

Chapter - II
Institutional framework
and
Capacity building

CHAPTER II

Institutional framework and Capacity building

This chapter deals with the deficiencies in the systemic establishments and functions that were to be implemented by the State. Effective implementation of measures for disaster risk reduction as laid down in the DM Act was marked by delays, infrequent meetings and inadequate emphasis on prevention and mitigation activities. This impacted the State's ability to transit from being reactive relief-centric to being proactive in its disaster risk reduction approach.

The delays in approving the State disaster management plans, non-integration of departmental disaster management plans, non-compliance by institutions like hospitals and educational institutions with respect to preparation of plans and the absence of plans by various other agencies raise concerns about the overall state of disaster preparedness in Karnataka. The State's disaster response force and emergency operation centres were found to be ill-equipped and underfunded, understaffed, thus severely hampering their effectiveness.

The expenditure towards capacity building and preparedness was inadequate. The State Government did not achieve objectives of the *Aapdamitra* scheme and had not taken up effective IEC initiatives. Deficiencies in the weather forecast mechanism affected the efficacy of the early warning system in the State. The State Government is yet to activate the Incidence Response System (IRS).

2.1 Institutional Arrangements and Disaster Management Plans in the State

Prior to implementation of the DM Act, the institutional mechanism in Karnataka for disaster risk reduction was of the nature of providing response and relief centric measures. The institutional structure for DM is hierarchical and functions at different levels viz., Centre, State, District and Local. Further, it is a multi-stakeholder setup, i.e., the structure draws involvement of various ministries, Government departments, administrative bodies and institutions.

In accordance with the DM Act, GoI established (December 2005) the National Disaster Management Authority (NDMA) headed by the Prime Minister and the National Executive Committee (NEC) under the Chairmanship of Secretary to the Government of India in charge of the Ministry or Department of the Central Government having administrative control of disaster management.

The DM Act also stipulated establishment of Disaster Management Authority and the Executive Committee in every State, as well as subordinate local authorities.

2.1.1 Karnataka State Disaster Management Authority (KSDMA)

In accordance with Section 14 of the DM Act, the Government of Karnataka established (May 2008) the Karnataka State Disaster Management Authority (KSDMA) headed by the Chief Minister of the State and consisting of nine

Ministers³ and the Chief Secretary of the State as the Chief Executive Officer. The Secretary, Revenue Department (DM) will be the Member Secretary.

KSDMA was “to make Karnataka safer and disaster resilient through proactive disaster risk governance, adopting a people-centric approach to disaster risk reduction, climate change adaption and working towards sustainable developmental goals by harnessing appropriate technology and strategy involving all stakeholders, to improve the capability to mitigate, prepare, respond, and recover from all natural and manmade disasters”.

The powers and functions of KSDMA included: (a) laying down the State Disaster Management Policy; (b) approving the State Disaster Management Plan⁴ (SDMP); (c) approving the disaster management plans (DMPs) of the departments and their review; (d) laying down guidelines to be followed by the departments for integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance therefor; (e) coordinating the implementation of the State Plan; (f) recommending provision of funds for mitigation and preparedness measures *etc.*

Audit observed that KSDMA was constituted in the State after a delay of more than two years since implementation of the DM Act, and even as of March 2023, it was not provided with any required infrastructure like office space, human resources, furniture/stationery, *etc.*, for its activities.

Further, as per Section 15 of the DM Act, KSDMA was to meet as and when necessary and at such time and place as the Chairperson of the State Authority may think fit. However, though the State was experiencing disaster each year, KSDMA met only thrice, in November 2019, September 2020 and September 2021 and no meetings were held during the years 2017-18, 2018-19, 2021-22 and 2022-23. A review of proceedings of the KSDMA meetings showed that, apart from approval to SDMP, the issues discussed were on constitution of Advisory Committee and preparation of DMPs by departments. It was observed that the issues relating to prevention and mitigation of disasters were not discussed in any of the meetings along with coordination/monitoring of implementation of disaster plans.

Also, KSDMA did not effectively carry out the responsibilities prescribed in the DM Act towards laying down guidelines for formulation of development plans and provision of technical assistance therefor and thus, the functioning of the KSDMA was not constructive.

The Government replied (August 2024) that action had been initiated to strengthen the KSDMA with adequate staff and ensure proper functioning and conduct of all statutory body meetings regularly. However, audit observed that neither infrastructure nor required human resources were provided to KSDMA even as of September 2024. The reply vindicates the Audit finding that

³Revenue, Home, Agriculture, Health & Family Welfare, Rural Development & Panchayat Raj, Public Works, Animal Husbandry, Housing and Energy.

⁴The Disaster Management Plan (DMP) is a policy document which needs to spell out the standard operating procedures to make the State disaster resilient, achieve disaster risk reduction through minimising loss of life/livelihoods/assets and maximizing the ability to cope with disasters at all levels of administration as well as among communities.

necessary staff and periodical meetings were not held, thus rendering KSDMA ineffective.

2.1.1.1 Delay in preparation of the State Disaster Management Policy

As per Section 18(1) of the DM Act, the State Authority shall have the responsibility for laying down policies and plans for DM in the State. Section 18(2)(a) of the DM Act stipulated the State Authority to lay down the State Disaster Management Policy.

The State Government published the State Disaster Management Policy only during the year 2020 *i.e.*, 11 years after GoI published (2009) the National Policy. Consequently, the DM plans prepared earlier and the DM activities handled in the State till the year 2020 were without the backing of a policy document.

The State Government did not furnish records relating to preparation of SDM Policy or explain the reasons for the delay but only replied (August 2024) that the SDM Policy was drafted in alignment with National Disaster Management Policy. It was further replied that periodic updation of the Policy is being undertaken. However, details of the updations incorporated and action taken thereon were not furnished to Audit.

