

Abbreviations

BRGF :	Backward Regions Grant Fund
BSNL :	Bharat Sanchar Nigam Limited
CBO :	Community Based Organizations
CE :	Chief Engineer
CEO :	Chief Executive Officer
CMC :	Crisis Management Committee
CMO :	Chief Medical Officer
CMRF :	Chief Minister Relief Fund
CSO :	Civil Society Organization
DDMA:	District Disaster Management Authority
DDMP:	District Disaster Management Plan
DM :	District Magistrate
DMT :	Disaster Management Team
DRR :	Disaster Risk Reduction
EOC :	Emergency Operation Centre
ESF :	Essential Service Functions
EWS :	Early Warning System
FRT :	First Response Team
GIS :	Geographic Information System
GP :	Gram Panchayats
GPS :	Global Position System
HFA :	Hyogo Framework for Action
HRVCA:	Hazard, Risk, Vulnerability, and Capacity Analysis
HVCA:	Hazard, Vulnerability and Capacity Analysis
IAF :	Indian Armed Force
IAG :	Inter-Agency Group
ICDS :	Integrated Child Development Services
IMT :	Incident Management Teams
IRS :	Incident Response System
IRT :	Incident Response Team
PMAY:	Pradhan Mantri Awas Yojna
MGNREGS:	Mahatma Gandhi National Rural Employment Guarantee Scheme
MLA :	Member of Legislative Assembly
MNREGA:	Mahatma Gandhi National Rural and Education Guarantee Action
MP :	Member of Parliament
MPLADS:	Member of Parliament Local Area Development Schemes
MAMSI:	Meters above mean sea level
NABARD:	National Bank for Agriculture and Rural Development
NCC :	National Cadet Corps
NDMA:	National Disaster Management Authority
NDRF :	National Disaster Response Force/Relief Fund
NGOs :	Non- Government Organizations
NREGA:	National Rural Employment Guarantee Act
NREGS:	National Rural Employment Guarantee Scheme
NRHM:	National Rural Health Mission
NSV :	National Service Volunteer
NYK :	Nehru Yuva Kendra
PDS :	Public Distribution Shop
PHC :	Primary Health Centre
PHED :	Public Health Engineering Department

PMRF :	Prime Minister Relief Fund
QRT :	Quick Response Team
SDMA :	State Disaster Management Authority
SDRF :	State Disaster Response Force/Relief Fund
SHG :	Self Help Group
SME :	Small and Medium Enterprise
SOP :	Standard Operating Procedure
SP :	Superintendent of Police
SSA :	Sarva Shiksha Abhiyan
UN :	United Nations
UNISDR:	United Nations International Strategy for Disaster Reduction
WASH:	Water Sanitation and Hygiene

Terminologies

Disaster

A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.

Disaster management

The organization, planning and application of measures preparing for, responding to and recovering from disasters.

Emergency is sometimes used interchangeably with the term disaster, as, for example, in the context of biological and technological hazards or health emergencies, which, however, can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.

Vulnerability

The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

Capacity

The combination of all the strengths, attributes and resources available within an organization, community or society to manage and reduce disaster risks and strengthen resilience.

Capacity assessment is the process by which the capacity of a group, organization or society is reviewed against desired goals, where existing capacities are identified for maintenance or strengthening and capacity gaps are identified for further action.

Disaster risk

The potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

Disaster damage occurs during and immediately after the disaster. This is usually measured in physical units (e.g., square meters of housing, kilometres of roads, etc.), and describes the total or partial destruction of physical assets, the disruption of basic services and damages to sources of livelihood in the affected area.

Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

Early warning system

An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities systems and processes that enables individuals, communities, governments, businesses and others to take timely action to reduce disaster risks in advance of hazardous events.

Evacuation

Moving people and assets temporarily to safer places before, during or after the occurrence of a

hazardous event in order to protect them.

Hazard

A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.

Mitigation

The lessening or minimizing of the adverse impacts of a hazardous event.

Preparedness

The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Prevention

Activities and measures to avoid existing and new disaster risks.

Reconstruction

The medium- and long-term rebuilding and sustainable restoration of resilient critical infrastructures, services, housing, facilities and livelihoods required for the full functioning of a community or a society affected by a disaster, aligning with the principles of sustainable development and "build back better", to avoid or reduce future disaster risk.

Recovery

The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and "build back better", to avoid or reduce future disaster risk.

Rehabilitation

The restoration of basic services and facilities for the functioning of a community or a society affected by a disaster.

Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

Response

Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

Retrofitting

Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Structural and non-structural measures

Structural measures are any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems. Non-structural measures are measures not involving physical construction, which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.

(Source: Ministry of Home Affairs, Government of India - Disaster Management in India, National Institute of Disaster Management- Key terminologies and UNISDR - key terminologies)

Executive Summary

On 23 December 2005, the Government of India took a defining step by piloting the enactment of the Disaster Management Act 2005, which envisaged creating:

1. National Disaster Management Authority (NDMA), headed by the Prime Minister of India;
2. State Disaster Management Authorities (SDMAs) headed by the Chief Ministers;
3. District Disaster Management Authorities (DDMAs) headed by the District Collector/Deputy Commissioners and co-chaired by the elected representatives of local authorities;

To spearhead and implement a holistic and integrated approach to Disaster Management.

The Disaster Management Act, 2005 provided the requisite institutional mechanisms for formulating and monitoring the implementation of Disaster Management Plans. This was done to ensure measures by various wings of the Government for preventing and mitigating the effects of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation.

There has been a paradigm shift in dealing with disasters in the country. Recently, the approach of the Government for dealing with disasters has changed from Relief Oriented Approach to planning, preparedness and mitigation. The focus on capacity building of all the stakeholders is given due emphasis by the State Government for better Disaster Management.

In the last decade, the government of Bihar had become more sensitised and pro-active to address disaster risk reduction across the state. Many guidelines and standard operating procedure are developed. In 2015, department of Disaster Management Bihar launched its state disaster risk reduction roadmap focusing on all three measures of preparedness, prevention and mitigation. The Bihar DRR roadmap, 2015 covers state level to village level DRR activities, focusing on Five main components i.e. resilient villages, resilient livelihood resilient critical infrastructure, resilient basic services, and resilient cities.

The impact of these disasters like earthquake, flood, cyclone etc. hinders the overall development effort of the state/district. Government and the community need to be aware of the risks and take concrete actions to prepare for and mitigate against the natural disasters affecting their place of living. Greater attention by government, community and other stakeholders like Non-Governmental Organizations, Community Based Organizations, and Corporate Sectors should be paid on identifying and reducing disaster risks within local communities.

Sitamarhi District, Bihar being situated in Seismic Zone - V is highly vulnerable to earthquakes.

The earthquake of 5.3 Magnitudes which occurred in 2015 also caused loss of human lives and properties. The district experiences several low to medium intensity earthquakes regularly. Apart from earthquakes, the district is affected by a number of floods, fire accidents, road accidents and other kinds of hazards. Bagmati, Lakhandei, Lalbakiya, Adhwara Samuh (Marha, Hardi, Rato, Jheem, Baya), Manusmara rivers and tributaries/rivulets covering a total area of 10.36 sq. km and approx. 194.852 km passing through Sitamarhi district. Vulnerability of the district increases due to heavy rains in the hilly terrains of Nepal flashes down, as river streams into the plains of Sitamarhi of Bihar causing flash floods in Northern blocks of the district that are closer to Nepal and floods in blocks towards the centre and south of the district. Clearly, all these points lead to the need to prepare plan for effective response of any emergencies and as mandated by the National Disaster Management Act, 2005. With this mandate, the DDMA has the responsibility for preparation of the District Disaster Management Plan by involving all stakeholders.

This document comprises of Ten chapters namely- Introduction; District Profile; Hazard, Vulnerability, Capacity & Risk Assessment; Institutional Arrangements; Prevention, Mitigation and Preparedness measures; Capacity Building and Training Measure; Response & Relief Measures; Reconstruction, Rehabilitation & Recovery Measures, Budget and financial resources; Monitoring, evaluation and update of DDMP, appendix and maps.

This document is expected to meet the requirements for dealing with disasters, however, since the community is the first respondent to any disaster, it needs to be empowered for coping up with disasters as well as mobilize their capabilities and capacities for effective Disaster Management.

District Disaster Management Plan

District Disaster Management Plan of Sitamarhi district has been divided into 10 chapters. Following chapter wise content has been covered in the DDMP;

Chapter 1

The first chapter of District Disaster Management Plan is introduction. This chapter describes the vision and objectives of the plan. It also covers scope of the plan, implementing DDMP: Main stake holders and their responsibility and plan review and update.

Chapter 2

The second chapter of the DDMP gives an overview of the profile of Sitamarhi District, namely the geographical, climatic, cultural, historical and demographical factors that are relevant to the prominent disasters in the Sitamarhi district. It also describes the administrative setup and natural resources in the district. Sitamarhi is located at 26.6°N 85.48°E. It occupies an area of 2,294 square kilometres and has an average elevation of 56 meters (183 feet) with the total population of 3423574 in which 1803252 are male and 1620322 are female.

Chapter 3

The third chapter presents the Disaster profile covering the natural and manmade disasters of the Sitamarhi district. Prevalent hazards like flood, drought, fire, Heat Wave, earthquake, road accident, boat capsizing, snake bites and homogeneously applicable issues across the district are discussed.

Chapter 4

The fourth chapter focuses on institutional arrangements for effective implementation of disaster management activities and plans. This chapter also includes roles and responsibilities of the Panchayati Raj Institutions and Community based organisations pre, during and post disaster times. It also elaborates coordination mechanism at departmental level, sub divisional level, circle level and local level.

Chapter 5

The fifth chapter of the Plan elaborates the measures for disaster prevention, mitigation and preparedness. The chapter discusses the common action for prevention, mitigation and preparedness for key line departments. The detailed and disaster wise measures for prevention, preparedness and mitigation have also been discussed of total thirteen line departments.

Chapter 6

This Chapter focuses on capacity building and training. It discusses the importance and need of capacity building at district level. In this chapter with the use of table detailed department wise and topic wise list of training were suggested for district level, institutional level and community level capacity building programmes.

Chapter 7

This chapter gives a detailed note on the roles and responsibilities of line departments and community based organisations for coordinated and effective response to disasters. It also covers early warning and communication mechanism using "top to bottom" and "bottom to top" approaches. Action plans and SOPs are there in this chapter.

Chapter 8

Eighth chapter describes the reconstruction, rehabilitation and recovery measures in post disaster time. It also discusses the "build back better" approach of disaster. This chapter divides the reconstruction, rehabilitation and recovery measures into three phases, which cover short term, medium term and long-term measures. Chapter 8 also suggested ways of doing rapid and detailed damage assessment.

Chapter 9

This chapter focuses on financial resources for supporting department wise risk reduction related activities at district level. The possible sources of funds from centrally sponsored and state sponsored schemes by describing eligibility and suggested activities that may be taken up are also there.

Chapter 10

Chapter 10 focuses on monitoring, evaluation and update of DDMP suggested in section 31 and sub section 4, 50, 6 and 7 under disaster management act 2005. It also covers authority for preparing and reviewing the DDMP and mechanism for evaluating and testing of the plan

Chapter 1: Introduction

The district of Sitamarhi in particular is one of the multi-hazard prone districts of Bihar. As a result, it was important to develop a plan that improves district's response to disasters while improving its ability to mitigate the disaster risks and increasing community's resilience by implementing the preparedness plan.

It was important to put a plan in place for dealing with disasters in an organized way with all the stakeholders well aware of their role in responding to or preparing for disasters, as the district management is in charge for responding to site. The State and the Central governments are also in charge for providing extended support, guidance, external resources or additional help as required in case of any major disasters and upon the request of support from the district. Under the DM Act 2005, it is mandatory as a role of District Disaster Management Authority (DDMA) to adopt the continuous and integrated process of planning, organizing,

coordinating and implementing measures, which are necessary and expedient for prevention as well as mitigation of disasters. These processes are to be incorporated in the developmental plans of the different departments to ensure the risk-informed development planning. . The actions described in the Bihar Disaster Risk Reduction Roadmap were also discussed with the District Disaster Management Authority of Sitamarhi and incorporated in this disaster management plan.

The vision of District Disaster Management Plan is to enable disaster resilient and risk-informed development in Sitamarhi district and provide services that are essential for the life and dignity of citizens during disaster and non-disaster situations.

Objectives:

The objectives referred from the plan include DM Act 2005 section 30 and 31.

- To identify the areas vulnerable to major types of the hazards in the district.
- To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its effects.
- To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- To enhance disaster resilience of the people in the district by way of capacity building.
- Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
- Manage future development to mitigate the effect of natural hazards in the district.
- To set up an Emergency Operations Centre at the District level to function effectively in search, rescue, response.
- To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- To set up an early warning system so as to prepare the community to deal with the disaster and responsive communication system.
- To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.
- To adopt disaster resilient construction mechanism in the district by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development.
- Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at district level and local authority.

Scope of the Plan:

The scope of District Disaster Management Plan of Sitamarhi District is very wide, and it is applicable in all the stages of disasters (before, during, after & non-disaster time). The plan is prepared by considering both natural and manmade disasters and the most vulnerable population in the Sitamarhi district. The plan also covers roles and responsibilities of all key stakeholders in different stages of disaster, covering Line departments, CBOs, Community, PRIs, /Municipality etc. The DDMP can help officials in taking important decisions and provide guidance to direct subordinates in emergency. It is important for the District Disaster Management Authority members to look after the district and sub district level institutional activities pertaining to the disaster management, including the periodic review of DDMP and allied functions. DDMP is an operational module for district administration (owned by the DDMA) and it helps to mitigate the different types of disasters with locally available persons and resources effectively. It also ensures a checklist for all the stakeholders for an action oriented response structure and to study their preparedness level.

Implementing DDMP: Main stake holders and their responsibility.

As the chairperson of District Disaster Management Authority sitamarhi district, it would be the prime responsibility of the District Magistrate to review and implement the DDMP of Sitamarhi district. The District Disaster Management Authority will work under the guidance and leadership of the District Magistrate. Nodal Officer Senior Deputy Collector, Disaster Management will help District Magistrate to implement District Disaster Management Plan. For medical relief and recovery work of the affected community, the Civil Surgeon will lead all medical related activities. Entire district administration will support the District Magistrate for the all task related to mitigation, risk reduction, preparedness, rehabilitation and reconstruction.

