders to disasters, is a significant part of the capacity development process. It will include awareness, sensitization, orientation and developing skills of communities and community leaders. Assistance from SDRF, Civil Defense and NGOs/other voluntary organizations such as the Red Cross and Self-Help Groups will be encouraged. The overall responsibility to give impetus to leadership and motivation will rest with local authorities, PRIs and ULBs under the overall guidance of State and District authorities.

## Professional Technical Education

- 9.5.1 The curricula of graduate and postgraduate level courses in architecture, engineering, earth sciences and medicine will be reviewed by the competent authorities to include contemporary knowledge related to DM in their respective specialized fields. The role of the NCC and Scouts/Guides may also be included in schools and colleges for disaster management related work.

## DM Education in Schools

- 9.6.1 The introduction of the subject of DM, by the Ministry of Human Resource Development, in the curriculum through the Central Board of Secondary Education, will be extended to all schools through their Secondary Education Boards. State Governments will also ensure the inclusion of disaster management curriculum through State School Boards. The education content will inculcate skill based training, psychological resilience and qualities of leadership. The role of the NCC and Boy Scouts may also be included in schools and colleges for disaster **management related** work. Disaster education will aim at developing a culture of preparedness and safety, besides implementing school DM plans.

## Training of Other Groups

- 9.7.1 Other professional groups such as paramedics, social workers, plumbers, sanitary fitters and safety auditors also play a very important role in community based DM. These groups will also be provided training through suitable programmes.

## Licensing and Certification

9.8.1 Testing the skills of professionals becomes important to ensure disaster resilient construction in the built environment. The State Government will develop a scheme to ensure that only adequately qualified professionals practice within its territory. The State Government will also enforce their own registration benchmarks to uphold desirable standards commensurate with their risk profile.

### Knowledge Management and Research and Development:

9.9.1 Disaster risk knowledge is key to risk reduction and **management**. The experience from past events could provide valuable insights in managing disaster risks. It is therefore necessary to put in a mechanism to capture learning from the past events in a systematic manner and utilize the same for various risk mitigation and response measures. The KSDMA will:

- Establish Knowledge Management Centre at the state level which will facilitate systematic collection, analysis, synthesis of disaster data and also serve as the platform for sharing of knowledge and experiences among all. It will also be a repository of knowledge products developed by various stakeholders.
- Promote research studies in to risk assessment, early warning systems, disaster financing, recovery, preparedness and response.
- Document and disseminate good practices;
- Establish platforms to connect universities and HR development institutions and formulate short term programmes and trainings with virtual as well as physical classes
- Organize knowledge events from time to time to promote cross learning among various stakeholders.

### Knowledge Institutes:

9.10.1 The CDC – ATI, KSNDMC and other institutions will collaborate and bring together academic and training institutions at state level, Interstate Level and International levels. These institutions will form the knowledge repository in DM, and also strive to enhance the knowledge base.

### Institutional Arrangements for Research:

9.11.1 The entire DM architecture needs to be supported by a solid foundation of frontline R&D efforts, offering sound and state-of-the-art science and technology options in a user friendly manner. A proactive strategy to enhance mutual reinforcement and synergy amongst the various groups and institutions working in the field of DM will be recognised. Pooling and sharing of perspectives, information and expertise will be promoted by encouraging such efforts. The identification of trans-disciplinary concerns through a process of ‘integration’ of the talent pool groups will be facilitated and addressed by a standing mechanism at the State level. Close interaction with State Ministries and Departments of Agriculture, Environment & Forests, Health, Industry, Science & Technology; and with academic institutions such as the National Institute of Mental Health Sciences (NIMHANS), Rajiv Gandhi University of Health Sciences (RGUHS), Vishweshwarayya Technical University (VTU), Indian Institute of Sciences (IISc) and universities, etc., will be maintained.

### Identification of Needs and Promotion of research:

9.12.1 KSDMA, KSNDMC and Center for Disaster Management – Administrative Training Institute will identify broad research needs in disaster risk reduction and cross-cutting themes including technological and man-made disasters. They will also identify research partners/agencies/groups depending on their knowledge base expertise.

## 10. Conclusion

- 10.1.1 The Karnataka State Disaster Management Authority envisages a Disaster Resilient State through the formulation and endorsement of this integrated State Disaster Management Policy. The policy integrates the paradigm shift in approach to DM from relief-centric from a relief centric approach to a regime that anticipates the importance of preparedness, prevention and mitigation
- 10.1.2 It further affirms appropriate balance and interrelationship with the 'National Policy on Disaster Management' and 'Disaster Management Act, 2005' and also ensures coordination amidst all agencies related to Disaster Management such as National Disaster Management Authority, State Authority, Committees and Departments, District Authority and Committees, Panchayat Raj Institutions, Non – Government Organizations, Community Based Organizations and Private Sector.
- 10.1.3 While accepting that disasters are inevitable, the policy lays down comprehensive measures to minimize impact of disasters on the community.



## Abbreviations

AAL	Average Annual Loss
ABB	Asian Development Bank
ATI	Administrative Training Institute
CCA	Climate Change Adaptation
CDC	Center for Disaster Management
CHIKV	Chikangunya
CMMACS	Center for Mathematical Modelling Computer Simulation
CPMF	Central Para Military Forces
CSR	Corporate Social Responsibility
DC	Deputy Commissioner
DDMA	The District Disaster Management Authority
DEOC	District Emergency Operation Center
DM	Disaster Management
DRR	Disaster Risk Reduction
DSS	Decision Support System
IISc	Indian Institute of Sciences
IMD	Indian Meteorological Department
ISRO	Indian Space Research Organisation
GAR	Global Assessment Report on Disaster Risk Reduction
GIS	Geographical Information Systems
GO	Government Order
GoK	Government of Karnataka
GSI	Geographical Survey of India
IRS	Incident Response System
KSDMA	Karnataka State Disaster Management Authority
KSNDMC	Karnataka State Natural Disaster Management Center
KRSAC	Karnataka State Remote Sensing Application Center
NCC	National Cadet Corps
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force
NDRF	National Disaster Response Fund
NGO	Non-Governmental Organisation
NIMHANS	National Institute of Mental Health Sciences
NREGA	National Rural Employment Guarantee Act
NSS	National Service Scheme
NYKS	Nehru Yuva Kendra Sangathan
PPP	Public Private Partnership
PRI	Panchayati Raj Institution
PWD	Public Works Department
RGUHS	Rajiv Gandhi University of Health Sciences
SCMC	State Crisis Management Committee
SDG	Sustainable Development Goals
SDMA	State Disaster Management Authority
SDRF	The State Disaster Response Force
SDRF	State Disaster Response Fund

SEC	State Executive Committee
SEOC	State Emergency Operation Centres
SFDRR	Sendai Framework for Disaster Risk Reduction
SIDM	The State Institute of Disaster Management
SOP	Standard Operating Procedures
SRC	State Relief Commissioner
ULB	Urban Local Body
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations Office for Disaster Risk Reduction
VTU	Vishweshwarayaa Technical University