2.1.2 Cabinet Sub-Committee on Disaster Management

The State Government constituted the Cabinet Sub-Committee (CSC) on Disaster Management once every five years⁵ starting from June 2013, consisting of selected Ministers with Revenue Minister being the Chairman. The CSC was to review the situation arising due to hazards like drought, floods and other natural disasters, formulate/decide policies and issue instructions for efficient management.

Audit observed from the records made available that the CSC had met only thrice⁶ during the Audit period {2017-18 (1) and 2018-19 (2)}. The details of the meetings conducted during other years were not forthcoming from the available records. As such, it could not be ascertained whether issues pertaining to multiple disasters and causes thereof were adequately addressed in the meetings.

Verification of proceedings of the meetings made available showed that the CSC had discussed issues like drought/flood situation in parts of the State, maintenance of fodder banks, payment of crop loss compensation, provision of drinking water, employment opportunities under MGNREGS to avoid migration, *etc.* Test-check of records at district level showed that relief measures like drinking water supply, provision of fodder *etc.*, have been taken besides, payment of compensation.

The Government replied (August 2024) that the CSC had met eight times during 2023-24 and all possible measures were taken to ensure effective management of all the notified disasters through respective departments and authorities. The reply clearly indicates that the nodal body like CSC did not meet adequately till

⁵ June 2013, June 2018 and June 2023.

⁶ May 2017, November and December 2018.

2023-24, the period during which the State had encountered disasters repetitively.

2.1.3 Advisory Committee

The KSDMA constituted the Advisory Committee consisting of experts in the field of disaster management, as required under Section 17 of the DM Act, only in December 2019 after a delay of 11 years since its constitution. As per the details furnished by the department, the Advisory Committee had met only twice (21-01-2020 and 22-05-2020) since its formation.

A review of the proceedings of these meetings revealed that issues discussed generally involved preparation of State policy, preparation of departmental disaster management plans, strengthening forecast system, issue of safety and traffic congestion at airports as vulnerability, supply of safe drinking water during disasters, providing training in telemedicine, *etc.*, however were without specific reference to any disaster the State was confronting.

The Government replied (August 2024) that action had been initiated to reconstitute the Advisory Committee in the State. The purpose of an advisory committee involving experts is to assist the State Government and the failure to convene regular meetings would deprive the Government of consistently availing specialised technical guidance.

2.1.4 State Executive Committee

In accordance with Section 20(1) of the DM Act, the State Government constituted (March 2008) the State Executive Committee (SEC) under the Chairmanship of the Chief Secretary to the State Government. The SEC was to assist the KSDMA in the performance of its functions following the guidelines laid down by the KSDMA and to coordinate and monitor the implementation of the National policy, the National plan and State plan for management of disasters in the State.

2.1.4.1 State Disaster Risk Reduction Road Map

Karnataka has faced various types of disasters successively impacting normal life and community property as well as public infrastructure and hence, there was a need to prepare a DRR road map containing broad areas for intervention that will be taken up by various departments along with time-bound implementable action plans.

Audit observed that the SEC mooted the proposal for preparation of DRR road map and assigned the task to UNICEF, Hyderabad only during 2021-22 and even as of January 2024, the State Government had not published its DRR Road Map with committed timelines to ensure a disaster resilient Karnataka.

From records made available, Audit noticed absence of road map with defined responsibilities and committed timelines, whereby the line departments did not initiate adequate preparatory/mitigative measures which affected the State's preparedness to confront one or the other or multiple disasters each year (as

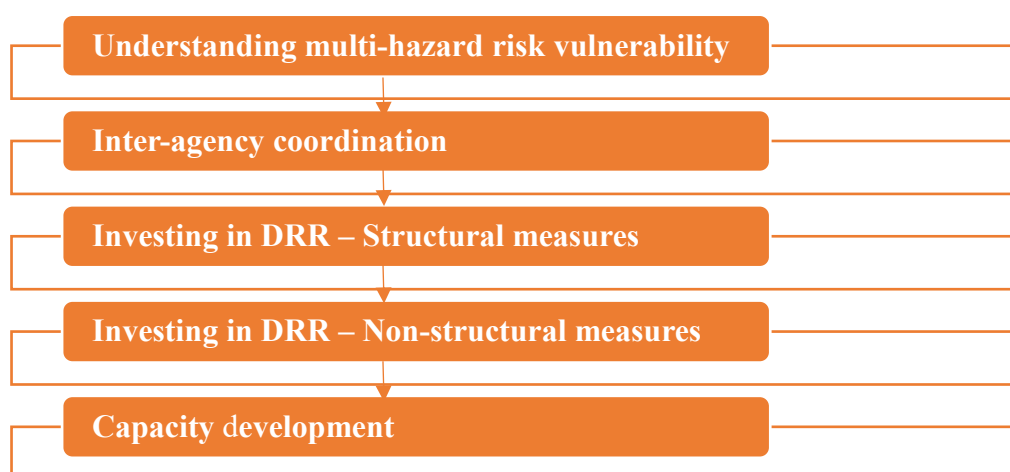
tabulated in Chapter I causing damage to lives⁷/infrastructure besides substantial financial burden towards compensation/restoration.

The Government replied (August 2024) that DRR road map had been prepared delineating department-wise responsibilities and goals and has been placed before the SEC for review.

2.1.4.2 State Disaster Management Plans

A Disaster Management Plan needs to be dynamic, actionable and updated/revised periodically in keeping with the situation on the ground. In the State, the SEC was responsible (Section 23 of DM Act) for preparing the SDMP. The SDMP was to include among other things the vulnerability of different parts of the State to different forms of disasters, measures to be adopted for prevention and mitigation of disasters, roles and responsibilities of each department *etc.* The components of SDMP are shown in **Chart 2.1** below:

Chart 2.1: Flow chart showing the components of SDMP



Source: KSDMP 2017-18.

➤ Preparation of State Disaster Management Plans

The NDMA published the updated and revised National Disaster Management Plan (NDMP) during November 2019. Accordingly, the State Government adopted the format for preparation of SDMP.