Plan review and update

Every time the DDMP is reviewed and updated, it has to be uploaded on the website of the district administration and the updated version should distinctly mention the major changes and newly added components so that any block or district official, community based organization, NDMA, can easily study the plan etc. Additionally, updated DDMP is to be circulated all stakeholder department, agencies and organisation. **(disaster management act. 2005 of section 31 (4)) .**

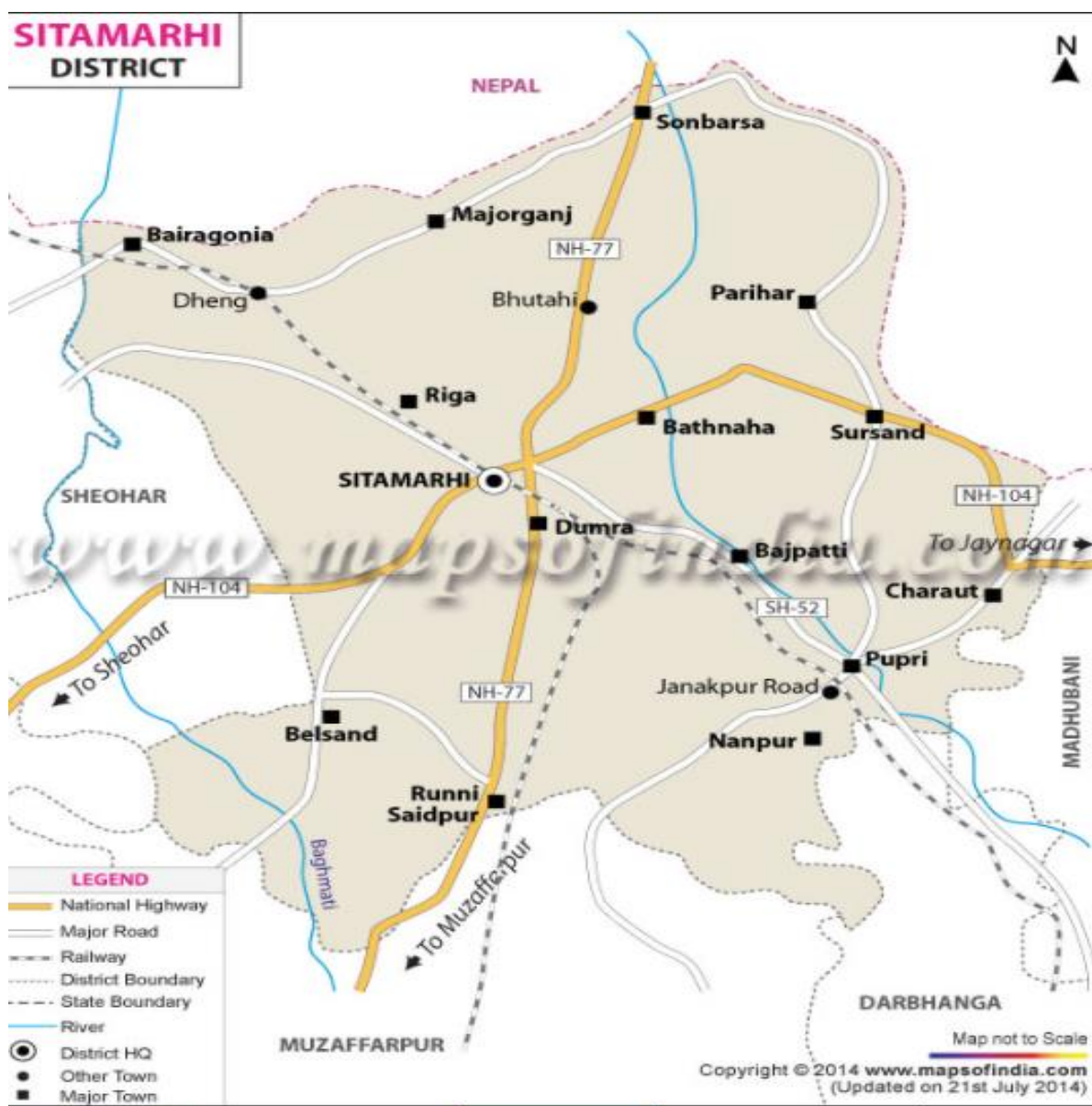
Chapter 2. District Profile

Geographical Features

The Sitamarhi district is located at 26°36'N and 85°28'E. It occupies an area of 2185.17 square kilometres and has an average elevation of 56 meters (183 feet). Sitamarhi district forms the part of the North Bihar Plain and is located on the Indo-Nepal border. It is surrounded on the north by Nepal, on the east by the districts of Darbhanga and Madhubani on the west by the districts of Sheohar and Purbi Champaran and on the south by the district of Muzaffarpur.¹

The primary occupation of the people of the district is agriculture. Sitamarhi district gives away to many important river like Bagmati, Lakhandai, Adhwara Samuh (Rato, Hardi, Jheem, Baya), Lalbakiya, Manusmara, which leaves a highly fertile lands. The farmers are taking even three crops in a year. The water for irrigation is available round the year.

National Highway-77 and 107 passes through District Sitamarhi.



Climate Weather Profile

There are three well-marked seasons, winter, summer and the rainy seasons. The cold weather begins in November and continues up to February and Summer Season extends from March to May. The rainy season extends from June to September, October being the transitional Month. Humidity is recorded between 68% and 83%.

Westerly winds and dust storms begin to blow in the second half of March and the temperature rises considerably. May is the hottest month when the temperature goes up to 40° C. Rains set in towards the middle of June. The climate of the district is sub-tropical to sub-humid in nature. Hot weather commences from the month of March when hot westerly winds, often accompanied by dust storms begin to blow during the day, while during the night, the wind blows from east and the temperature is comparatively low. Rain sets in during the fourth week of May and continues till September.

Rainfall normally ranges from 9.6 mm to 488.5 mm.

The district also receives some winter rains which improves the prospects

The rains continue until the end of September or middle of October. With the cessation of rains, the temperature falls and the climate become rather pleasant.

जिला सांख्यिकी कार्यालय, सीतामढ़ी				
वर्ष 2021 का वर्षापात प्रतिवेदन माहवार।				
क्र० सं०	माह का नाम	सामान्य वर्षापात (MM)	औसत वर्षापात (MM)	DEPT %
1	2	3	4	5
1	Jan-21	9.7	0.0	-100
2	Feb-21	8.0	0.0	-100
3	Mar-21	9.6	1.9	-80.2
4	Apr-21	25.9	10.5	-59.3
5	May-21	71.5	260.0	263.7
6	Jun-21	190.8	366.0	91.8
7	Jul-21	384.4	417.1	8.5
8	Aug-21	310.1	488.5	57.5
9	Sep-21	176.1	54.9	-68.8
10	DATE 27-10-2021	65.1	204.3	214.0
कुल योग :-		1251.1	1803.2	44.1

Culture and Historical Perspective

The district of Sitamarhi was carved out of Muzaffarpur district on 11 December 1972. It is situated in the northern part of Bihar. It is headquartered at Dumra, five kilometres south of Sitamarhi. The district headquarter was shifted here after the town of Sitamarhi was devastated by an earthquake in January 1934. Sitamarhi is a sacred place in Hindu mythology. Its history goes back to Treta Yug wherein Sita, the wife of Lord Rama sprang to life out of an earthen pot, when Raja Janak was ploughing the field somewhere near Sitamarhi to impress Lord Indra for rain. It is said that Raja Janak excavated a tank at the place where Sita emerged and after her marriage set up the stone figures of Rama, Sita and Lakshman to mark the site. This tank is known as Janaki-kund and is south of the Janaki Mandir. With course of time, the land lapsed into a jungle until about 500 years ago, when a Hindu ascetic, named Birbal Das came to know the site by divine inspiration where Sita was born. He came down from Ayodhya and cleared the jungle. He found the images set up by Raja Janak, built temple over there and commenced the worship of Janaki or Sita. The Janaki Mandir is apparently modern and is about 100 years old only.

a) Food Habits

In the morning breakfast Dahi Chura, Poha, Chana Ghugni, and Sattu parathas are served with aloo bhujia. The most common food habits include Rice, Dal, Chapattis, Vegetables, Non-Vegetarian items, items of gram flour.

b) Dressing Style

In Bihar, the common dressing style for men is Kurta-Dhoti, Kurta-Pyjama and Pant-Shirt. For women it is Saree and Salwar-Kurta.

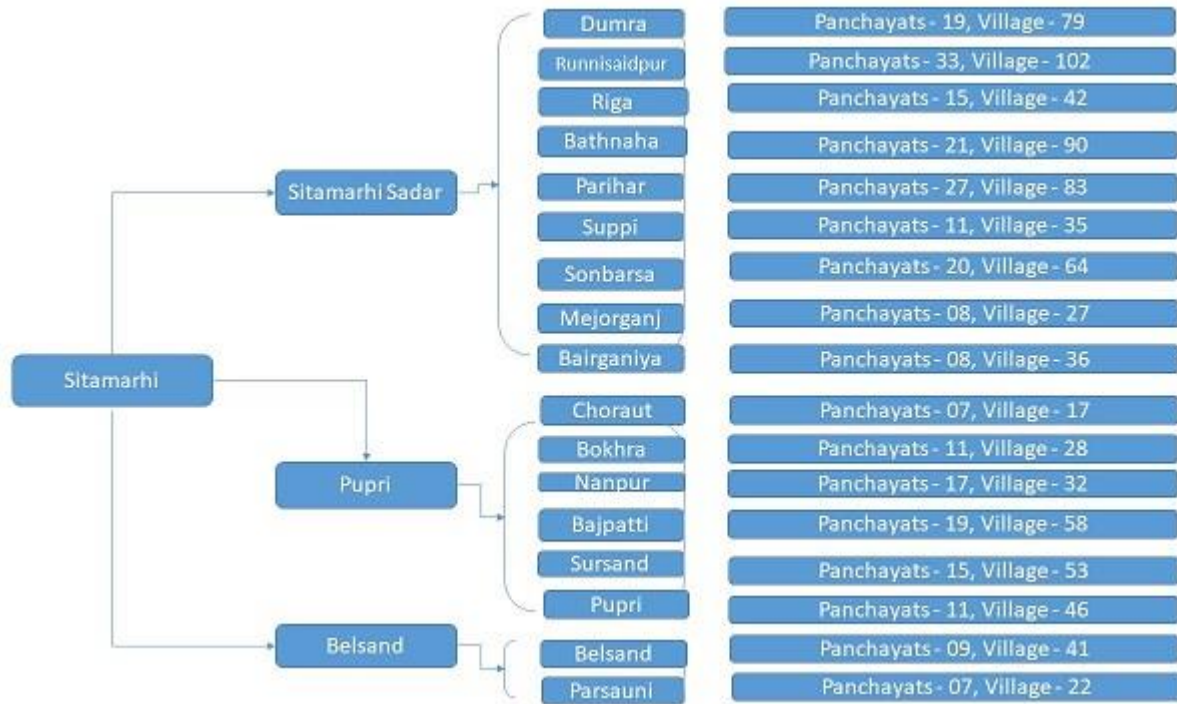
c) Major Festivals

The majority of people in Bihar are Hindu, so the traditional Hindu festivals are observed in the region, as Holi, Saraswati Puja, Durga Puja or Dusserah, Deepavali, Bhaiya Dooj, etc. Despite that, Sitamarhi has a peculiar place in the culture of Bihar; it is a meeting place of Hindu and Islamic culture and thoughts. Therefore, with the major festivals of Hindu's like Chhath Puja, Makar Sankranti, Holi, Month of Ramadan and Eid are also celebrated across the district with equal pomp and joy.

List of prominent Heritage sites and Hazard Risk

Serial No.	places	Descriptions	Hazard Risk
1	Janki Temple (Sitamarhi)	Janki Temple is a highly respected shrine located in Sitamarhi, near bus station. The temple is devoted to Sita and along with Sita Devi, Lord Ram and Lakshman are worshipped here. It was built approximately 100 Years ago and is adorned by a spring located next to it.	Stampede and Fire during festival celebration (Vivah Panchmi, Ram Navmi, Durga Puja and Janki Navmi)
2	Janki Temple (Punaura)	Janaki Temple of (Punaura) is situated at a distance of about 5-km to the southwest of Sitamarhi. Dedicated to Goddess Sita.	Stampede (Vivah Panchmi, Ram Navmi, Durga Puja and Janki Navmi)
3	Haleshwar Asthan	Haleshwar Asthan is an example of the magnificent ancient architecture of India. An ancient temple dedicated to Lord Shiva, it is located about 3-km to the northwest of Sitamarhi. According to local myths, the King of Videha founded this temple during Putrakeshi Yajna.	Stampede and Fire (Mahashivratri)

Administrative Structure



Administrative Structure of Sitamarhi District

Natural Resources

The district forms part of the Indo - Gangetic Plains, is primarily a flat alluvial terrain with a slope towards south, and is devoid of any major topographic irregularity. Although, it has gardens of mango, guava, banana, jackfruit, bamboo, palm, khajoor, pipal and turmeric etc.

The District is mainly drained by rivers Bagmati, Lakhandai, Lalbakaiya, Adhwara Samuh (Marha, Rato, Jheem, Hardi, Baya), Manusmara, which generally flow in north-eastern direction. However, all these rivers and their tributaries are perennial but these rivers are very unpredictable. During rainy season, these rivers become very devastating causing flood in the area. Due to this peculiar character the sedimentation rate during monsoon is very high near the riverbank, which have resulted in the formation of the elevated-up land.

The District is a vast alluvial plain watered by the rivers mentioned earlier. It is rich in vegetation and its green fields are dotted with groves of mango, bamboo and other trees. The land being fertile, no area is left barren for wild growth. In the sandy land between the Bagmati and Lakhandai babool trees are grown. In the vast stretch of land beyond the Bagmati river, various feed crops and vegetables are grown. With continuous extension of the area under cultivation, wild buffaloes, gazelle, deer and tiger have disappeared. The only wild animals sometimes seen in the District are the fox and Jackal besides the Nilgai and the wild pig in the grassy diaras. The District also have abounds in fish, common among which are Rehu, Singhi, Bachwa, Tengra, Kewai. Poisonous snakes like gehuman, karait, cobra etc. are found in the district.

Main Occupation

Agriculture and Livestock

Sitamarhi is mainly an agricultural district with more than 75 percent of population engaged in agriculture. Agriculture is the main occupation of the people of the district and also the main source of livelihood of the people. The Economy of the district mainly depends upon agriculture.

Cultivable land	hectare	187737.80
Net Shown area	„	131314.00
Cultivable Fallow Land	„	1631.50
Current Fallow Land	„	24927.40
Posture Land	„	2418.00
Land Use in Non Agriculture Purpose	„	2478.00
Waste Land	„	71631.48
Non Agriculture Land	„	86912.00
Cultivable Barren land	„	1751.00

Livestock & Poultry

Cattle (Cows+Buffaloes)	Nos.	562347
Goats	„	642428
Sheep	„	200

Showing Agriculture and livestock details in sitamarhi district.

The main crops of the district are paddy, wheat and Khesari. Besides gram, oil seeds and other pulses are also grown. Marua and Bhadaï paddy are two main Bhadaï crops. Sugar cane is cultivated in about ten thousand hectares of land to feed the only sugar mill of the district namely Riga Sugar factory, Sitamarhi. During the last thirty years due to special Rabi drives, introduction of high yielding varieties and increase in agricultural facilities the area under Rabi cultivation has shown appreciable increase. The area under sugar-cane cultivation has almost doubled compared to what it was about twenty years ago. Livestock is very important in a district like Sitamarhi with a predominantly agricultural economy. The statistics of livestock of the district indicate that the number of cattle is high in the district. The people of the area have not taken to poultry farming on large scale.

Fisheries

Fishery development scheme has been undertaken by the Fisheries Department. The demand for fish is increasing and a number of nursery tanks are in use. The District is encircled by rivers such as the Bagmati, Lakhandai, Lalbakaiya, Adhwara Samuh (Marha, Rato, Jheem, Hardi, Baya), Manusmara, etc. The total area covered by ponds and tanks under government sector is approximately ----- hectare where as private sector its area is nearly ----- hectares. The government sectors Jalkars are settled with the fishermen's cooperative societies functioning in every block of the district. Presently the fisheries department of the state government is able to cater only 25% to 40% of the total demand of the fish of the district.

Industries

The main industries and trade are also agro-based. The important industrial units are the Riga Sugar Mill at Sitamarhi, which have been running since 3 April 1933. The factory has a daily crushing capacity of 850 tons of sugar cane per day and provides employment to about one thousand persons during the crushing season. A number of rice mills are also located in the district. There are 19 big modern rice mills, important among these being Sri Sita Ram Rice and Oils Mills, Bairgania, Sri Janki Rice and Oil Mills, Janakpur Road (Pupri), Sri Lakshmi Rice and oil Mills, Janakpur Road (Pupri), Shri Chaurasia Rice and Oil Mills, Sitamarhi. Besides, about 400 single hullers are distributed all over the district for dehussing paddy. It is a seasonal industry and the labour force mostly comes from the rural population.