During the Audit period (2017-2023), the SEC had not prepared the SDMP for the years 2017-18 and 2018-19 and no reasons for the same were forthcoming from the records made available to audit.

The SDMP was to be prepared after consultation with local authorities, district authorities and the people's representatives. However, records of the SEC/Revenue Department (DM) made available did not contain the details of the SEC consultation with the local authorities, district authorities and the people's representatives prior to preparation of SDMP.

⁷ Both Human and Livestock.

State Government replied (August 2024) that the SDMPs have been formulated in consultation with all the line departments for efficient management of natural disasters and details of consultative meetings would be documented in future.

The deficiencies in implementation of SDMP in the State are discussed in respective disaster-wise chapters.

➤ **Absence of Standard Operating Procedures/Action plan**

Verification of SDMPs disclosed that plans had been prepared stipulating only the responsibility framework for the line departments with respect to different disasters. However, the required Standard Operating Procedures (SOP) to be followed by the authorities either prior to or post disasters had not been included in the SDMPs. Besides, none of the SDMPs included specific action plans for any disaster which the State had encountered in the past.

Though the list of disasters during the past years had been mentioned in the SDMPs, the details of lessons learnt and actionable points thereon to prevent such mishaps in future were not brought out.

➤ **Delay in approval of State Disaster Management Plans**

Section 23(7) stipulates that the copies of the SDMP, approved by the SDMA, shall be made available to all the departments of the Government to enable them to draw up their own annual plans in accordance with the State Plan. It was, therefore, judicious to prepare the SDMP for the ensuing year well in advance. Audit observed that there were delays in approval of the SDMP, by the SDMA every year. The SDMP for each year was being approved during/after September of the year to which the SDMP pertained.

The Government replied (August 2024) that action was being initiated to update and e-publish the SDMPs, but did not clarify the reasons for delay in approval of plans every year.

➤ **Objectives of State Disaster Management Plans not achieved**

The SEC prepared the SDMPs with defined objectives which *inter alia* included stimulating prevention and preparedness measures, putting in place a forecast mechanism, ensuring an institutional techno-legal framework, *etc.* It was observed that there were certain deficiencies in achieving the objectives of SDM Plans as shown in **Appendix 2.1**. The lacunae in achieving the objectives of SDM Plans are discussed in detail in corresponding disaster-wise Chapters in the Report.

2.1.4.3 Non-evaluation of preparedness

As per the DM Act (Section 22(2)(f)), the SEC among other functions was required to evaluate the preparedness at all governmental or non-governmental levels to respond to any threatening disaster situation or disaster and give directions, where necessary, for enhancing such preparedness). Audit observed that SEC had not taken up any such evaluation which resulted in departments not initiating necessary preventive/mitigative measures, affecting the State's preparedness to encounter disasters year on year, particularly floods and

landslides which were severely damaging infrastructure and vegetative/agricultural crops.

The Government replied (March 2023) that evaluation was not taken up as SDMP is prepared every year to guide the departments to take up preparedness activities. The reply is not acceptable as apart from guiding the departments, as per the DM Act, the SEC was also required to evaluate the preparedness of various levels of government to handle disasters. The SDMP enables the line departments only to chalk out the disaster plan and it cannot supplement the functions of SEC.

2.1.5 District Disaster Management Authority

Every State Government shall, as soon as may be after constitution of the SDMA, establish a District Disaster Management Authority (DDMA) for every district (Section 25(1) of the DM Act) by notification in the Official Gazette. The DDMA was to act as the planning, coordinating and implementing body for disaster management at district level and take all necessary measures in accordance with the guidelines laid down by the NDMA and KSDMA. It will, *inter alia*, prepare the District Disaster Management Plan (DDMP) including district response plan.

The State Government established the DDMA for every district in the State headed by the Deputy Commissioner of the respective district, with the elected representative of the local authority as the Co-Chairperson in 2009. Audit, however, observed that the constitution of DDMA was notified only during February 2021.

2.1.5.1 Meetings of the District authorities

Section 27 of the DM Act stipulates that the District Authority shall meet as and when necessary and at such time and place as the Chairperson may think fit. The details of meetings held by DDMA of the sampled districts during the period from 2017-18 to 2022-23 are shown in **Table 2.1**.

Table 2.1: Number of meetings held by DDMA of sampled districts

District	Number of meetings held during					
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Belagavi	1	0	5	1	1	4
Chikkaballapura	0	1	1	1	1	1
Dakshina Kannada	4	1	3	6	8	6
Davanagere	0	0	3	0	0	0
Haveri	0	0	2	8	2	0
Kalaburagi	Not furnished					
Kodagu	0	0	0	1	2	2
Ramanagara	1	1	2	2	3	3
Shivamogga	0	0	3	2	1	5

Source: Information furnished by the districts.

Dakshina Kannada and Ramanagara were the only districts which had conducted the DDMA meetings consistently during all the years. DDMA, Belagavi had not met even once during 2018-19 and had met only once during 2017-18, 2020-21 and 2021-22 despite the fact that the district was subjected to various disasters year on year. Further, the Kodagu district is vulnerable to flood/landslides and hence, DDMP has a critical role to play in preparedness

and mitigation. However, the DDMA, Kodagu had not met even once during 2018-19, the year in which the district was subjected to severe flood and landslide.

Audit further observed that the DDMA of sampled districts did not constitute any advisory committees, though required under Section 28(1) except Dakshina Kannada which had committees for oil spill and quick response.

State Government replied (August 2024) that although the meetings of DDMA are conducted at the districts regularly, the same had not been documented suitably.

2.1.5.2 District Disaster Management Plans

Section 31 of the DM Act stipulates that there shall be a plan for disaster management for every district of the State to be prepared by the District Authority and approved by the State Authority. The district plans shall be reviewed and updated annually.

Audit observed that the DDMA of the selected districts had prepared the district plans during the years 2017-18 to 2022-23. Though the district plans were forwarded to the State Authority, the SDMA had not reviewed and approved the plans in respect of the test-checked districts. Further, as per Section 31(5) of the DM Act, copies of the district plan shall be made available to the departments of the Government in the district to enable them to prepare their respective DM plans. However, the stipulation had not been complied with by any of the test-checked districts.

The Government replied (May 2023) that the departments in the districts have not prepared the DM plans, but the district plans were prepared in consultation with the departments concerned. However, there was no evidence on record to justify that the district plans were prepared in consultation with the departments concerned.

2.1.6 Other Disaster Management Plans

2.1.6.1 Government Departments

As per Section 40 of the DM Act, every department of the State Government, in conformity with the guidelines laid down by the State Authority, shall prepare a disaster management plan and annually review and update them. Further, every department of the State Government shall furnish an implementation status report to the SEC regarding the implementation of the disaster management plan.

Audit observed that 16 departments (dealing with functions vulnerable to disasters and as decided by SEC) prepared their DMPs only during 2020-21 and thereafter had not reviewed and updated them. However, none of the departments had furnished the status report to SEC on implementation of planned activities of their departments in managing disasters and thus, SEC did not effectively monitor the preparation and implementation of the DMPs by the departments in the State and integrate various disaster management activities

across the line departments. This affected coordination among the departments in implementing activities in convergence.

The Government replied (November 2022) that the departments did not furnish status reports and hence, the SEC had decided (September 2022) to constitute Disaster Management Cell in 16 departments at the State level to monitor the activities and the process is in progress and further replied (August 2024) that the completion, periodic updation and implementation of DMPs will be ensured through capacity building.

Recommendation 1: The State Government should ensure effective functioning of institutions like SDMA, SEC, DDMA's etc., duly complying with provisions of the DM Act and ensure preparation of integrated disaster management plans at all envisaged levels.

2.1.6.2 Local Authorities

As per Section 3.2.7 of the State Policy, all the local authorities⁸ were to prepare DMPs in consonance with guidelines of NDMA, SDMA's and DDMA's. Audit observed that none of the local authorities in the test-checked districts had prepared the required DM plans indicating absence of effective monitoring by the SDMA and DDMA's of preparatory activities for disaster management at grassroots level.

Though the Revenue Department (DM) replied (May 2023) that 2,250 out of 6,300 Gram Panchayats (GP) have prepared the DM plans, none of the plans were available in physical records at the test-checked district and taluk level offices, produced to Audit for verification.

2.1.6.3 Hospital/Educational Institutions

The SDMP of 2018-19 stipulates that every hospital shall have a Disaster Management Plan (DMP) for disaster management incorporating measures towards preparedness, mitigation, medical relief and rehabilitation *etc.* Similarly, the SDMP had made it mandatory for every school/college in the State to have a DM plan.

However, scrutiny of records made available showed that none of the hospitals (except a few private hospitals under Bengaluru Urban district) and educational institutions in the State as well as test-checked districts had prepared the required disaster management plan. The Commissioner, Health and Family Welfare Services stated (October 2023) that nodal officers are being trained during 2023-24 regarding preparation of DMPs.

It is mentioned in SDMP 2019-20 that training has been imparted to about 400 Medical Officers in the last 3 years, whose expertise can be used for preparing hospital DM plan. However, effective action had not been taken by the Government/departments to utilise their expertise in preparing hospital DM plans.

⁸ Panchayati Raj Institutions (PRIs), Municipalities and Town Planning Authorities which control and manage civic services.

2.1.6.4 Other agencies

The SDMP (2019-20) stipulated preparation of disaster management plans by many other essential sources/agencies. Audit observed that while the Onsite and Off-site DM plan was prepared for major accident hazard prone industrial units, the other envisaged plans like Dams - Emergency Action Plan, Railway Disaster Management Plan, Railway Disaster Response Plan, Heritage Area Disaster Management Plan, DM plan for Large Congregations and Crowds, Cyber Crime Management Plan, Animal Care Management Plan during disasters, *etc.*, were not prepared, by the State Government/KSDMA in coordination with the agencies concerned, even as of March 2023.

The Government replied (February 2024) that suitable instructions would be issued in this regard to ensure preparation of DMPs by all the authorities, as required. However, the Government did not furnish either details of the instructions issued or compliance thereon by authorities/agencies in preparation of their DMPs (August 2024).

2.1.7 Non-availability of Disaster Management Plans/publications in regional language

The disaster management plan is a policy document which needs to be disseminated up to the last mile community being the first responders to any disastrous event. Further, the State Government had brought out certain publications⁹ relating to management of different disasters.

Audit observed that except for SDM Plan 2019-20 and SDM Policy 2020, none of the action plans/publications were available in the local language to enable ground level officials/volunteers to understand and act appropriately. Though a decision was taken by the SEC during 2019-20 to bring out the SDMPs in regional language, the same was not implemented and thus, the Disaster Management Plans were not available in regional language at the State, District or GP level.

The Government replied (August 2024) that action would be initiated to e-publish important plans/action plans/policies related to disaster management in the regional language.

2.1.8 Crisis Management Committee and Plan

As stipulated in the Government of India's (GoI's) Crisis Management Plan (July 2007), the State Crisis Management Committee (SCMC) comprising high-level officials of the State Government headed by the Chief Secretary shall deal with major crises which have serious ramifications. The SCMC was to be activated in the event of crisis and it shall be assisted by the SEC as may be necessary.

Though the Crisis Management Committee/Group was constituted in the State (2010 and 2017) both at the State level and district level, no details were forthcoming from the records of the nodal department regarding the activation of the Committee/Group during any of the disasters the State had encountered during the period 2017-18 to 2022-23. Further, the specified Crisis Management

⁹ State Disaster Management Policy, Action Plan for Flood Risk Management, Action Plan for Landslide Management, Thunder and Lightning Action Plan, *etc.*

Plan (*vide* Government Order dated 19 July 2017) was not prepared in the State by any of the authorities.