Chapter 3 Hazard, Risk, Vulnerability and Capacity Analysis

Sitamarhi district is mainly drained by rivers Bagmati, Lakhandai, Lalbakaiya, Adhwara Samuh (Marha, Rato, Jheem, Hardi, Baya), Manusmara that generally flow in South-eastern direction. However all five rivers and their tributaries are perennial, these rivers are very unpredictable during rainy season of monsoon, these river become very devastating causing flood in this area. Due to this peculiar character, the sedimentation rate during monsoon is very high near the riverbank, which have resulted in the formation of the elevated-up land and gradually decrease away from the river channels.

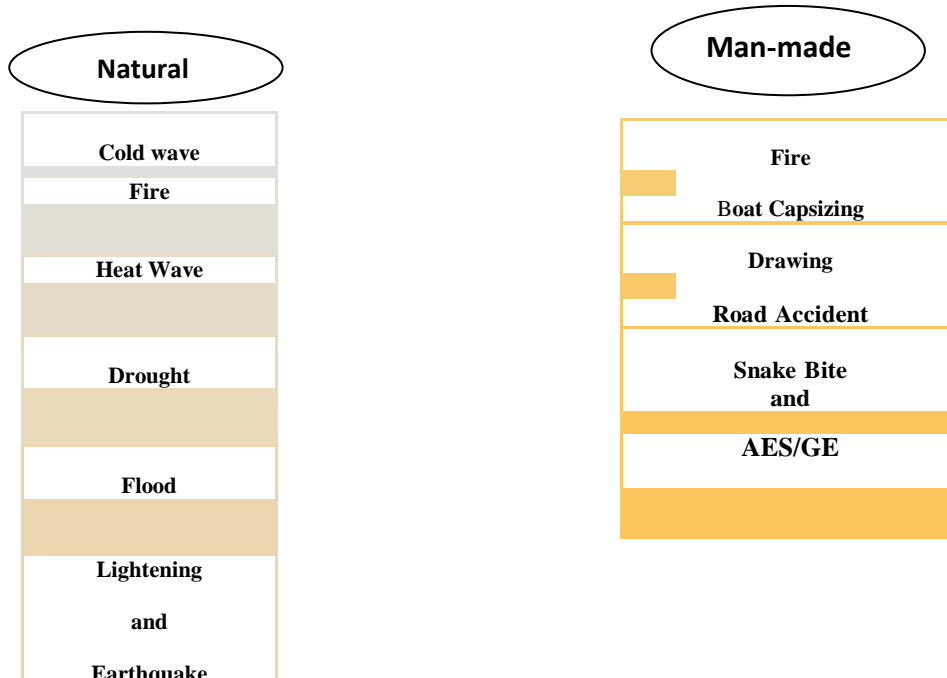
This chapter sheds light on the hazards faced by Sitamarhi with the aim of helping the district administration to better understand how and when these occurrences affect the district. Past disasters and recurrent issues, as well as the climate-induced hazards need increasing attention from the local government. Additionally, is presented a mapping of various hazards a block-wise manner, to allow an easy understanding of the exposure levels of every Panchayat.

HRVCA of the district has been carried out to do a comprehensive analysis of various hazards for all 17 blocks of the district that is having disastrous effect because of prevailing vulnerabilities. It involves figuring out the type of hazards the district is prone to, their history and impact on the area, people and infrastructure that are exposed to these hazards. The vulnerabilities cover various aspects, which include social, infrastructural, economic, environmental, attitudinal behavioural and political, which increase the effect of these hazards. The capability and availability of resources with the district administration and the community reduce the vulnerabilities, which in turn reduces the disaster risks and organizes effective response.

Purpose of the HRVCA

1. Evaluate all hazards, their risk of actual occurrence and their impact on life, property and environment;
2. Identify possible mitigation measures to reduce risk; and
3. Identify list of existing resources for disaster management;

Status of various types of disasters in the district ;



Hazard	Jan	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Blocks
type													
Flood													Runni Saidpur, Pupri, Mejorganj, Belsand, Parsauni, Dumra, Riga, Suppi, Bathnaha, Sonbarsa, Parihar, Sursand, Bajpatti, Choraut, Nanpur, Baigania and Bokhra
Drought													Bairgania, Bajpatti, Bathnaha, Dumra, Nanpur, Parihar, Pupri, Suppi, Sursand
Fire													Bathnaha, Belsand, Dumra, Majorganj, Parsauni, Pupri, Riga, RunniSaidpur, Suppi
Earthquake													All Blocks
Epidemics													Bairgania, Bajpatti, Belsand, Dumra, Majorganj, Parihar, Pupri, RunniSaidpur
Lightening													Runnisaidpur
Road Accident													National Highway 77,

Highly- rated

Normally -rated

Hazard Calendar and Vulnerable Areas

Hazard Profile

Floods:

Occurrences	Reasons	Damages
Every year during monsoon months, i.e., June to September. However, the coverage and extent of damage varies every year depending on the intensity of Rain in North Bihar and Nepal.	Bagmati, Lakhandai, Lalbakaiya, Adhwara Samuh (Marha, Rato, Jheem, Hardi, Baya) 415 km through Sitamarhi district. that generally flow in north-eastern direction. However all five rivers and their tributaries are perennial, these rivers are very unpredictable during rainy season of monsoon, these river become very devastating causing flood in this area. Due to this peculiar character, the sedimentation rate during monsoon is very high near the riverbank, which have resulted in the formation of the elevated-up land.	Floods: Floods/flash floods take every year. Place every year, although, their intensity is variable. Depending on that, the inundation area of the floods also changes. Since 1987 to 2019 total 32 times district affected by major floods.
	Heavy rains in the hilly terrains of Nepal flashes down, as river streams into the plains of Sitamarhi of Bihar causing flash floods in Northern blocks of the district that are closer to Nepal and floods in blocks towards the centre and south of the district.	Soil Erosion and Displacement: It is observed in case of either floods (not flash floods) or soil erosion cutting land of village settlements. However, soil erosion does not always lead to major displacement unless settlements right next to the river course see major erosion. The displacement observed is generally within the panchayats, generally by re-establishing villagers on agricultural lands.
	This overflow of water out of its river course into the agricultural fields or into the villages is also attributed to another factor, i.e., deposition of silt on the river bed. Silt - mud or small rocks - that river carries is created by rubbing of river with the hill stones and as it flows downstream, it continues depositing it into the plains.	Agricultural Productivity: Loss in productivity is observed due to two factors. One, waterlogged fields that rather prevents farmers from doing agriculture. This has also become a major cause of migration in Sitamarhi during monsoon months. Second, mud on the fields after the deposition of water hampers farmland productivity and often turns land useless.
	This over the years has decreased the depth of the riverbed and as a result, lot of riverbed almost level with the land. This becomes the cause of floods even with marginal river water rise. Soil erosion is observed in all blocks of the district that face floods problem. It leads to loss of land to river.	Road Infrastructure: Several roads are affected every year due to floods. Brick soling roads constructed under MNREGA scheme gets easily damaged by floods.

Drought

Occurrences	Reasons	Damages and Loss
<p>Droughts are not sudden disaster but a gradual phenomenon. So far, it is unusual in this part of Bihar. However, the affects can be felt particularly between February to May when water table dips below. The affects are felt in both Kharif and Rabi season in case of a failed monsoon.</p>	<p>In this part, droughts are mostly meteorological in nature owing to where Kharif crop does not receive sufficient rainfall for good production during monsoon season.</p> <p>Meteorological droughts are declared when total rainfall in the monsoon months of June to September is less by more than 25% of the long-term average. In later months, ground water is seen to dip to levels where even drinking water becomes unavailable in several hand pumps at varying depth, apart from unavailability of water for irrigation purpose while rest of the year.</p> <p>In addition, insufficient reach of irrigation channels reduces the irrigation potential and only increase dependency on rain fed agriculture.</p>	<p>Crop failures have been observed, which increases the need for immediate finances and that has often led people to sell cattle. Between 1966 and 2010, Sitamarhi district has experienced drought in the years of 1966, 1970, 1971, 1982, 1992, 2009, 2010.</p> <p>Animal health adversely affected due to insufficient fodder availability or high market prices.</p> <p>Impact on agro based industries : Decrease in agricultural output affects the industry mainstay of Sitamarhi, such as rice and sugar mills.</p>

Fire:

Occurrences	Reasons	Damages
<p>A man-made disaster, it happens every year mostly in the months from March to May.</p>	<p>Houses made of Thatch are very common in the district that makes houses vulnerable to fire. While it is difficult to predict and prevent natural hazards, manmade hazards can be avoided or mitigated through preventive actions</p>	<p>Every year there are many houses burnt in various parts of the district. In 2017, approx. 20 houses, 2 shops and 1 factory were burned due to unidentified reason. Also in Bathnaha, 1 person and nearly 2 lac INR of property were burned due to improper disposal of Fire after cooking dinner. In 2016, Five people including three children died due to severe burn injuries while three others sustained burn injuries in two incidents of fire in Sitamarhi.</p>

	Moreover, owing to high population density, houses are constructed close to each other and dry fodder and dung cakes are stored near the huts. As a result, an outbreak in one house quickly spreads to other houses.	

Showing fire details of Sitamarhi District

Earthquake

Occurrences	Reasons	Damages
Unlike several other hazards, there is no pattern of occurrence of Earthquakes. The last time any major earthquake struck this region was in the year 2015 at around 5.3on Richter scale.	Movement of plates beneath the earth's surface near Indo - Nepal border on the Nepal side.	Sitamarhi lies in seismic Zone-V. There is no specific record of damages and deaths in this region; however communities are ever of consequences of earthquake.

Showing Earthquake details of Sitamarhi District

Boat Capsizing

Occurrences	Reasons	Damages
Every year during monsoon months, i.e., June to September. The accident does take place because few roads get cut off and people need to use the water transport.	The common reasons and causes behind the boat capsizing in Sitamarhi districts are -	July 10, 2004 14 people were feared drowned in the swollen Bagmati river. August 18, 2017 NDRF rescues 15 people as boat capsizes in flood-hit Sitamarhi district in Lakhandei river which had overflow its banks.

	<ol style="list-style-type: none"> 1. Loading passengers beyond capacity of Boats; 2. Weak and damaged boats in use; 3. Unavailability of life saving equipment on boats; 4. Carelessness of boat drivers and passengers. 	

Showing Boat Capsizing details of Sitamarhi District

Snake Bite

Occurrences	Reasons	Damages
Snake bite is unusual occurrence but generally it is found during the starting of monsoon season to ending of winter months.	Because of reduction in the size of green areas, the snake have less place to stay safe and secure. Unawareness of people towards treatment of snake bites, few peoples until believe in exorcism for treating snake bites.	On October 29, 2018 A child died due to snake bite while playing on the terrace in Riga Block ¹⁹
		On July 12, 2019 A person died due to snake bite in Bajpatti block ²⁰
		On July 20, 2019 A Child died due to snake bite

Showing Snake Bite details of Sitamarhi District

AES/JE

Occurrences	Reasons	Damages
AES cases started to appear in april to may, reached peak during june and decline from October. Similar pattern.	Acute Encephalitis Syndrome (AES) also called Japanese Encephalitis (JE) is a multifactorial clinical condition, the most common cause of JE is biting of humans by Culex mosquito which is a vector of JE virus. Sitamarhi is highly prone to JE. Typically the children present with sudden onset, early morning seizures, hypoglycaemia with or without fever. There is ample evidence of its linkage with rainfall and temperature profile change. No evidence of litchi fruit causing it.	The first case of AES in Sitamarhi district was recorded in 2019. There were 06 deaths in 2020.

Showing AES/JE details of Sitamarhi District

Vulnerability and risk analysis

Vulnerability Type	Elements at Risk	Vulnerability	Findings and Root Causes	Remarks	
Infrastructural	Houses	Unsafe Location	<ul style="list-style-type: none"> In some of the cases, it was found that the pucca houses were taken off by the flood waters. Many villages on the riverbanks are prone to land erosion by river during monsoon. Several households in the low- laying areas are prone to water logging, even if not directly situated in course of river. 	The present findings and root causes are from the panchayat s level HRVCA conducted from following blocks and panchayat s	
		Thatched houses	<ul style="list-style-type: none"> Because of frequent floods, people make thatched houses. It then puts them at risk to fire. 		
	Drainage system	Encroachment and blockage of drains and Chauras (Wetlands)	<ul style="list-style-type: none"> Community accepts that insufficient care and encroachment of drainages has only scaled up the problem of flooding and water logging. 	Belsad block-dumra nunau, siropai, dumra, naunaa and daraiur	

	Boats	<ol style="list-style-type: none"> 1. Insufficient Numbers 2. Size 3. Overloading 	<ul style="list-style-type: none"> Insufficient number of boats even for basic purposes and water logging for days make the people most vulnerable for access to even basic amenities. 		
	PHC/APHC/ Health Sub centre	Poor Construction	<ul style="list-style-type: none"> Some of the Health centres are vulnerable to earthquake and heavy floods because of their low construction quality. 	Pupri Block- Bajitpur Bora, Bajitpur Baura, Bairwa, Gangapatti, Shahjahanpur, Gangwara, Keshopur, Bhawanipur, Hariharpur, Chainpur and Temhua	
		Inadequate infrastructure	<ul style="list-style-type: none"> PHC lacks resident doctors, basic infrastructure with instruments 		
		Absence of ANMs	<ul style="list-style-type: none"> ANMs are situated in far of places from the panchayat with no or little more to commute. Thus their visits to panchyats are irregular. 		
	Water Security (Clean drinking water in Sufficient supply)	Unclean water	<ul style="list-style-type: none"> Most personal hand pumps are found to be at the depth of 15 to 40 feet, generally. At this depth, the quality of water is poor for drinking purposes and often visibly so. In discussion with community in different blocks, it was found that the clean drinking water is generally found at the depth of 150 feet. However, this is out of the economic capacity of individual house holds who generally go to the depth of 15 to 40 feet for their individual handpumps. 	Sursand Block- Shrikhandi Bhitta Paschimi, Shrikhandi Bhitta, Shrikhandi bhitta purvi, Bhitta, Bhittabazar,	

		Dysfunctional handpumps	<ul style="list-style-type: none"> Mostly, the government installed handpumps are at the depth of 150 to 200 feet and thereby a source of clean drinking water. However, at least half of the installation are dysfunctional is almost every panchayat visited. 		
		Abandoning use of wells.	<ul style="list-style-type: none"> With handpumps being and easier and quicker way of extracting water, people and village are don't use wells as source of drinking water. 		
	Irrigation	Government boring pumps (stated boring)	<ul style="list-style-type: none"> These are either not installed dysfunctional since many years. As a result, dry lands for irrigating fields follow floods. 		
		Unusable canal channels	<ul style="list-style-type: none"> In some case, the channels are broken down by floods. 		
Social	Community	Resettlement and Rehabilitation	<ul style="list-style-type: none"> With rivers cutting land into the villages due to soli erosion, they are forced to evacuate and relocate their houses 		
		Dependency on Government	<ul style="list-style-type: none"> Community does not collectively maintain common resources like wells, community hand pumps, drainages and thus severely affects everyday living. 		
		Caste favours in implementation of government schemes	<ul style="list-style-type: none"> It was observed that some particular sections of the villages were more developed than others, because that section is in majority of which mukhiya is a member. 		