The Government replied (August 2024) that the contingencies arising in future due to notified calamities will be dealt by SEC and DDMA through SDMP and DDMP respectively.

2.1.9 Emergency Operation Centres

The State Government had put in place (2013) the State Emergency Operation Centre (SEOC) at the State level and District Emergency Operation Centres (DEOC) at the district level which shall be the nerve centres for coordination and management of disasters. In accordance with the State Plan, the SEOC was responsible for operationalisation of Disaster Management Action Plan of all the districts, operationalisation of Standard Operating Procedures by/for various departments, monitor preparedness measures undertaken at district levels, prepare action taken report for Chief Secretary *etc.*

Audit conducted (September 2023) a joint physical verification of the SEOC along with the staff of nodal Department and observed that the SEOC was under-equipped (in terms of human resources and infrastructure) and remained ineffective for the following reasons:

- The space meant to accommodate SEOC and refurbished at an expenditure of ₹61.84 lakh (out of State Disaster Response Fund (SDRF) grants during 2020-21) was being used for other official purposes and thus, there was no place of functioning for SEOC.
- The posts of Director, Consultant and the Liaison officer were not filled.
- As provided in the SDMPs, the SEOC was the nerve centre for coordination in management of disasters which was to be equipped adequately with state-of-the-art technology equipment like video walls/large display TV sets, computers, laptops, fax machine, landline and mobile phones, satellite phones, VSAT connectivity, data wall with feeds from IMD, NRSC, INCOIS, CWC and all major media networks. However, the SEOC had only four desktops and one laptop, two landline phones and one printer.
- Both television sets provided to SEOC were not working and were seen placed in a corner at the time of JPV. Consequently, the SEOC did not have access to live telecasts of news relating to disasters.
- Call logs which are prominent in the functioning of SEOC for disaster specific complaints were not maintained and hence, Audit could not ensure functioning of the system as envisaged.
- Parts of the State were severely affected by floods/rainfall during the years 2019 and 2022 and Kodagu district experienced devastating landslides during the years 2018 and 2020. However, there was no evidence on record to show that SEOC was activated and coordinated rescue and relief operations.

Thus, the existence of SEOC at the State level complied with the provisions of the DM Act, however its functioning was affected, due to lack of functional resources.

Similarly, the DEOCs were to function as Control Room at the district level with Command, Control and Communication for effective response in an emergency through which management would be able to minimize the hardships of the community and improve the quality of the process of recovery. This control room was to provide timely support and well-thought-out interventions to the grassroots staff as well as volunteers. However, the DEOCs in the test-checked districts were also either non-existent or under-equipped, except for Dakshina Kannada district, which was equipped with display units and other essentials.

State Government replied (August 2024) that SEOC is being integrated with Emergency Response Support System (ERSS) and the Common Alerting Protocol (CAP). SEOC is being equipped with state-of-the-art communication equipment, infrastructure and will be shifted to KSNDMC premises to strengthen further.

The State Government needs to expeditiously address the strengthening of EOCs which are local centres for managing response activities when a disaster strikes.

Recommendation 2: The State Government should revamp the Emergency Operation Centres at all levels while ensuring availability of key infrastructure and form sector specific teams to deal with different disasters.

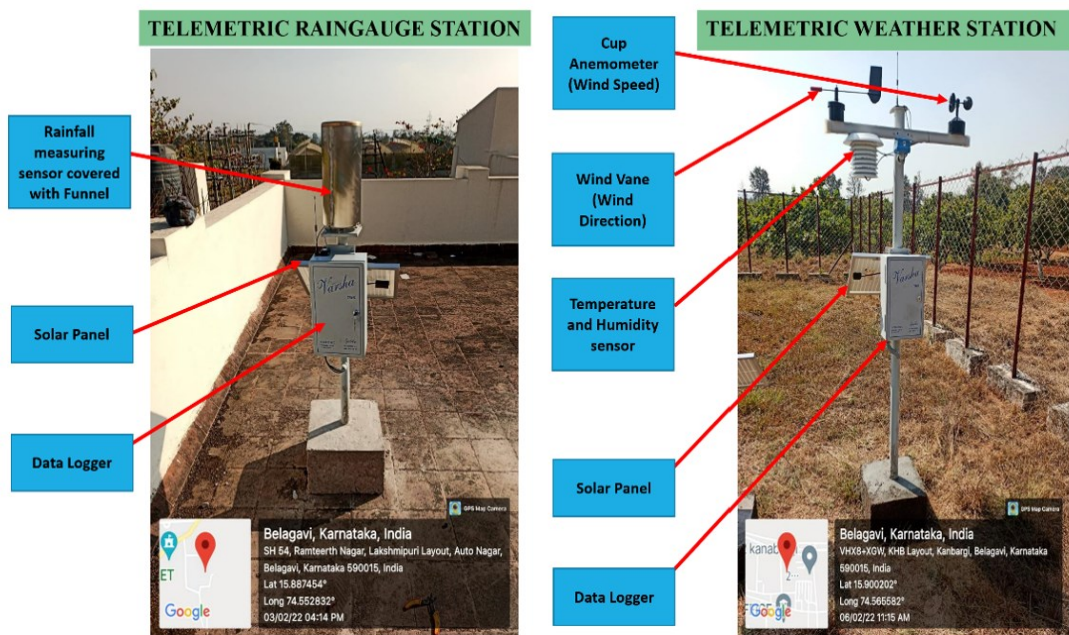
2.2 Capacity Building

Section (2)(b) of the DM Act defines capacity-building to include: (i) identification of existing resources and resources to be acquired or created; (ii) acquiring or creating resources identified; and (iii) organisation and training of personnel and coordination of such training for effective management of disasters. Audit observed that the expenditure of the Government towards capacity building and preparedness during the Audit period was grossly inadequate.

2.2.1 Weather forecast mechanism

Forecast mechanism plays a crucial role in disaster management by providing early warnings and predictions to help management and communities prepare for and mitigate the impact of potential disasters.

In Karnataka, the State Government established (1988) the Drought Monitoring Cell (DMC) as an institutional mechanism which was subsequently (2007) renamed as Karnataka State Natural Disaster Monitoring Centre (KSNDMC) broadening the activities to include monitoring of other natural disasters like flood, thunderstorm-lightning, earthquakes, *etc.* The KSNDMC was to provide necessary weather forecasts, early warnings and analysis for the State to make appropriate decisions. State Government provided funds for the activities of KSNDMC under the capacity building component of State Disaster Response Fund.

Exhibit 2.1: Photograph showing the TRG and TWS

Source: KSNDMC

As of December 2023, the KSNDMC had established a network of forecasting mechanisms as detailed in **Table 2.2** below.

Table 2.2: Details of KSNDMC Network for Early Warning System

Type of Early Warning System	Number	Disaster
GPRS enabled and solar-powered Telemetric Rain Gauges (TRGs) at the Grama Panchayaths level	6,358	Flood and Drought
Telemetric Weather Stations (TWSs) at Hobli level	834	Flood and Drought
Seismic observation centres	15	Earthquake
Lightning detectors	11	Lightening
Reservoir level sensors	6	Flood
RADAR Stream gauges in Krishna River basin	9	-

Source: Information furnished by the KSNDMC.

Through these networks and in alliance with IMD and Space Application Centre, Ahmedabad, the KSNDMC was generating/disseminating weather forecast alerts/advisories relating to rainfall and its intensity, temperature, humidity, wind speed, wind direction, seismic activities, lightning activities, *etc.*, to the stakeholders and general public in near real-time through media platforms.

Scrutiny of records at KSNDMC relating to forecast mechanism for different disasters disclosed that the data collection, forecasting and dissemination mechanism in place in the State was flawed with defunct/faulty equipment, deficient data, improper contract management, non-creation of disaster models, non-installation of sensors, *etc.*, which are discussed in disaster-wise chapters.

2.2.2 State Disaster Response Force

Section 44 of the DM Act provided for constitution of National Disaster Response Force for specialised response to natural and man-made disaster and Section 3.4.5 of National Policy on Disaster Management 2009, stipulated that

the State Government was required to put in place their own State Disaster Response Force (DRF) for quickly responding to disasters.

The State Government constituted four DRF units at Bengaluru, Mangaluru, Belagavi and Kalaburagi in June 2013 and the fifth unit at Davanagere in June 2022. The DRFs were functioning under the administrative control of Fire and Emergency department. Each unit had a sanctioned strength of 127 personnel comprising mainly of the police and fire service personnel. Review of records showed the following:

- The units had huge vacancies ranging from 67 to 96 *per cent* of the sanctioned strength because of which the units faced difficulties in managing shift-wise duties and rescue operations. The vacancies were mainly in the cadres of police inspectors and constables. The department stated that ex-army personnel were being recruited through outsourcing.
- All the DRF units were functioning from the buildings of other offices and did not have their own infrastructure. Audit observed that though adequate land has been sanctioned by the Government, same had not been made use of by the DRF.
- None of the posts of fire personnel was filled up in Mangaluru unit and only one fireman was available against the total sanctioned strength of 30 fire personnel in Davanagere unit. One post of Medical Officer sanctioned for each unit remained vacant in all the units.
- The DRF units were provided only a control room landline telephone connectivity and thus, were functioning without any advanced communication network. DGP (DRF) replied (July 2023) that the units are in need of exclusive communication equipment like wireless sets, closed user group mobiles, *etc.*
- Though the State was affected by floods recurrently, the units were not provided with trained divers.
- No funds were released to the Fire and Emergency department for training activities during the Audit period.

Thus, the SDRF units were ill-equipped with respect to equipment and personnel to be of any effective use.

Further, Government allocates funds for Fire and Emergency Services Department through its annual budget for its 'general' functions and activities towards fire forces and also towards salary and other components of SDR Force companies/personnel (like building and infrastructure, medical expenses, transportation, telephone charges, *etc.*). The Revenue Department (DM) releases funds, under capacity development component, which is to be expended only towards training activities and procurement of rescue equipment required for disaster management activities.

The details of funds released by Revenue Department (DM) to SDR Force (2013-14) are as detailed in **Table 2.3**.

Table 2.3: Details of funds released by Revenue Department (DM)*(₹ in crore)*

Year	Opening Balance	Receipts	Expenditure	Lapsed	Closing Balance
2013-14	0.00	7.63	2.89	0.00	4.74
2014-15	4.74	0.00	0.00	0.00	4.74
2015-16	4.74	1.00	0.05	0.00	5.69
2016-17	5.69	0.00	0.00	0.00	5.69
2017-18	5.69	0.00	0.00	0.00	5.69
2018-19	5.69	0.00	0.00	0.00	5.69
2019-20	5.69	20.09	18.09	0.00	7.69
2020-21	7.69	0.00	0.00	0.00	7.69
2021-22	7.69	0.00	0.00	0.00	7.69
2022-23	7.69	14.65	2.65	12.00	7.69
Total		43.37	23.68	12.00	

Source: Information furnished by Deputy Director, SDR Force.

With respect to capacity building, out of ₹1.33 crore released towards training activities during 2013-15 (prior to audit period) only a sum of ₹38.54 lakh was utilised by the department. No funds were released for training activities during the audit period of 2017-23. It has also been observed that as at the end of March 2023, a total sum of ₹7.69 crore was lying in the bank account of SDR Force, with lapse of ₹12.00 crore of allocated funds during 2022-23

The State Government replied (August 2024) that detailed information on functioning of SDRF will be obtained from the concerned department and will be suitably addressed. Further, it is added that adequate funds were provided to the Fire and Emergency services. However, the DRF units continued to be in need of personnel and equipment.

Recommendation 3: The State Government should ensure adequate capacity building by training officials at all levels for effective management of disasters at ground level and also strengthen the State Disaster Response Force.