	Women participation	Women are not seen in meeting and decision making	<ul style="list-style-type: none"> Owing to male orientation and dominance, Women are only called for meetings regarding the government policy of women empowerment by ensuring a certain proportion of elected mukhiyas to women. However, in reality, it is the commonly known 'mukhiyan parties' and not mukhiyas who play the lead role . 		
	Vulnerable caste groups	Greater susceptibility to floods and fire.	<ul style="list-style-type: none"> The Communities like mahadalits or other vulnerable social groups are more often economically weaker and often live in low land making their lives, material and resources more susceptible to flood. Houses are also virtually knitted with one another making them susceptible to greater loss due to fire. 		
Environmental	Drainage System	Water logging	<ul style="list-style-type: none"> Due to the wrong attitude of encroachment of land, traditional drainage streams have ceased to exist today and several chauras (Wetlands) does not exist anymore leading to prolonged water logging and worsened after floods scenario. 		
	Land Erosion	Embankments	<ul style="list-style-type: none"> Demand by community for construction of embankments in their villages on the riverbanks irrespective of understanding its' possible impact on panchayats Most people showed willingness to do bamboo plantation 		

			even on private lands through MGNREGA to prevent land erosion.		
	Sustainability	Common pool of resources	<ul style="list-style-type: none"> Maintenance of local resources like wells, hand pumps are left entirely to government even while they themselves face all the inconvenience. This brings in unsustainability in the installed government infrastructure. 		
	Cooperation and Emergency Interventions	There's no community initiative/ effort for preparedness	<ul style="list-style-type: none"> Lack of interest and awareness along with benefit seeking attitude for taking relief. 		
	Community	Attitude Towards Government	<ul style="list-style-type: none"> People see government as a provider and not as an enabler. As a result, they shun their duties while demanding their rights. 		
Environmental	Agricultural Land	Reduced Agricultural Productivity	<ul style="list-style-type: none"> River Water overflows from its course along with sand on to the agricultural land, thereby reducing productivity or making the land barren. Apart from that some time large agricultural area remains submerged for long duration and making the land uncultivated and unsown. Recently in the monsoon season of 2021 approximately ----- hectares remain unsown and -----hectares of crops was damaged. 		
		Reduction in Land Holding	<ul style="list-style-type: none"> The land holding of the farmer having fields near the river basin are vulnerable to land erosion. 		
	Riverbanks	Land erosion	<ul style="list-style-type: none"> Massive soil erosion is seen on the riverbanks every year cutting villages and reducing land for agriculture. 		

	Sanitation	In spite of great effort and incentives from govts. Many households still don't have sanitation facilities	<ul style="list-style-type: none"> Improper utilization of funds, poor construction by NGOs, lack of interest and awareness among masses. 		
	Environment	pollution	<ul style="list-style-type: none"> Sugar mill emits untreated waste into rivers. It is resulting in death of water bodies such as fishes, directly impacting the livelihoods of fishing community. 		
Economic	Crops	Crop failure	<ul style="list-style-type: none"> Due to flooding of fields, the crop output is diminished, particularly when water stagnates for longer periods. Sometimes, with the rush of water, crops are even washed away. Floods also bring sand mud (balu mitti) which severely damages the fertile agricultural land and leaving it barren. Non functional electricity-powered pumps leads to further reduced irrigation potential. 		
	Poverty	Low per Capita income, savings and emergency preparedness	<ul style="list-style-type: none"> Destruction of crops and lands by annual flooding and lack of sufficient livelihood opportunities. 		
	Domestic Animals	Animal deaths during floods and fire	<ul style="list-style-type: none"> Often, the animals are washed away, especially in flash flood areas leading to loss of lives of animals and livelihoods for households. Fire situations often lead to burning down of animals as they are mostly tied in condition 		
	Manual Labour	Closure/ Reduction of MGNR EGA labour work during floods	<ul style="list-style-type: none"> The number of people getting jobs as labourers within the panchayats is reduced during monsoon season. 		

Vulnerability and Risk Analysis of Sitamarhi District

Capacity analysis

This section includes an assessment of both vulnerabilities and capacities within the line departments. As part of the process, a number of consultations were held with several line departments on one-to-one basis. The exercise revealed the existing capacity of line departments to emergency in terms of trained manpower, equipment and resources.

Capacities and resources analysis should highlight the capability and availability of resources with the district administration and stakeholders to reduce disaster risk and to organize effective response. Capacities could be policies, institutions, equipment, early warning, and trained human resources to handle variety of responses and coordination functions, financial resources that the district stakeholders have for disaster risk management. Following are the details of Key equipment, resources and infrastructure available in the Sitamarhi District.

1. District Disaster Management Authority (DDMA)
2. Police
3. Fire
4. District Emergency Operations Centre (DEOC)
5. State Disaster Response Force (SDRF Sitamarhi 2 Company)
6. District Supply Office
7. Community Based Organizations (CBOs)
8. Panchyati Raj Institutions (PRIs)
9. Line Departments – Health, Education, PWD, DSO, Agriculture, Animal Husbandry, Energy etc

Their roles in prevention, mitigation and preparedness measures are described in detail disaster wise in the subsequent chapters.

Capacity of the District

Hospitals	Figures
Sadar Hospital	1
PHC	17
Electricity - Simra Dumra NBPDC	1
Police Stations	21
Fire Station	1
Fire Tenders /Fire fighters	15 /15
Education	
Colleges	12
Schools	2717
Blood Bank	1 (Sadar Hospital)
Bank	10
Road	
NH	NH 104, Sitamarhi-Bhitthamore Road
SH	SH-52, Sitamarhi-Pupri Road
Head Post Office, Dumra	1
Municipalities (ULBs)	5
Vet Hospitals	33
Trained Engineers/Masons for Earthquake Safety	100 /876
SDRF	SDRF Company Sitamarhi 2
BSDRN	Resource Data
Search & Rescue equipments	86
Skilled Manpower	37
Transportation	147
Food & Water Sources	136
Safety & Shelter	167
Emergency Supplies & services	18

Chapter- 4 Institutional Arrangement

The Disaster Management Act, 2005 lays down institutional and coordination mechanisms for effective Disaster Management (DM) at the national, state, and district levels. A multi-tiered institutional system consisting of the National Disaster Management Authority (NDMA) headed by the Prime Minister, the State Disaster Management Authorities (SDMA) by the Chief Ministers and the District Disaster Management Authorities (DDMA), by the District Collectors and co-chaired by the elected representatives of the local authorities of the respective districts.

These bodies have been set up to facilitate the paradigm shift from the hitherto relief-centric approach to a more proactive, holistic and integrated approach of strengthening disaster preparedness, mitigation and emergency response.

District Disaster Management Authority

As per section 25 (3) of the Act, where there is a Jilla Parishad in the district, the Chairperson there of shall be the co-Chairperson of the District Authority, Section 25 (4) states that an officer not below the rank of Additional District Magistrate or Additional Deputy Commissioner as the Chief Executive Officer of the District Authority for exercising the powers and perform functions prescribed by the State Government or designated by the District Authority. The DDMA may meet when necessary with time and place selected by the Chairperson.

Under section 28 District Authority as and when considers necessary, constitute one or more advisory committees and other committees for the efficient discharge of its function and appoint from amongst its members the Chairperson of the committee formed and any person associated with the committee or sub - committee will be paid allowances as may be prescribed by the State Government.

District Disaster Management Authority Members.

Sr. No	Officer	Designation
1	District Magistrate	Chairman
2	Chairman Jilla Parisad	Co-Chairman
3	Superintendent of Police	Member
4	Deputy Development Commissioner	Member
5	Civil Surgeon	Member
6	Additional District Magistrate	Member
7	Executive Engineer (Most Senior)	Member

Showing Sitamarhi District Disaster Management Authority

Power and functions of DDMA.

The role and responsibilities of the DDMA are stated in section 30 of the DM acts, 2005. The DDMA will act as the planning, coordinating and the implementing body for DM at the district level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA. It will prepare the District DM plan for the District and monitor the implementation of the National policy, the State policy, the national plan, the state plan and the District plan.

Panchayati Raj Institution

In the Bihar State Disaster Risk Reduction Roadmap, one special component is also focusing on "Safer Village", which describes detailed role and responsibility of PRIs in preparing and implementing a Village Level Disaster Management Plan.

Bihar State Disaster Risk Reduction Roadmap-2030 is focusing making "disaster resilient village", as

it also become more important to aware, sensitise, training and include PRIs in Disaster risk management process. Bihar State Disaster Management Authority is also providing training to Mukhiyas and Sarpanch on Disaster Management and Disaster Risk Reduction with the objective of involving local panchayats in local level disaster management planning and risk reduction.

Phase	Role of PRIs
Pre Disaster	Organising awareness campaign and promoting community education on disaster preparedness.
	Incorporating community need for developing preparedness plan through community involvement and Panchayat ownership.
	Identifying the resource gaps both physical and manpower and replenish the same Through capacity building.
	Establishing synergy with local agencies including NGOs/ eBOs.
	Dovetailing Risk Reduction into various development programs of national and state governments.
	Encouraging people to insure their assets and livestock.
	Establishing convergence with local institutional structures created for implementing education, health, livelihood, and social justice and so on.
	Activating the DM Plans with the participation of the community.
	Formation of Task forces and their capacity building.
During Disaster	Arranging emergency communication through available resources.
	Evacuation to temporary shelter and running relief camps.
	Supplementing rescue and relief efforts in coordinating different agencies.
	Monitoring of Relief distribution.
	Safe disposal of carcass and arranging safe drinking water and sanitation.
Post Disaster	Damage assessment particularly assisting in identifying victims for compensation and its distribution.
	Formulating rehabilitation and reconstruction plan of houses and other local infrastructures.
	Enforcing minimum specification for safe reconstruction.
	Supervising and monitoring long-term reconstruction and mitigation projects.
	Mobilising special funds to use disaster resistant construction technology in vulnerable areas.

Role of Panchayat Raj Institution

Community Based Organisations

The Community based Organisations (CBOs) are the most effective means of achieving an efficient communication link between the disaster management agencies and the affected community. There are different types of CBOs working at the advocacy as well as the grass roots levels. In typical disaster situations, they could be of help in preparedness, relief and rescue, rehabilitation and reconstruction and in monitoring and feedback. If the potential of CBOs is utilised in the right earnest, they could act as the key to a successful and participatory approach to disaster management. Following are the key local CBOs in Sitamarhi.

<https://bihar.ngosindia.com/category/sitamarhi-ngos/>

Name	Address	Aim and Working area
Sitamarhi Lok Seva Sansthan	Jafarpur, Block-Belsand Sitamarhi Pin: 843316	Aim/Objective/Mission: To provide education, employment, health and all other rights for helpless and needy people.
Swami Vivekanand Welfare Society	Chikna, Janakpur Road Sitamarhi Pin: 843320 Bihar Contact Person: Dr. Nirala Prasad	SVWS is dedicated in uplifting weaker sections and downtrodden people of the society. It has been running job oriented vocational training courses for the youth. The society is conducting 3-unit Rajiv Gandhi national creche scheme with the fund received from Bihar state social welfare board. Each year 75 children belong to backward classes and SC is being benefited. All these children belong to the families living below poverty line.

Bihar Gram Vikas Parisad	Manikpur Musaharnia, Andauli	The organisation aims to develop a society where everyone has equal rights. The main
	Sitamarhi Pin: 843324 Bihar	objective of this organisation is to uplift underprivileged through improvement in the health, education and economic status.
	Contact Person: Ram Chandra Rai	
SOSO - Society of Social Opinion	Bariyarpur, Sitamarhi Sitamarhi Pin: 843302 Bihar Contact Person: Raghwendra Singh	Education, health, environment, women empowerment.
Lokhit Seva Sansthan	Bhavdeopur, Got Sitamarhi	To encourage people to contribute in nations progress and be part of it.
	Pin: 843302	
	Bihar	
	Contact Person: Anamika Singh	
Janseva National Social and Welfare Organisation	Rajopatti, Sitamarhi Sitamarhi Pin: 843301 Bihar Contact Person: Pradeep Sinha	Our objective to contribute to build a healthy, educated strengthens society, in concentrated view we are working HIV/Aids, for education of marginal group of children and for socio-economic development of rural area.

Community Based Organizations Aim and Working Area

Following are key major roles of community-based organisations in disaster management:

Pre-disaster	Awareness and Information campaigns Training of Volunteers Advocacy and planning
During-Disaster	Immediate rescue and first-aid including psychological aid, supply of food, water, medicines, and other emergency material Ensuring sanitation and hygiene Damage Assessment
Post Disasters	Technical and material aid in reconstruction Assistance in seeking financial aid monitoring

Major Roles of Community based Organizations

District Emergency Operation Centres:-

In case of activation of the EOC, the Incident Commander needs to come to the EOC. The emergency Support Function coordinators also need to come to the EOC for proper response. Give Special emphasis to communication and database equipment. The EOCs Should have a radio system, a media interface emergency broadcast system, mobile communication van and mobile command centre to which essential functions can be transferred immediately in an emergency, if necessary. In case of a catastrophic incident, helicopter surveillance facility should be available. There has to be a seamless, robustness and inbuilt redundancy in the equipment so that in case of failure, replacement is possible, thereby increasing the reliability. A public emergency call system is also necessary. The EOC should have facilities to telecast/broadcast warnings to the public without the intervention of the public or private controlled TV channels or Radio Stations. All district EOCs should be equipped to trigger public warning sirens. Runners, traditional percussionists (suno, suno, sunoo), vehicle mounted public address system and public address system used for namaz by mosques may also be used for warning.

The EOCs may be equipped to make reverse emergency calls and send SMS messages on the cell phones in the district. It was recommended that the district alternative EOC should have at least basic minimum functionality for responding to disasters. The district alternates EOC for district and the state as a whole was suggested for setting up at the Centre for Disaster Management, A list of equipment with priorities needs to be suggested for procurement in the first phase.

1. On receipt of information (either from National or State Emergency Operation Centres, early warning agencies, or field functionaries of sub-divisions or blocks), the District Emergency Operation Centre has to be activated fully as per laid down protocol.
2. The District Emergency Operation Centre issues alerts/warnings to all designated authorities at district, sub-division and block level and elected representatives at the panchayat level
a) District Magistrate
b) Incidence Response System – DM as Incident Commander
c) Line departments- Health, Police, Fire, Agriculture, Energy, Education etc
d) Members of the District Disaster Management Authority
e) Health centres at the disaster site
f) District Emergency Operation Centre in nearby districts
g) State Emergency Operation Centre and State Disaster Management Authority
h) Member of Legislative Assembly and Member of Parliament of affected areas
3. The District Emergency Operation Centre sends the report (as previously detailed) to the State and National Emergency Operation Centres. Thereafter, daily reports are sent until situation normalizes. Daily situation Report is prepared and shared by them.
4. The District Emergency Operation Centre collects all relevant information and appraises the status to designated decision-making authorities.
5. The District Emergency Operation Centre is responsible to maintain all records and documents such as call log, maintain records of information received from field as well as various authorities related to the response.
6. Finally, the District Emergency Operation Centre constantly communicates with any Mobile Emergency Operation Centre or similar and the Incident Commander as per Incidence Response System.
7. National Disaster Response Force (NDRF)- There is no company of NDRF stationed in Sitamarhi. In times of emergency response, they can be called from nearby district Supaul.
8. Police- The Police force are always ready to respond to different disasters. They are always pressed into service as a first responder. During festivals , they are in high alert mode to deal with any disasters like stampede, terrorism, accidents etc apart from routine policing.
9. SDRF – A company of SDRF Sitamarhi 2 is stationed in the district which is pressed into service for emergency response. Also during festivals, they carry out patrolling activities at ghats.
10. Fire – District Fire Office is well equipped to deal with fire emergency. They have trained personnel who are involved with dousing fire and they have done commendable job in the past and always ready to respond.
11. Health -Hospitals Facilities, Doctors & Paramedics are always ready to respond to any disaster situation. They worked very hard during the recent Covid situation.
12. District Supply Office- During disasters, they distribute free rations to the affected families till normalcy is restored

Chapter 5 Prevention, Mitigation and Preparedness Measures

The multi-disaster prone state of Bihar requires a multi-disciplinary approach to deal with these disasters requiring participation of various stakeholders, as almost 76% out of the total land is vulnerable to one or the other hazard. It requires a continuous and integrated process of planning, organising, coordinating and implementing measures that are necessary for risk prevention, mitigation of risk impacts, preparing to face the disaster event, response, rehabilitation and reconstruction.

The Disaster Management Act, 2005 lays down institutional, legal, financial and coordination mechanisms at the national, state, district and local levels. These institutions will work in close harmony. The new institutional framework will bring in a paradigm shift in DM from a relief- centric approach to a proactive regime that lays greater emphasis on preparedness, prevention and mitigation.

Prevention and mitigation strategies should work towards reducing the financial and social costs to communities over time, improving the built environment, and reducing the impact, and damage to the environment. Investment in disaster risk prevention and reduction enhances the economic, social, health and cultural resilience of people, communities, countries and their assets, as well as the environment.

The effective prevention of disaster events includes multiple strategies to reduce or remove the impact of hazards and increase the resilience of the community. Disaster managers at all levels of disaster management arrangements are responsible for using a proven risk management process to identify prevention and mitigation options.

All mitigation measures are important as they save lives and reduce the cost of response to and recovery of the community.

Key functions of departments/ agencies

Preparation and Implementation of District Disaster Management Plan is a joint and collective task. Various stakeholders like Panchayati Raj Institute, Government Line Department, Disaster Management Authority, Community Organisation and other private and public organisations are responsible to prepare and implement the DDMP.

Department	Preparedness	Prevention	Mitigation
DDMA	Bring the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation.	Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the concerned Departments.	Ensure implementation of guidelines for prevention of disasters and mitigation of its effects.
Education	Incorporate disaster management education in the curriculum of students	Construct disaster resilient schools	Support DDMA for educating PRIs and local communities on disaster management
Health	Identify community resources applicable to the physical, social, and psychosocial Effects of a disaster and educate/ train community on emergency and medical grounds.	Prevent the spread of diseases by providing health advisories on injury prevention, food and water safety, and vector control	Develop and advocate public policies designed to reduce the public health impact of potential disasters
Police	Conduct and plan the Emergency Traffic, Detail communication, Identify Security Plan, Resource Mapping, and Training of volunteers.	Communication Plan/ Liaoning with rescue teams	Ensure on time execution of preparedness activities
Public works department	Maintain the departmental equipment, position of approach roads and other roads fit of all the villages and periodically inspect the buildings, residences and high-rise buildings under their control control to avoid any mishappening..	Strictly observe and guarantee that the building byelaws and rules are implemented during the construction regarding disaster resilient construction.	Identify the disaster vulnerable locations and enforce disaster resilient constructions

Municipal administration	Extensive data collection, maintain directories of resources, develop action plans, capacity building, training and community awareness Activities and Articulate the Command Structure for effective management of activities that immediately follow the disaster.	Examine construction in the area and if hazard safety standards have not been followed, direct the relevant entities to secure compliance of such standards and include maintenance of early warning system, identification of buildings to be used as evacuation sites, stockpiling relief and rescue materials and identify alternative means for emergency communication	Promote and support research, development of new technologies and the use of local knowledge in measures that aim at supporting risk reduction.
Fire and emergency services	Orientation and training of village-wise volunteers and communities, provide security in emergencies and be available where support services are required e.g. carrying of the injured, identification of the dead, keeping record of the same and handing over of the dead bodies to relatives etc.	Organize inspection of the building and sending inspection report for fire safety with recommendations to the concerned authorities and with a copy to BSDMA & DMD for necessary action.	Enforce fire related measures in the existing buildings, Specifically Govt., multistoried and other strategic ones.
Community Based Organisation	Awareness and Information campaigns Training of Volunteers Advocacy and planning	Conduct and implement projects and activities of disaster prevention	Strengthen the non-structural elements of all disasters through training and capacity building

Showing Departments/ Agencies of Sitamarhi District

Disaster wise functions of departments /agencies

1. Flood			
Department	Preparedness	Prevention	Mitigation
DDMA	<p>Review/follow-up with departments about the flood preparedness/repair/maintenance activities and compile data for flood response</p> <ul style="list-style-type: none"> - Repair of rain gauge at block headquarters - Sending rainfall data to SDM and DM - Identification of flood vulnerable panchayats - Ensure availability of government and private boats - Ensure availability of Generators, Tents and pump set - Ensure sufficient storage of food storage houses - Ensure sufficient storage of polythene - Formation of panchayat wise search and rescue team - Identification of safe shelter for community 	<p>Strengthen and sensitize Zonal Flood Committees. Remove encroachment along the riverbanks/ tributaries</p>	<p>Recognize the importance of human resource development and build capacity for effective disaster mitigation, the State will take appropriate steps to develop training curriculum for officials in all sectors at all levels. Strengthening and Upgradation of existing flood forecasting system</p>

Agriculture Department	Identify and appoint responsible persons at district, block and panchayat level for early warning dissemination	Ensure availability of Disaster Management Committee and Funds in the department	Undertake analysis of the disaster risks to certain existing and potential livelihood clusters (like Litchi, Cotton, Silk, Agarbatti, Vegetable, Maize, Makhana, Dairy, Madhubani Painting, Leather, Fishery, Poultry, and such) within Bihar with participation of Community level stakeholders including especially at-risk communities.
	Assessment of available resources and buildings at district, division, block as well as panchayat and village level (Godowns, KVK etc.)	Maintain coordination with KVC/Agriculture Universities and other important organisation to identify various ways to improve cropping.	Encourage Kitchen Gardening
	Repair and maintain the equipment and buildings with respect to floods	Encourage water resilient agriculture in flood vulnerable areas with the help of KVK	Undertake widespread promotion and distribution of these short duration / stress resilient seed varieties in all villages
	To reduce flood impact, connect vulnerable groups with flood safety bill	Encourage water resilient agriculture in flood vulnerable areas Cultivation of varieties Rajendra Mahsuri, Rajendra Sweta and Swarna in flood prone and submergence areas	Disseminate weather forecast to district, division, block, panchayat and village level stakeholders
	Encourage price for main crops of the district i.e. Litchi, Mung etc.		Ensure clearance of water drainages in the district with the help of responsible departments
	Prepare proposal for assessment of existing and required (need) resources and equipment and their maintenance		Connect farmers with Bihar state farmer support scheme

	Ensure availability of required resources based on the assessment (electricity, fertilizers, chemicals etc.)		Promote cash crops based on geographical situation
	Ensure installation and maintenance of weather forecast related equipment at village level		Encourage flood resilient crops in vulnerable areas
	Ensure that the weather forecasts reach to the farmers, as it will minimize their risks.		Ensure proper coordination with revue department for the damage and need assessment for quick relief for the farmers
	Connect farmers with agriculture expert/advisor at panchayat/community Level		Prepare farmer-wise data in the situation of disaster
	Establish latest communication and public information system for disseminating information related with agriculture insurance, agriculture equipment, information related with quicker recovery from disasters etc.		Establish proper coordination for draining water from agriculture field with relevant department
	Implementation of tree plantation schemes (Water Resilient Trees)		Ensure convergence of MGNREGA schemes for draining water from agricultural fields
	For protection of embankments, shelters, roads, villages etc. organize tree plantation programme		On the basis of need assessment, prepare short, medium and long term plan to ensure availability of equipment
Animal Husbandry Department and Fisheries Department	Establish and practice protocols for Early Warning approval and dissemination.	Establish Animal Emergency Operation Centre at District, subdivision and block level	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine Work

	Check vaccination before seasonal disasters, such as floods.	Prepare an emergency animal evacuation plan	
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk. Check supply of life saving vaccines in advance and store them safely.	Chlorination of water sources/ Ponds/ Puddle etc. Protection of water from contamination of polluted waters from various sources	
	Identify the safe place in the Panchayat with the help of community and field staff of the department.		
	Fodder storage at safe places. Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
	Renovation of the fishponds	Development of flood safe ponds and restoration of ponds in vulnerable areas	Awareness generation and capacity building trainings of key line department officials
	Ensure that the protection has been provided to the fishponds - Stockpile and pre-position other necessary repairing material at vulnerable locations for the immediate repairs.		on various aspects of disaster and incorporation of disaster resilience work in the routine work. Bring awareness among the departmental staff, communities and the key stakeholders
Police Department	Appoint nodal officer for disaster management at EOC	Develop strategies for short term and long term damage assessment	
	Develop action plan for the most vulnerable panchayats and divide area base response accordingly.	Help the community to recover from flood damages.	

	Identify the capacity of the department and develop more advanced capacity for swimming Keep ready wireless communication in case of any emergency	Update the available resource on SDRN portal Procure of new required equipment and maintenance of existing equipment	
	Conduct regular mock drills at district, division and block level for preparation related with floods	All the new constructions should be resilient to floods and earthquakes	
	Give regular training to staff on First Aid, Search and Rescue for effective capacity building		
Bharat Sanchar Nigam Limited	Standby arrangements for temporary electric supply or generators Establish Mass Messaging services and inform the society on weather forecast and early warnings Send alert messages during emergencies. Location of equipment, wires at safe places to rectify the technical problems in time.	Strengthen early warning and dissemination system area wise and disaster wise	Establish emergency restoration mechanism and contingency fund for emergencies. Prepare action plan for emergency electric supply
	Monitor and safe guard the line department's telecom infrastructure in flood vulnerable locations/ area		
Public Works Dept. (PWD roads)	Arrangement of extra vehicles/ heavy equipment, such as frontend loaders, towing vehicles, earth moving equipment, cranes etc.	Installation of rain gauge at block headquarters	Spatial planning (flood risk adapted land use); building regulation and improvement of building flood resistance (wet-proofing and dry-proofing)

	Ensure that there is sufficient stock of construction material in disaster prone areas. Also, there is availability of preventive measures	Strengthen/ repair the existing roads and bridges and other critical infrastructure in flood plains	Prepare budget for damaged houses and roads
	Inspection and emergency repair for roads, road bridges, underwater inspection /piers/concrete and steel work.		Ensure quick repairing of damage roads to start communication
	Identify the buildings that are vulnerable to flood, earthquake, water logging and developing the plan to avoid any damage to the building.		Prepare proposal by conducting damage assessment of own building with help of other technical department
	Identify the safe building (govt.) in the panchayat and block. The safe places are “safe” as per the disasters (flood, earthquake).		Ensure all the bridges in the district are earthquake and flood resilient
	Prepare list of available equipment and update on SDRN website		Suggest and publish speed limits of vehicle near residential areas to minimise road accident risk
	Prepare alternative route maps to support search and rescue work in affected areas		Ensure proper lights and display of signs near railway crossing to reduce accidents
	Formulate Departmental Disaster Management Committees to address disaster management related issues in department		
	Display signs for road safety		
Education Department	Leave open space for emergency construction of sheds etc. to the extent possible.	Select a site for the construction of school building, keeping in mind the appropriate levels of flooding water.	Conduct Safety audits including school safety, electric safety and food safety Awareness generation and developing School DM Plans. Implement Safe Saturday programme in all school

	Appoint nodal person for disaster management related activities	Provide life jackets and rescue related equipment in schools in flood prone areas	Provide support to relief and rescue teams
	Construction of High raised hand pumps in flood vulnerable schools	Preparation of School level disaster management teams and provide proper training to teams	Ensure proper functioning of Mid- Day Meal during flood situation
	Training and capacity building of Teachers and Students on disaster management with the help of district administration		Provide support in conducting damage assessment at local level
	Provide new school dresses and books to flood affected children		Ensure quick and normal functioning of school after disaster
	Ensure time to time communication with DEOC		Provide psycho-social care to disaster affected children
	Ensure availability of sufficient funds while constricting schools in flood vulnerable area		Put best effort to get proper funds for repairing of damaged school buildings
	Include disaster management related topics in school curriculum		Link all developmental tasks with DRR
	Provide MSSP (disaster management) related training to schools through the help of BSDMA		Consider all local hazards and risk while preparing all development plans
Electricity Department	Establish and mock exercises protocols for Early Warning approval and dissemination.	Install high raised polls and good quality wires in vulnerable areas	Establish underground wire installation in new developing areas
	Identify and assess power-generating units at the panchayat level, block level and district level.	Ensure 24 hr electricity supply on special occasions and establish control rooms	
	Promote the schemes on non-conventional energy sources.		

	The department must identify the power units, which are located in disaster prone areas, arrange proper route connectivity for relief, emergency logistics, and provide alternate connectivity to reduce damage.		
	Based on recent or past emergencies, the department should frame an outline of future action plan including disaster risk reduction preventive measurements.		
Fire and Emergency services	Collect prior information from road construction department on list and places of are on diversions and maintenance	Enforce fire safety standards	Organize awareness campaign regarding safety measures for incidents. Conduct regular drills. Enhance firefighting capabilities
	Assess the vulnerable points in the infrastructure, especially in hazard prone industries and take measures like timely repairs etc.	Ensure and identify fire emergency evacuation plans for major government offices, hospitals, Primary health Centre etc.	Create awareness among community how to prevent fire and safety during fire. Also in the agriculture field
	Maintenance of firefighting equipment etc. and installation of fire alarm and water pumps like hydraulics, sprinklers etc.	Establish proper coordination with the concerned department and affected families in case of gas leakage and burn during preparation	
	Scope the budget for the maintenance of firefighting equipment and structural measures etc. under different categories.		
	Protect the life and property from firebreak and other		

	disasters like flood.		
	Promotion of fire safety standards		
	Ensure proper storage of fire extinguishing material for responding any emergency by conducting assessment of private and public fire safety		
	Deputation of Nodal officer from fire department at DDMA/EOC		
Health Department	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.	<p>Establish and practice protocols for Early Warning approval and dissemination.</p> <ul style="list-style-type: none"> - Prepare Block- wise risk- profile of epidemic prone diseases. - Map the areas with emergence of multi-drug resistant bacteria. 	Provide functional isolation wards in all tertiary hospitals and labs which could diagnose all the rare pathogens and their Characteristics including bio-terrorism agents.
	Ensure effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through the district health plan.		Keep proper vigilance on flood affected areas to ensure disease prevention
	Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene and nutrition.		PHC and CHC should have their own emergency evacuation plan

	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		Ensure proper coordination with respective department for relief to snake bite victims
	Conduct regular training and awareness generation of frontline workers like Anganwadi worker, ANM, Mamta etc. on different characteristics and required medication of different diseases		Ensure availability of Generators in all hospitals
	Ensure availability of common medicines for water borne disease, skin related diseases etc Including medicine for the livestock at all hospitals and sub centres		Prepare pocket hand book for Asha workers to respond in floods
	Prepare roadmap to reach out flood affected villages in emergency		Prepare list of Private and government clinics to ensure better response in floods
	Awareness generation and capacity building on health and hygiene in all flood vulnerable locations		Ensure functioning of all available communication setup during floods
Civil Defense	District based training center for the training of the civil defense volunteers		Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work (Bihar DRR Roadmap 2015)
	There should be arrangement of proper mess for the preparation of food		