2.2.3 Centre for Disaster Management

The State Government established (2000-01) the Centre for Disaster Management at Administrative Training Institute, Mysuru (CDM-ATI) for capacity building activities. The CDM-ATI was involved in training, research, documentation and development of state-level information based on disasters and management.

A review of the records/information furnished by CDM showed the following:

- CDM was preparing the State DMPs and imparting training to district/departmental authorities for preparation of respective DMPs.
- The centre was functioning with five trainers handling training programmes for all sorts of hazards.
- A total of 10,358 personnel of different cadres were provided training at CDM.
- The centre had provided training on disaster management to 4,900 elected representatives and 496 personnel of Non-Government

Organisations/civil societies (only in Mysuru city limits). Hence, the efforts at capacity building of the communities and community-based organisations in the State to handle emergencies were inadequate.

- As a capacity building measure, the SDMPs prescribed table-top exercises, simulations, and mock drills to improve operational readiness. Simulation techniques would be the best way of imparting practical training and demonstrations. However, simulation facilities for different types of disasters are not available at CDM.

The Government replied (August 2024) that the present initiatives of capacity building where government employees being trained in the CDM, Mysore in a phased manner was not effective and sufficient. Hence action is being taken to shift the capacity building activities to KSNDMC and setting up of the Karnataka State Institute of Disaster Management.

2.2.4 National Disaster Management Information System

The National Disaster Management Information System (NDMIS) is a comprehensive online application, developed by the Ministry of Home Affairs to capture disaster damages and losses effectively and also to monitor funds disbursal to the States for relief activities in case of disasters. The online System was to track the impacts of hazards for the entire country up to the district level.

The State authorities and their respective districts were responsible for entering the data of their local disasters¹⁰ on a daily basis. The State Government was also to provide online data on expenditure incurred from SDRF (including additional central assistance from NDRF) in line with the GoI-approved norms, on a real-time basis.

Audit observed that the database is not being updated on a daily basis either at the State level or district level. Thus, both the SEC as well as the department did not effectively monitor the utilisation of funds for DM activities indicating absence of an effective internal control mechanism. The non-maintenance of prescribed financial records and incorrect reporting is a matter of serious concern and the possibility of misutilisation/ misappropriation of SDRF funds cannot be ruled out.

The Government replied (August 2024) that instructions have been issued to districts and concerned departments to update requisite information on a regular basis in NDMIS portal.

2.2.5 Aapdamitra scheme

The NDMA approved (2016-17) a Centrally Sponsored Scheme called “Aapdamitra” with the objective of (a) training community volunteers with skills needed to respond to their community’s immediate needs in the aftermath of a disaster, thereby, enabling them to undertake basic relief and rescue tasks during emergencies such as floods, flash floods, and urban flooding, when emergency services are not readily available and (b) to create a Community

¹⁰ Such as death, injury, affected population by categories, economic losses in sectors such as education, health, housing, agriculture, industries, critical infrastructure such as roads, bridges and buildings, cultural heritages etc.

Emergency Stockpile/Reserve at the district/block level containing essential search and rescue equipment, medical first aid kits.

Scrutiny of records showed that training was imparted during June to August 2022 under this project to 3,400 volunteers in 11 districts at a cost of ₹4.14 crore. Audit, however, observed that the Emergency Responder Kits were not procured and distributed to any of the trainees. No records were also available in any of the test-checked districts indicating that the services of these trained volunteers were utilised for rescue operations during hazards. Hence, it could not be ascertained as to whether the trained volunteers were utilised during the rescue operations, and even if they were engaged, rescue operations would have been ineffective without the kits.

As a result, the State could not achieve the objective of the scheme as the trained volunteers cannot effectively perform their rescue operations during hazards without these kits.

The Government replied (August 2024) that Fire and Emergency department was instructed (March 2024) to procure Emergency Responder Kits for the volunteers trained under the scheme.

2.2.6 Capacity building activities at District level

As per Section 30(2) of the Disaster Management Act, the powers and functions of DDMA, *inter alia*, included review of capacity building plans and providing community training. Further, the local bodies were also required to ensure capacity building of their officers and employees for managing disasters, carrying out relief, rehabilitation and reconstruction activities in the affected areas. Audit observed that no funds were provided to DDMA towards capacity building and training till the year 2020-21. The State Government commenced release of funds only after the recommendations of the XV Finance Commission.

The Revenue Department endorsed (August 2023) the replies of the CDM-ATI which stated that a total of 9,844 personnel were trained at district/taluk/Grama Panchayat levels. Scrutiny of the reply revealed that the training was provided only to the government officials and elected representatives. The fact, however, remained that capacity building activities were not provided to the first responders¹¹ at the community level.

Details of community level training provided were not available with any of the test-checked districts, except in Dakshina Kannada which reported two training schedules. Similarly, none of the test-checked districts conducted mock drills for any type of natural hazards, except for Dakshina Kannada which reported mock drills at major accident hazard industrial/chemical installations.

Thus, as community level training was not provided in all districts, the training provided in the State under capacity building was inadequate to handle disasters. The Government replied (August 2024) that capacity building measures will be taken up to empower local population against vulnerable disasters through task force committees both in urban and rural local bodies.

¹¹ Local residents, voluntary rescue workers, etc.

2.2.7 *Insufficient IEC activities towards disaster management*

A crucial pathway to reduce disaster risk is to generate awareness among the people about disastrous events and educate them to deal with such situations. Information, Education, and Communication (IEC) activities play a crucial role in disaster management by facilitating the dissemination of information to the public, promoting awareness, and educating communities on preparedness, response, and recovery measures, thereby enhancing overall resilience and reducing the impact of disasters.