Water resources Department	Improve the tube well facilities so that people's overdependence on the monsoon reduces.	Fortify weak embankments and vulnerable points in canals/ rivers during free flood monsoon.	Improvement of design for irrigation and flood protective structures. Ensure Channel improvement. Ensure flood proofing.
	Establish flood station to know water level and velocity of water of major rivers	Ensure maintenance and cleaning of Canals, bridges, small irrigation canals for quick evacuation of water	Develop strategies for continuous monitoring of embankments, canals etc. with local people
	Develop and implement disaster management plan for vulnerable locations	Ensure repairing and maintenance of Motor boats	Conduct damage assessment and prepare proposal for required things so that effective and quick response can be received
	Taking regular picture of water velocity with the use of drones so the effective preparation measure can be taken up	Conduct assessment of action taken during emergency and	
		identified gaps should be incorporated and addressed in the future action plan	
	Weather related forecast should be shared regularly with the DDMA and other important stakeholders		
	Prepare list of private contractors for emergency assistance		
Public Health Engineering Department	Floods in this district really need to be taken care of. At the same time, we also need to look at poverty and illiteracy, which is prevailing in this District.	Improve drinking water supply system and sanitation structures.	Improvement of design for water sources and water supply protective structures. Ensure water supply Channel improvement. Ensure flood proofing.
	Establish and practice protocols for Early Warning approval and dissemination.	Strengthen the public health institutes, surveillance system and	

	Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching powder in the relief camps/shelters in disaster probable areas.	epidemiology department.	
	Establish a contingency fund in the department.		
	The Department must try to construct hazard specific sanitation so that the available services are used in a proper manner.		
	Ensure availability of Pipe water supply, earthquake and fire resilient houses with toilets (User friendly for Divyang and aged people)		Use of bleaching powder and chlorine tables to provide clean drinking water
	Construction of new water taps to ensure clean drinking water supply at vulnerable locations		Repairing and maintenance of damaged water sources
	Organize proper facilities to provide clean drinking water in relief camps		Documentation of lesson learnt for the best use in future
	Construct high raised toilets and hand pumps		
	Construct community level separate toilets for Gents and ladies		
	Ensure proper maintenance of available equipment		
	In case water supply is unable to reach the relief camps, provide clean water through water bottles		
	Distribute chlorine tables and bleaching power to Anganwadi and Asha workers		
	Conduct quarterly review regarding proper storage of bleaching power and chlorine tablets		

	Provide mobile toilets facilities to disaster affected areas		
	Provide clean drinking water supply in floods, establish proper prior coordination with Central water commission		
Building Construction Department (PWD)	Look for the areas, which get water inundated, flood affected most of the time. There is a need of proper infrastructure in those areas.	Strict implementation of work regulations. Strict adherence to fire safety standards in all buildings.	Carry out structural safety inspection/audit
	Prepare list of all available and working equipment with the department	Ensure proper monitoring and repairing of all key structures	
	Tag dilapidated building as “Abandon” Identify safe shelter in the district		
	Ensure proper functioning of all communication devices		
	Awareness generation on disaster resilient building among all community members		
	Training and Capacity building of all mason on earthquake and disaster resilient construction		
	Establish proper communication channels with Disaster Management Authority for timely inputs on weak buildings		
Women development and child welfare department	Structure should be made stronger for the Anganwadi centers		
	Try to make reach easy, especially during disasters like Flood.		
District Rural Development Agency	The use of flood resistant techniques/ structures in the	Restrict the construction near / along water way	Spatial planning (flood risk adapted land use); building regulation and improvement of

(DRDA)	construction of roads, community center, rural building etc. Guide and help the DM committees in developing the disaster management plan. Capacity building of community in the rural areas regarding DRR.		building flood resistance (wet-proofing and dry-proofing)
	Allocate separate fund for disaster management, so that the essential reconstruction work can be started early after any emergency.	Mainstreaming MGNREGA with DRR in vulnerable areas	
	Define standards/ benchmarks to measure department's performance on		
	risk reduction activities and emergency response capacities.		
	Ensure that food supplies are safe from any adulteration, secured from damages, and poisoning.		
Food Corporation	Coordinate with Supply Department to ensure that all safety measures are in place for proper storage, transportation and distribution of supplies.		Procure ration in advance at various micro-zones in sufficient quantity before the onset of monsoon.
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk. (Bihar DRR Roadmap 2015)		Provide food grains as per revised price to the affected communities

	Coordinate with the Supply Department to ensure enough food and other necessary supplies are available in disaster prone areas.		Connect affected people with Shatable Ann Kalash Yojana
	Ensure availability of at-least one spacious godown in each block to keep enough food and necessary supplies.		Ensure repair and maintenance of Godowns
	Department should conduct assessment of existing and required resources and ensure availability/procurement with lowest price Ensure proper storage of Dry foods		
	For availability of relief material at reasonable prices, create proper contract with bulk suppliers		
Municipal Corporation	Ensure that solid water management is functional Maintain and clean Drainages regularly Provide clean drinking water	Removal of encroachment from riverbanks/tributaries	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and
		Establish infrastructure for flood warning and dissemination	incorporation of disaster resilience work in the routine work
	Conduct hazard, vulnerability and capacity analysis in urban areas	Ensure life line buildings and key infrastructure are resilient to floods	
	Develop and prepare ward level disaster management plans and constitute disaster management committees	Ensure new constructions are disaster resilient	
	Address disaster risk related issues in vulnerable areas with participation of local		

	people and other stakeholders		
Water resources Department	Assess the vulnerable points in the infrastructure, especially embankments and take measures like timely repairs etc.	Construct emergency flood ways and river diversions	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.	Construct flood protection wall, flood diverting channels etc.	
	Scope the budget for the maintenance of embankments, sluice gates, lock gates etc. under different categories.	Construction of barrages on the banks of rivers.	
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Periodically inspect the embankments for cracks, holes and other potential wear and tear.		
Panchayati Raj Department	Constitute Disaster Management Cell in Department and provide special funds for disaster management related activities		Provide support in disaster damage assessment
	Appoint nodal person for disaster management related communication with DEOC		Provide livelihood support to disaster affected people
	For disaster risk reduction at village level, prepare village level disaster management plans		Provide support in repairing and constructing of new building in affected area

	Identify nonfunctioning of Hand pumps and ensure their repairing and functioning		Based on damage assessment, prepare short and long term disaster recovery plan
	Identify panchayat level boat operator and prepare their list		Ensure participation of disaster affected people in village
		flood warning and dissemination	incorporation of disaster resilience work in the routine work
	Conduct hazard, vulnerability and capacity analysis in urban areas	Ensure life line buildings and key infrastructure are resilient to floods	
	Develop and prepare ward level disaster management plans and constitute disaster management committees	Ensure new constructions are disaster resilient	
	Address disaster risk related issues in vulnerable areas with participation of local people and other stakeholders		
Water resources Department	Assess the vulnerable points in the infrastructure, especially embankments and take measures like timely repairs etc.	Construct emergency flood ways and river diversions	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.	Construct flood protection wall, flood diverting channels etc.	
	Scope the budget for the maintenance of embankments, sluice gates, lock gates etc. under different categories.	Construction of barrages on the banks of rivers.	
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		

	Periodically inspect the embankments for cracks, holes and other potential wear and tear.		
Panchayati Raj Department	Constitute Disaster Management Cell in Department and provide special funds for disaster management related activities		Provide support in disaster damage assessment
	Appoint nodal person for disaster management related communication with DEOC		Provide livelihood support to disaster affected people
	For disaster risk reduction at village level, prepare village level disaster management plans		Provide support in repairing and constructing of new building in affected area
	Identify nonfunctioning of Hand pumps and ensure their repairing and functioning		Based on damage assessment, prepare short and long term disaster recovery plan
	Identify panchayat level boat operator and prepare their list		Ensure participation of disaster affected people in village disaster management committees
	Prepare and construct high raise hand pumps station to ensure proper drinking water supplies in flood affected areas		Ensure facilitation of technical agencies in disaster resilient construction of new building
	Ensure strong and disaster resilient connectivity of villages through roads		
	Formulate of village disaster management committees and conduct regular meetings to discuss and resolve disaster management related issues		
Transport Department	Ensure availability of Vehicles during flood situation and establish prior communication with food supplies department to address the need of fuel		
	Prepare list of vehicles available with		

	Department and update on SDRN		
	Address climate change related issues by conducting regular checks and ensure proper maintenance of vehicles		

2. Drought

Department	Preparedness	Prevention	Mitigation
	Awareness generation and capacity building on water conservation techniques (Bihar DRR Roadmap 2015)	Establish infrastructure for drought warning and dissemination	Strengthen and upgrade existing drought forecasting system
	Encourage Water Resources Department, Department of Minor Irrigation, Department of Agriculture & PHED and other specialized agencies to take up drought prevention and mitigation measures.		Impart training to the stakeholders involved in drought mitigation and management
	Instruct Panchayati Raj Department/PHED/Rural Development Department/ Building Construction Department/ Education Department/ Health Department etc. for promotion of rainwater harvesting measures as a drought prevention measure and encourage them to incorporate rain harvesting measures in all building construction works undertaken by the District Administration.		
	In association with Department of Agriculture, Rural Development Department and Department of Environment and Forest & through other specialized agencies work out drought prevention, mitigation and preparedness measures from crop State of Bihar State Disaster		

	Management Plan		
	Instruct energy department to arrange in advance for electricity supply during drought situation		
Agriculture Department	Identify drought prone areas through GIS mapping ,	Support horticulture related farmers with small irrigation school	Strengthen and stabilize irrigation system with water resource department
	Survey and study of identified drought prone areas	Encourage solar energy systems for irrigation and electricity generation	Training, awareness generation of farmers and develop action plan for disaster risk reduction
	Formulate prevention, mitigation and preparedness measures along with budget allocations		Application of advanced agro-Science technology and agro-engineering inputs to improve agriculture production
	Formulation of policy and strategizing the implementation of rain harvesting programme & activities		Connecting people with government ANN KALS YOJNA
	Working out Crop Contingency Plan storage of seeds, fertilizers, rainfall estimation etc. for drought situation		Ensure availability of water until the last moment in Canals and in taps
	Develop strategies for effective implementation of optional cropping		On the basis of assessment, ensure availability of required material to respond droughts
	Prepare WhatsApp group including nodal person, officials, different stakeholders for quicker communication		Maintain proper coordination with insurance companies to ease response in relief related work
	Ensure availability and implementation of drought resilient crops		Identify, search and implement drought resident techniques with help

			of KVK (Bihar DRR Roadmap 2015)
	Providing Agriculture Input subsidy		With the help of MGNREGA ensure implementation of drip irrigation, shower irrigation etc. at farmers
	Strategize the storage and supply of seeds, fertilizers and pesticides		Awareness generation of farmers on different schemes run by government
	Working out ecological betterment of the areas		As per need provide subsidies to farmer on diesel, fodder, seeds, fertiliser etc.
	Organize the irrigation facilities Working out alternative cropping programme and activities		Promote and develop cold storages as per agriculture department
	storage of seeds, fertilizers etc. for drought situation		
Animal Husbandry and Fisheries Department	Establish and practice protocols for Early Warning approval and dissemination.	Preparation of drinking water sources at proper locations	Encourage the adaptation of technique for preservation of green fodder.
	Check supply/ storage of life saving vaccines in advance and safe storage for them.		
	Arrangement of vehicle for transport of sick animals		
	Identification of the safe place in the Panchayat with the help of community and field staff of the department.		
	Fodder storage at safe places.		
	Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
	Renovate the fishponds and ox-bow lakes.		Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the

			routine work
	Ensure that the fishponds are protected.		
	Open the fisheries departmental office at block level to understand the ground realities		
	Improve the better functioning among the people.		
	Training and exposure to fish farmers in scientific aquaculture, Renovation of water bodies through Panchayats,		
	Awareness on marketing for the fish farmers		
	Setting up of model farms in the districts and the exposure visit of the Panchayats so that they gain knowledge		
	Allocate separate fund for disaster management, so that the essential reconstruction work can be started early after any emergency.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensure recharging of different water sources		
Bharat Sanchar Nigam Limited	Send alert messages during emergencies.		
Education Department	Ensure disaster management be part of curriculum in all schools, colleges.	Ensure proper water supply in Schools and	Generate awareness and capacity

	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.	Change of school hours	building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Ensure proper drinking water facilities at school level		

Energy Department	Establish and practice protocols for Early Warning and dissemination.	Electricity supply at irrigation and water supply sources	Proper planning for maximum electricity supply in rural areas for irrigation during drought situation
	Ensure proper electricity supplies in vulnerable areas and also at drinking water sources		
	Considering the drought situation, establish 24 hr operational control rooms (शासनादेश ०१ ा०आ०-२७/२०१३/४४७२ ददनाक१/१०/१३)	Give priority to damaged and bared transformers for repairing and changing	
	Provide Minimum of 8 hr electricity to drought affected villages for all purpose use		
Fire and Emergency services Department	Assess the vulnerable points in the infrastructure, especially hazardous industries and take measures like timely repairs etc.		Awareness programs and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Ensure proper awareness initiatives in vulnerable location where the fire arise due to excessive heat		
Health Department	Medical camps in affected areas.	Conduct regular surveillance of public health measures	Generate awareness and capacity building trainings of community Dos and Don'ts for Heatwave
	Checklist of medicines and medicals facilities to have in the camps.		
	Stockpiling of medicine critical medicines for heat stroke		

	Ensure availability of medicines for heatwave, diarrhoea, Fever, Dehydration, dermatitis etc. at PHC and CHC level		
	Prepare Monitoring Cell under the chairmanship of Civil Surgeon during drought situation to ensure health of affected		
	To address malnutrition among children, women, Pregnant and lactating mothers, ensure health kit at PHC and CHC level		
Irrigation Department	Identify the drought prone areas, availability of water resource in the area and level of ground water in the area.	Enact and enforce the laws regulating the ground water exploitation	Develop mechanisms for water audits
	Formulate prevention, mitigation and preparedness measures.		Encourage people to use advance technology of drip and sprinkle irrigation
	Strategize the cropping pattern in association with the Department of Agriculture and create Irrigation facilities accordingly.		
	Monitor and supervise the watershed and rainwater harvesting facilities in the drought prone areas.		
Public Health Engineering Department	Install extra hand pumps to sustain the supply of drinking water		Encourage indigenous rain water harvesting and conservation
	Formulate rain-harvesting practices and promote the same in vulnerable areas.	Ensure quicker repairing of non-functioning hand pumps	
	Establish 24 hr control rooms to monitor and respond droughts	If Hand pumps are dried up provide water through tanks	

	Prepare Departmental action plan to address drought	Create water tanks by digging land at proper places to provide water for animals	
	Conduct drinking water need assessment, ensure proper availability of water tanks		
	Ensure availability of water hand pump repairing material before drought		
	Construct new water taps, if the present quantity is not		
	Establish proper coordination with electricity department to ensure reach of water suppliers in Urban area		
	For Uninterrupted water supply, ensure availability of submersible pumps		
	Establish joint control room with Municipal corporation and PHED Department to redress water		
Food Corporation	In consultation with Department of Disaster Management, setup centres for supply of food grains on subsidized rates or free, as decided.	Construct warehouse and cold storages for preservation/ storage of food grains	Establish 24 hr control rooms at different level during drought
			Ensure proper availability of food grains under Annpuran and Antyodaya Yojana through assessment of available and resources may
			Under Shatabdi Ann Kalsh Yojna, ensure availability of one quintal food grains at every village so that no one will die
Water Resource Department	Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.	Construct/ Repair dams, reservoirs, lift irrigation, tube wells, tanks, farm ponds and canals for surface irrigation	Strengthen water conservation techniques.

	Identify potential emergencies. Refer to the contingency specific action plans for the same.		Ensure supply of water in drought
	Ensure proper functioning of tube wells and repairing/cleaning of canals, bridges, small irrigation canals etc.		

3. Earthquake			
Department	Preparedness	Prevention	Mitigation
DDMA	Organize orientation and training of responders, engineers and masons for safe construction including the Mock drill for the community in disaster management	Instruct Building Department to Identify lifeline weak buildings and retrofit them.	Provide good quality seismic micro-zonation maps to all stakeholders .Establish seismological network and round-the-clock monitoring
	Coordinate with relevant departments regarding enforcement of Building Codes, Fire Safety Rules and Certification of Building etc.		Capacity building of Engineers & Architects in earthquake risk mitigation (to design seismically safe buildings and related techno-legal requirements)
	Follow-up with Road & Building Construction Department about the availability of heavy-duty cutting and debris clearing machines, their specifications, placement, storage and their operators & upkeep of the same for ready use.		Awareness Generation among community for do's and don'ts for earthquake safety,
	Follow-up with concerned agencies about the arrangements for putting up stopgap bridges on emergency basis & formation. In addition, training of the team for the erection of temporary bridges.		
	Follow-up with BSNL about the arrangements for the restoration of communication system & act accordingly		

	<p>Follow-up with Health Department about facilities available, both in private & public sector, for health services in hospital preparedness for mass casualty in vulnerable areas and act accordingly</p>		
	<p>Follow-up with PHED about the drinking water facilities created in the vulnerable areas and Department's readiness to provide the same in emergencies & act accordingly</p>		
	<p>Follow-up with Energy Department about arrangements for the restoration of power supply and providing for supply of power through alternative sources of energy & act accordingly</p>		
Animal Husbandry	<p>Identify animal safe shelters for animals Check supply of life saving vaccines in advance and safe storage for them. Arrange vehicle for transport of injured animals Identify the safe place in the Panchayat with the help of community and field staff of the department. Fodder storage at safe places.</p>		<p>Shed for animals should be earthquake resistant or of lightweight material so that the animals remain unharmed.</p>
Bharat Sanchar Nigam Limited	<p>Sending alert messages during emergencies.</p>		<p>Undertake mandatory technical audits of structural designs of major projects by the respective competent authorities.</p>
Public Works Dept. (PWD)	<p>Arrange extra vehicles/ heavy equipment, such as front-end loaders, towing vehicles, earth moving equipment, water tank supplies etc.</p>	<p>Establish appropriate mechanisms for compliance review of all construction designs submitted to ULBs.</p>	<p>Assess the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical lifeline structures.</p>

		Slope stabilisation on hilly areas	Develop seismic strengthening and retrofitting standards and guidelines for existing critical lifeline structures.
Education Department	Construct of earthquake resistant school buildings.	Retrofitting in already constructed buildings.	Undertake mandatory technical audits of structural designs of major projects by the respective competent authorities.
	Conduct regular mock drills at school on earthquakes		Introduce earthquake safety education in schools, colleges and universities and conducting mock drills in these institutions about MSSP School Safety programme.
	Awareness generation of teachers and students of earthquake and its dos and don'ts		
Electricity Department	Identify vulnerable and weak infrastructures and retrofitting of the same		Undertake mandatory technical audits of structural designs of major projects by the respective competent authorities.
Fire Department	Assess the vulnerable points in the infrastructure, especially hazardous industries, and take measures like timely repairs etc.		Training its staff in search and rescue operation
	Ensure proper awareness generation and capacity building for search and rescue and first aid		
	Support NDRF/SDRF/Police/ Home guard for search and rescue work		
Health Department	The preparations shall be made keeping in mind injuries caused by falling off and from buildings, heavy structures-specifically bone injuries etc.	Equip buildings with basic first aid facilities.	Prepare Hospital mass casualty management plans Training of doctors / paramedics to meet emergency situation due to earthquake

	Mobile unit should be ready to reach at any affected places	Ensure construction of earthquake resilient buildings and retrofitting of old damaged building	
Irrigation Department	Formulate prevention, mitigation and preparedness measures.	Construction of earthquake resilient water supply channels	
	Strategize the cropping pattern in association with Department of Agriculture and Creation of Irrigation facilities accordingly.		
	Monitor and supervise the watershed and rainwater harvesting facilities in the drought prone areas.		
Public Health Engineering Department	Create drinking water facilities in relief camps and in shelter for livestock.	Construction of earthquake resilient water supply channels	Repair damaged water sources on immediate bases
Food Corporation	In consultation with Department of Disaster Management, setup centres for supply of food grains on subsidized rates or free, as decided. Ensure safety of Petrol, diesel, kerosene, LPG etc. from earthquake	Construction of earthquake resilient storage houses	Ensure supply of food grains with updated price to affected people
Water resource Department	GIS mapping of the breaches in embankments caused by earthquake Repair the breaches and maintenance of other embankments	Construct earthquake resilient embankments	Enforce and monitor the compliance of earthquake-resistant building codes, town planning byelaws and other safety regulations.
DRDA	Advise the Panchayati Raj representatives to do advocacy for construction of earthquake resistant houses as per the technical specifications available. Bring awareness about earthquake among communities		Enforce and monitor the compliance of earthquake-resistant building codes, town planning byelaws and other safety regulations.

Municipal Corporation	Link all developmental work with Disaster risk reduction		
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5. Heat wave:			
Department	Preparedness	Prevention	Mitigation
DDMA	Work out on ecological betterment of the District in coordination with Agriculture, Rural Development, District Industries and Forest and Environment Departments Promote tree plan plantation and green energy with all sectors and society		Coordinate with Municipality, PWD and Rural Development Department to construct/ upgradation shelters/ sheds, bus stands and various public gathering places with proper cooling provisions Plan and Coordinate with Health Department for creating Medical posts at places of mass gathering including religious functions and regular markets
Agriculture Department	Work out for Crop Contingency Plan		Encourage crop rotation
	Provide for Agriculture Input subsidy		Ensure proper irrigation and steady water supply to the standing crops
	Strategize the storage and supply of seeds, fertilizers and pesticides		
	Work out on the ecological betterment of the areas		
	Organize the irrigation facilities		
	Work out on alternative cropping programme and activities		
Animal Husbandry	Establish and practice protocols for Early Warning approval and dissemination.	Preparation of plans for provision of adequate drinking water supply for cattle during scarcity.	Publicize protective techniques through pamphlets and posters, for safeguarding poultry and cattle during heat wave.
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.	Ensuring sufficient stock of medicine in all veterinary hospitals.	

	Spread awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
Fisheries Department	Training and exposure to fish farmers in scientific aquaculture, Renovation of water bodies through Panchayats,		
Bharat Sanchar Nigam Limited	Nominate a nodal officer for disaster management.		
	Standby arrangements for temporary electric supply or generators		
	Send alert messages during emergencies.		
	Spread awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
Electricity Department	Promote the schemes on non-conventional energy sources.		
Fire Department	Promotion of fire safety standards		
	Organize awareness and training		
	Active involvement in disaster management activity, identify the voluntary workers from NGOs, Educational institutions and provide them training.		
Health Department	Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene and nutrition.	Adopt heat- driven examination techniques at local hospitals as well as urban health centres.	Designing and initiation of programs and efforts for training and capacity building regarding communication on illness due to heat, for medical staff members at PHC's, UHC's. This also includes field and staff workers, nursing staff, paramedics, ANM's and ASHA workers.
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		

			Creating Medical posts at places of mass gathering including religious functions and regular markets
	Ensure proper arrangements for treating heatwave affected people at all PHC, CHC, Sub Division, District and referral hospitals		
	Ensure sufficient availability of ORS and IV drops at all hospitals and clinic		
	Start mobile medical units for quicker responses		
Home Guard Department	District based training centre for the training of the soldiers		
Irrigation Department	Improve in the field of more tube well facilities to the people so that people total dependence on the monsoon should reduce.		
Public Health Engineering Department	Establish and practice protocols for Early Warning approval and dissemination.	Identify and establish drinking water sources in vulnerable location	Awareness generation and capacity building trainings of officials on Dos and Don'ts in Heatwave
	Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching powder in the relief camps/shelters in disaster probable areas.		
Food Corporation	Coordinate with Supply Department to ensure that all safety measures are in place for proper storage, transportation and distribution of supplies.	Ensure nutritious food supply in vulnerable areas and in storage houses	
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders		
	engaged with the department on potential disaster risks and measures to reduce the risk.		

Municipal Corporation	Provide clean drinking water in vulnerable areas	Dissemination of text messages during a 'heat alert' for sending warning to vulnerable residents residing in areas of high risk.	Identify and map the risk prone areas consisting of vulnerable group, which is especially homeless, destitute and aged people in order to focus on mitigation practices during the heat wave period.
	Ensure drinking water facilities at public		
Water Resources Department	Formulate the budget for the maintenance of embankments, sluice gates, lock gates etc. under different categories.		Generate Awareness and capacity building trainings
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
Education Department	Ensure that school is working in morning times		
	Ensure proper arrangement of drinking water in school		
	Ensure early vacations in school during extreme heat situation		

Chapter 6: Capacity Building and Training

Developing a DDMP without building capacity or raising awareness amongst the stakeholders can be detrimental to the development of a successful and sustainable plan. Stakeholders and communities are critical components to a successful, long-term, sustainable disaster management plan. Capacity Building develops and strengthens skills, competencies and abilities of both Government and non-government officials and communities to achieve their desired results during and after disasters, as well as to prevent hazardous events from becoming disasters. Capacity is the method and plan for achieving a goal and therefore capacity building/development refers to the medium in which those objectives are achieved.

The UNISDR defines capacity building as “the process by which people, organizations and society systematically stimulate their capacities over time to achieve social and economic goals, including improvement of knowledge, skills, systems and institutions”. capacity building serves as an integral component of disaster risk reduction. Lack of adequate capacities amongst all the concerned stakeholders proves to be major hurdle in successful implementation of disaster mitigation and recovery programmes. Assessing vulnerable sections of the society becomes a significant step in strategizing for disaster risk reduction and capacity building at the community level.

BSDMA is organizing various training programs, workshops and meetings towards orientation of various aspects of disaster management such as

- Lifesaving skill training
- Disaster risk reduction
- School safety
- Boat safety
- Safe construction
- Trainings on Emergency Response Functions such as first aid, search and rescue, emergency operation centre, emergency feeding and welfare, communication and damage assessment etc.
- Trainings for coordinated disaster management activities and response operations are highly required, especially for the persons engaged in emergency services, government –line departments, non-government organizations, professionals, citizens and important private sector groups

Institutional capacity building

District Disaster Management Authority can organize trainings, seminars, and workshops with the help of Bihar State Disaster Management Authority for Civil Defence and Home Guard, Fire, emergency services Department, Health departments, and other related departments. Various capacity building programs of such as trainings of BAS officers, are already organized by BSDMA.

As per the need of district administration, BSDMA is keen to provide capacity building trainings to meet emergencies. Following are the mass training program carried out by BSDMA²³;

1. Master trainers' training program for the training of sailors and boat owners;
2. Training programs of surveyors and registrars on survey / registration of boats;
3. Training on retrofitting techniques for engineers / architects ;
4. Training program of Mukhiya, Sarpanch and other Panchayat representatives on 'Disaster Risk Reduction and Management'
5. Vocational Training to the Bihar Administrative Officers on Disaster Management and Risk Reduction and Management
6. Four day training program of veterinarian on management of animals in disaster
7. Animal Management in Disaster Situation
8. Vocational Training Program on Disaster Management and Risk Reduction in flood prone areas/ Block Development Officer / Circle Officers
9. School safety; etc.

Following is the list of suggestive training needs, which were identified and discussed during the district consultation and one-on-one consultation:

Department and Training topics	Participants
Agriculture Department	
Training on climate change and its emerging issues	Block Agriculture officers KVKs Agriculture experts
Effective management and cropping in Horticulture	Horticulture officer
	Farmers
Training on disaster management and risk reduction	All Departmental staff Farmers
Training on safeguarding Fodder and seeds	SHGs Farmers
Training on Alternate farming and multi cropping techniques	Agriculture advisors Farmers
Animal Husbandry Department	
Training on conducting damage assessment to animal, fodders and related things	All officers All Cos
Training on Management of animals, fishes and dairy products in disaster	All Fisheries officers All Farmers and owners
Building Construction Department	
Training on Disaster Resilient Construction	All Engineers All staff members
Training on Disaster Risk Reduction and non-structural risk assessment	All Engineers All staff members
Training on Rapid Visual Screening	All Engineers
Education Department	
Training of Disaster Management Teams on; First Aid Search and Recues	All Principals All Nodal Teachers of Disaster Management All School Level Teams
Awareness Generation Evacuation Site Management Transportation Safety	
Training on preparation of School Disaster Management Plan	All Schools All Principals All Nodal Teachers All BEOs
Training on Conducting Mock Drills	All Schools
	All Principals All Nodal Teachers All BEOs
Electricity/Energy Department	
Training on effective delivery of services during disaster	All Staff members
Fire and Emergency Services Department	
Organise regular training on fire safety and search and rescue techniques	All PRIs All Privet business owners
	All Teachers All Ward Members All CBOs NSS and NCC Youth Groups Industrial safety officers Owner/worker of petrol pumps
Training on conducting a fire safety audit	All Fire officers Station Officers

	District disaster management officer NSS and NCC Youth Groups
Transport Department	
basic life saving techniques and First Aid	All Drivers All Conductors
Training on vehicle fire safety	All Drivers
	All Conductors
Health Department	
Training on formulation damage assessment team and conduct of damage assessment	All staff of Department
Training on Epidemic management and new emerging diseases	Quick Medical Response Team Paramedical Staff Mobile medical team
Training on first aid and life saving techniques	ANM
	ASHA
	Anganwadi workers
	Red Cross workers
	Immunisation workers
	Grassroot level workers
Training on health and hygiene	Community leaders PRIS Youth Medical staff ASHA ANM Anganwadi workers
Panchayati Raj Department	
Training on Village level Disaster Management Plan and formulation of village disaster management committees	PRIs Gram Sevaks Ashas Anganwadis Community Leaders Youth Groups Csos Social Workers
Training on relief distribution and camp management	PRIs
	Gram Sevaks Ashas Anganwadis Community Leaders Youth Groups Csos Social Workers
Home Guards	
Provide training on; First Aid Damage Assessment Carcass disposal Search and Rescue	Csos Disaster Management Teams Swimmers Divers Police Station officers
Crowd Management	
Water Resources/Irrigation Department	
Training on Early warning and dissemination	Disaster Management officer of District
	Executive Engineers Master Trainers All Panchayat leaders Village Disaster Management Committee Disaster Management Teams
Training cum awareness generation on joint irrigation techniques	All Panchayat leaders Village Disaster Management Committee Disaster Management Teams Active farmers
Police Department	

Training on Capacity assessment and advanced swimming techniques	Police station inspectors Constables
Conduct regular Training on First Aid, Search and Rescue	All the staff members
Public Health Engineering Department	
Training on maintenance and repairing of Hand pumps and Taps in emergency	All the field staff
District Red Cross Society	
Training on First Aid and Search and Rescue	All Panchayat leaders Village Disaster Management Committee Disaster Management Teams
Awareness generation on blood donation	All Panchayat leaders Village Disaster Management Committee Youth Groups NCC and NSS SHGs

Community- including CBOs and PRIs

Community awareness is highly in need. The district is more prone towards various hazards, such as earthquake, flood etc. The community awareness programs should incline on the following points:

- Types of disasters and basic Dos and Don'ts related to those disasters
- Post disaster epidemic problems
- Construction and retrofitting techniques for disaster resistant buildings
- Communication of possible risks to the vulnerable areas in the district
- Evacuation related schemes and community preparedness problems

BSDMA has distributed booklets for trainings of various PRI officials, CBO etc. Please refer to the different training modules of BSDMA <http://bsdma.org/Publication-Reports.aspx> .