In this connection, Audit observed the following:

- None of the authorities like KSDMA, SEC or Revenue Department (Disaster Management) had taken up effective IEC activities at the macro level towards disaster management like mass communication through radio/television on do's and don'ts of various natural and man-made disasters, preparedness and response activities, reacting to emergency situations, *etc.*
- It was decided in the SEC meeting (September 2022) to release a sum of ₹7.44 crore to the districts for awareness and IEC initiatives. SEC further resolved (February 2023) to release the funds towards awareness and IEC activities only after transforming the material, prepared by the National Institute for Disaster Management (NIDM), ATI and UNICEF, to the State's applicability. However, no action has been taken either by SEC/nodal department for customisation of these materials. Consequently, funds were not disbursed to districts by the nodal department even as of October 2023.
- NIDM, a premier institute for training and capacity building, aimed to create interest and raise the level of knowledge, skill and awareness on disaster management by offering free-of-cost self-study courses for the public, government officials and other stakeholders. This facility could be accessed by anyone from anywhere in the country at his/her convenience in flexi time. However, the nodal department neither provided any publicity among the public/NGOs/CSOs regarding availability of such an opportunity nor encouraged government officials to get enrolled for free-of-the-cost courses.

Thus, the State Government had not taken any effective action towards reaching out to the people exposed to disaster risks at the grassroot level through the vital aspect of community awareness and IEC activities. This gap may lead to delayed or inadequate responses, increased vulnerability and disturbances during disasters which could hinder recovery efforts.

The Government replied (August 2024) that digital IEC materials have been created for various disasters during 2023-24 which have been disseminated to all the districts and on social media platforms. It is further stated that an Executive IEC Consultant is being hired to oversee the preparation of creative IEC visuals.

The reply cannot be accepted as State Government could have utilised/ customised the IEC material already prepared by NIDM and UNICEF and available free of cost instead of appointing another Executive Consultant for

IEC, which would additionally burden the SDRF grants. Further, neither were copies of the disseminated digital IEC materials nor social media links furnished to audit.

Recommendation 4: The State Government should prioritise IEC activities at all levels to create awareness and better educate communities on disaster management.

2.2.8 Strengthening of State/District Authorities

Sections 16 and 29 of the DM Act stipulate that the State Government shall provide the State and District Authorities with such officers, consultants and other employees as it considers necessary for carrying out the functions.

While KSDMA was grossly understaffed, the State Government had not assessed the number of staff required for the functioning of the District Authorities. Audit observed that a total of 32 DM Professionals were appointed (31 professionals at district level and one at the State level) on an annual contract basis under the centrally sponsored scheme ‘Strengthening of State Disaster Management Authorities and District Disaster Management Authorities¹²’, to manage all the activities pertaining to DM.

To discharge the expected duties and responsibilities¹³, the District Professional was to be trained onsite as well as off-site for acquiring knowledge base and management of all sorts of disasters, which also helps in preparation of DDMP comprehensively. This requires the professional to extensively move around the district to understand the terrain and local ground realities and explore ways of handling disasters. The status of the fundamental facilities/requirements provided to the district DM professionals was as detailed in **Table 2.4** below:

Table 2.4: Fundamental facilities/requirements provided to the district DM professionals

Facility/Requirement	Factual status
Comprehensive training at NIDM and other high-level institutions for all sorts of disasters	Training was not provided to any of the Professionals, except for the person in Dakshina Kannada who was given theoretical training twice for 3 and 5 days respectively
Exclusive communication network (satellite phone/hot line/wireless set/mobile phone <i>etc.</i>) to be in contact with district administration and DDMA in handling disasters effectively	A wireless walkie talkie provided only for the Professional at Kodagu district
Simulation training to understand the ways for planning prevention as well as response activities to various disasters	Not provided to any of the Professionals
Specialised training for dealing with special emergency situations	
Training in conducting mock drills in different types of disasters (both pre and post disaster activities)	

¹² The NDMA formulated (2015) the scheme with the objective of improving the effectiveness of all SDMAs and DDMA and making them functionally operational by providing dedicated DM professionals for taking up prevention, mitigation, preparedness and capacity building measures to deal with the threatening disaster situation or disasters.

¹³ Which included carrying out hazard risk vulnerability assessments, updating the DDMP, implementing DRR activities/programmes, facilitating community training and awareness programmes, organising mock drill and Information, Education and Communication (IEC) activities for district specific disasters *etc.*

Facility/Requirement	Factual status
A designated vehicle for exploring the vulnerable terrains during the disaster as also travelling for arranging awareness/IEC to the last mile community	
Appropriate lifesaving equipment (terrain specific shoes, raincoat, helmet, lifeguard, mask, etc.)	
Social security measures (life insurance, medical allowance/facilities	
Travelling/daily allowance towards extensive travelling to different parts of the district	

Source: Data obtained by district disaster professionals in the form of a google spreadsheet issued through Revenue Department.

Thus, the district DMPs were expected to function without basic social security benefits to their own life and suitable simulative training. To expect a person without wide range of training to be prepared against all possible hazards and draft comprehensive disaster management plan as well as impart community training for capacity building, etc., was not prudent.

It is imperative to mention here that the professionals were not being used for the envisaged core functions and in the absence of required facilities the productivity/ outcome of these professionals was doubtful.

The Government replied (August 2024) that action has already been initiated to provide required staff for KSDMA for effective functioning and will further be strengthened through World Bank Programmes. However, the Government's reply was silent on absence of fundamental facilities/ requirements for the district DM professionals at the grassroot level.

2.3 Incident Response System

Disaster response is a multi-agency function. The nodal department (Revenue Department (Disaster Management)) was responsible for managing and coordinating the response while other departments/agencies were to support and aid in managing the incidents. The SDMP details the response activities to be carried out in cases of disasters.

The SDMPs envisaged an Incident Response System (IRS) in the State involving different authorities and functionaries. Accordingly, the State Government had to activate the Incidence Response Teams (IRTs) at the State, district or taluk level and ensure coordination with SEOC. The details of IRTs established and put to action during any of the disasters were not documented at any level.

The Revenue Department replied (May 2023) that inputs from all the stakeholder departments are being sought and the IRS would be formulated and notified. However, the Government did not offer any comments (August 2024).