Professionals

Professionals are an integral part of the Disaster Risk Reduction process. Building capacity of professionals becomes a significant step in strategizing for disaster risk reduction and capacity building at the community level. District Professionals, which need to be a part of capacity building and training, are Engineers, architects, doctor nurses, teachers etc.

Please refer different training module of professional <http://bsdma.org/Publication-Reports.aspx> .

Professionals should impart training on following points:

- Construction and Retrofitting Techniques for Disaster Resistant Buildings
- First aid and Post Disaster Health Problems
- Communication and Damage Assessment
- Search and Rescue
- Emergency Operation Centre

Training Institutes and other facilities

Various training programs are organized at Bihar Institute of Public Administration & Rural Development (BIPARD), Bihar State Disaster Management Authority (BSDMA) etc. for different stakeholders as well as community from time to time. The district also has support of NDRF & SDRF teams. The master trainers trained by BSDMA are supposed to organise training programmes for other stakeholders at district, subdivision and block levels. DDMA is required to facilitate such training programmes.

Awareness Generation

Awareness Programmes for disaster risk reduction are essential for the mobilization and participation of stakeholders, professionals and citizens in prevention strategies and risk mitigation of sitamarhi district. Awareness programme includes understanding the prevailed risk of district and majors to

control the risk with available resources, in partnership with other stakeholders of the district. The various channels utilised to build community awareness are mentioned below.

- I. School
 - a) Gram Shiksha Samiti
 - b) Shiksha Abhbhavak Meeting
 - c) Eco Clubs
 - d) Parysvaran Mitra Clubs
 - e) Meena Manch
 - f) Baal Sansad
 - g) Scouts & Guides
- II. Colleges
 - a) NSS
 - b) NYKS
 - c) NCC
- III. Gram Vikas Shibir
- IV. Police personnel at ground/Panchayat level.
- V. Civil Defence volunteers
- VI. NGOs and CBOs
- VII. PRIs

In this context, Bihar State Disaster Management Department and Bihar Disaster Management Authority are conducting the following Safety Week and awareness campaigns in respect of disasters.

- Earthquake safety week
- Flood safety week
- Road safety week
- Fire safety week

Apart from this, the Bihar State Disaster Management Authority has suggested measures of "what to do" and "what not to do" in respect of various disasters.

The following activities can be adopted to disseminate these aforementioned safety weeks and measures to reduce impact of disasters among the community -

- Conduct of mock drills related to fire safety in schools, markets, cinemas, malls etc.
- Conduct of mock drills for earthquake evacuation in schools.
- Debate, painting and poster competition in the context of disasters.
- Street plays, folk music etc. at the local haat-bazaars and crossroads.

Chapter 7: Response Planning

Declaration of disaster and activation of response and relief activities is based on the severity of disaster. To do so, first priority is to determine whether the resources are sufficient to cope with the severity of the disaster or not. If the situation is beyond the coping capacity of community, in the affected area, then a disaster shall be declared at different levels. As per the National Disaster Management Authority guidelines, these scenarios are of four levels that are Level 0 (L0), Level 1 (L1), Level 2 (L2) and Level (L3).

1.	Conduct Meeting of members of DDMA along with heads of line departments and other stakeholders	DDMA	Immediately
2.	DMD & BSDMA shall activate State Emergency Operation Centre and notify the national authority	BSDMA/DMD	Immediately
3.	Contact humanitarian organizations for their assistance for immediate response	BSDMA/DMD	Immediately
4.	Establish Staging area to collect mobilized resources for deployment to the affected area	DDMA	Immediately
5.	Set up Incident Command Post to monitor and operationalize field activities	DDMA	Immediately
6.	Establish transit camps and temporary shelters and provide all necessary support through response teams	DDMA	Immediately
7.	Conduct Rapid Damage and Needs Assessment and circulate to all concerned	DDMA	Within 2 hours Later
8.	Media briefing about the scenario	BSDMA	Within 2 hours
9.	Prepare preliminary assessment report	DDMA and BSDMA	In first 24 hours
10.	Conduct detailed damage and needs assessment report	DEOC/DDMA	Within 24 hours
11.	Maintain coordination with all stakeholders and keep updating all about situation	DEOC	Ongoing
12.	Withdrawal of declaration of disaster on normalization of the situation.	BSDMA/DMD	As on normalization of the situation

Disaster Response Actions

Level 3

L3 disaster situations arise from large-scale disasters where districts and the state may not have the capacity to respond adequately and require assistance from the central government for reinstating the state and district machinery. Humanitarian needs are of a sufficiently large scale that significant external assistance and resources are required. Multi-sectoral response is needed with the engagement of a wide range of international humanitarian actors also.

Sr. No.	Actions	Responsible Dept.!Agencies	Time frame
1.	Prime Minister shall declare a calamity of severe nature as 'National Calamity' and call for further assistance from national stakeholders for immediate response	PMO/ MHA GOI	Immediately
2.	Activate State and National Emergency Operation Centre	NDMA and BSDMA DMD and MHA	Immediately
3.	NDMA shall mobilize National Disaster Response Force teams and resources to affected districts. SDRF will also be mobilized to the affected areas	NDMA MHA and DMD	Immediately
4.	Establish inter agency groups to have uniform and well-coordinated response	NDMA	Immediately

5.	Establish Staging areas to collect mobilized resources for deployment to the affected area	DMD/BSDMA and DDMA	Immediately
6.	Set up Incident Command Posts to monitor and operationalize field activities	SDMA, DMD and DDMA	Immediately
7.	Establish transit camps and temporary shelters and provide the necessary support to the affected communities through response teams	Department of Disaster Management and DDMA	Immediately
8.	Media briefing about the scenario	NDMA	Within 2 hours
9.	Convene regional Inter Agency Group meetings with relevant sector/cluster leads to: <input type="checkbox"/> discuss coordinated approach	NDMA	Within 2 hours
	<input type="checkbox"/> outline priority needs <input type="checkbox"/> detail immediate response plans <input type="checkbox"/> agree on assessment mechanism, notably joint Rapid Damage and Needs Assessment (Refer Point no- 7)		
10.	Maintain coordination with all the stakeholders and update everyone about the situation	SEOC and DEOCs	Ongoing
11.	Prepare preliminary assessment report	IAGs	In first 24 hours
12.	Conduct detailed damage and needs assessment report	DMD and DDMA	In first 48 hours
13.	Plan for rescue and relief operations in affected areas	BSDMA and NDMA	In first 72 hours
14.	Withdrawal of declaration of disaster on normalization of the situation.	PM	when the situation turns normal

Disaster Response Actions

Activation of Response

The disaster response plan is activated shortly after the receipt of an early warning or on the information of an emergency. Activating the response plan means setting in motion command, coordination, and management of the situation. The activities described in the following standard operating procedures (SOPs) are to be initiated immediately to ensure that loss and damage are minimized. One SOP is in the case where early warning is available, the other when there is no early warning, thus the activation of the response depends on the type of the hazard and its impact.

Scenario 1 - With Early Warning

1) Nodal agencies at central and state level are responsible for forecasting extreme weather events (like flood and cyclone), issue alerts and warnings with the help of Sitamarhi District Emergency Operation Centre.
2) As soon as alerts and warnings are received, the District Emergency Operation Centre has to be fully activated with minimum 3 staff members, communication system such as telephone, mobile phones, VHF, radio, wireless etc. Maintain following; <ul style="list-style-type: none">- Maps of highly vulnerable Panchayats- List of hospitals with their contact number- Contact number of line department- Call log register
3) First task is to inform the community likely to be affected by the disaster through the warning system set in place (the process of ensuring that warning information is disseminated to the communities is explained further in the Information Dissemination section).
4) The District Emergency Operation Centre activates the district/sub-division/block level administration to deploy all necessary manpower and resources to respond to the situation.
5) The District Magistrate calls upon the DDMA to proceed with the necessary pre-emptive measures, which may include people's evacuation from risky areas. A comprehensive Standing Order, listing all the necessary pre-emptive measures based on the warning, is then prepared.
6) Thereafter, everyone concerned should undertake a follow up action, encompassing the District Emergency Operation Centre and the sections involved in the Incidence Response System.

Scenario 1 with Early Warning

Scenario 2 - Without Early Warning In disaster situations where no early warning signals are available, the primary objective is to mount immediate rescue and relief operations as quickly as possible. The following procedure will be followed in such situations:

1) The field functionary at ground zero informs the District Emergency Operation Centre and the District Magistrate about the emergency/disaster.
2) The District Emergency Operation Centre has to be fully activated for managing the disaster. With minimum 3 staff member, communication system such as telephone, mobile phones, VHF, radio, wireless etc. Maintain following; <ul style="list-style-type: none">- Maps of highly vulnerable Panchayats- List of hospitals with their contact number- Contact number of line department- Call log register
3) The District Magistrate informs the State Emergency Operation Centre/State Disaster Management Authority and seeks external assistance, if required. The FIR is submitted to the State and National Emergency Operation Centre.
5) The District Crisis Management Group meeting is held, where the teams associated to the IRS and the team to conduct the Rapid Damage and Needs Assessment, are deployed.
6) Search and Rescue Teams and Medical and Paramedical teams have to be deployed as required
7) The District Magistrate has to review the situation and exercise coordination, command and control.
8) Regular meetings of DDMA are convened to review the situation.
9) Line Departments and other agencies work towards restoration of basic services and infrastructure such as power, telecommunication, surface transport, etc., as well as for supply of food, drinking water, and other materials.
10) Thereafter, follow up action has to be undertaken by all concerned at all levels.

Communication

Communication			
Department/ agency	Type of Disaster	Activity	Time in which to be completed
BSNL	Flood, Cyclone, Earthquake	To restore communication facilities after disaster	T+08 hrs
Police	Flood, Cyclone, Earthquake	To provide emergency communication linking EOCs and IMT	T+03 hrs
DDMA	Flood, Cyclone, Earthquake	To ensure communication facilities to support State and district actions	T+06 hrs

The District Administration and local authorities would communicate to the larger community the impact of the disaster and specific activities that are required to be undertaken to minimize the impact. Some of these activities could include precise communication of the impact of disaster and relief measures being taken and generate goodwill among community and other stakeholders. It would also aim at preventing panic reactions, while providing relevant information and handling welfare enquiries. The communication channel will also act as a feedback mechanism on relief measures and urgent needs of various agencies involved in emergency relief measures and relief.

NIC	Flood, Cyclone, Earthquake	To coordinate the temporary communication requirements	T+01 hrs

Communication Response Action

Taskforce Action Plans- SOPs

For effective relief and rescue work, a comprehensive strategy will be formulated covering all line departments and key stakeholders on following components.

1. Early warning and Communication:

Action	Departments
Develop and finalise system to provide early warning until last mile Coordinate early warning, response and recovery operations.	District Administration- District Disaster Management Authority, Panchayati Raj Department

Response Action for Early warning and Communication

2. Evacuation

Action	Departments
Organise multi hazard mock drills at different levels covering different levels of disasters and ensure participation of all stakeholders	District Administration- District Disaster Management Authority, Panchayati Raj Department, NGOs/CBOs

Response Actions for Evacuation

3. Search and Rescue

Action	Department
Deploy NDRF and SDRF in vulnerable areas	District administration- DDMA, PRIs and voluntary organisations
Prepare online database of trained boat operators at state, district and block level. Display their contact number at village, panchayat and public places	
Ensure enrolment of affected people at safe shelter and relief camps	District administration- DDMA, PRIs and voluntary organisations, UN organisation
Prepare database of affected people through the enrolment details	
All the details of rescued people, including name, address and occupation to be shared to the circle, panchayat, block and district offices	
Develop an MIS	

Response Action for Search and Rescue

4. Shelter and Relief Camp

Action	Departments
Establish communication facilities in relief camps	District Administration, PRIs
Ensure deputation of camp manager	District Administration

Response Action for Relief Camps

5. Debris removal and Carcass Disposal

Action	Departments
Conduct training of NDRF/SDRF	Fire and emergency Department, Civil Defence and Home guard, youth, volunteers, CBOs on Debris removal and Carcass Disposal BIPARD

Response Action for Debris removal and Carcass Disposal

6. Emergency Operation Centre

Action	Department
Ensure deputation of manpower for ESF along with EOC	Home Department, UN agencies other voluntary organisation
Prepare Route maps, statistics, Map, plans etc. for ESF Prepare list of equipment for debris removal and cleaning Training of staff on operation of EOC Awareness Generation of community on usage of emergency numbers	Technical expert, Information and Public relation officer, PRIs and voluntary organization

Response Action for Emergency Operation Centre

7. Godown

Action	Department
Prepare all godowns for storage of essential equipment and resources.	Food and consumers affair and Food corporation Departments
Identify private and other godowns to use in emergency.	District Administration, DDMA and other private organisations

Response Action for Godown

8. Need Assessment

Action	Department
Convert all records, files, statistics and other document in digital format.	Respective Departments

Response Action for Need Assessment**9. Capacity Building**

Action	Department
Training of staff on operations of ESFs, Training of Civil Defence and community members for supporting functioning of ESFs	Technical Expert

Response Action for Capacity Building

For effective functioning of above-mentioned components, following cell will be formulated in Sitamarhi district. As soon as the disaster declared in the district, following cell will be activated to undertake relief and rescue work in coordination with DDMA and District Administration.

Hazard	Action	Responsible Officer
All Disaster Department DDMA	Continue coordination with all departments to ensure proper functioning in departments Operationalise all the directions and guideline received from state departments. Ensure coordination with all the Cells. Provide equipment and fund requested by circle offices. Receive guidance from state government where it requires. Ensure meetings of disaster management team at district, block and panchayat levels. Identify affected areas and prepare maps to reach out. Prepare report for the visits of high level committees/State level Teams/Central level Teams.	Additional Collector- Disaster

Cell I: District Disaster Management

Hazard	Nodal Department	Supportive Department
Flood, Fire, Hailstorm, Drought, Extreme Temperature, Heavy Rain, Wind Cyclone	Agriculture Department	District Administration ATMA

Cell 2: Agriculture

Department	Actions	Responsible Officer
Agriculture	Prepare emergency cropping plan Conduct Damage Assessment of Crops Prepare Damage Assessment of Crops and request for additional funds Collect information of damage department resources and share it with District nodal officer of disaster management	District Agriculture Officer

Response Action of agriculture cell

Cell 3: Embankment Protection

Hazard	Nodal Department	Supportive Department
Flood	Water Resource Department	Irrigation Department
Department	Actions	Responsible Officer
Water	Ensure 24 x7 functioning of flood control rooms at all level	Executive Engineer
Resource		
Department	Ensure continuous monitoring of irrigation canals, bridges, culverts etc.	
	Take advice from technical experts on repairing of canals	
	Ensure community participation in repairing of damage canals	

Response Action of embankment cell

Cell 4: Fund Management

Hazard	Nodal Department	Supportive Department
All Hazards	District Confidential Section	District Administration

		Police Department
Department	Actions	Responsible Officer
District	Ensure proper funds during disasters	Additional collector
Administration	Resolve issues during disasters	
	Issue funds related guidelines	
	Ensure community participation in repairing of damaged canals	
Police	Assessment of primary situation of the affected area	Police Superintendent/ SHOs
Department	Issue official statement for fund requirement	Police Superintendent
	Ensure availability of manpower and arrange extra manpower, if required	Police Superintendent / Additional Collector

Response Action of fund management cell

Cell 5: Public Health

Hazard	Nodal Department	Supportive Department
All Hazards	Public Health Engineering Department	District Administration
Department	Actions	Responsible Officer
District Administration	Decide level of damage of public infrastructure in affected areas	Deputy Development Commissioner
	Ensure delivery of drinking water in all affected areas	
Public Health Engineering	Ensure repairing of damaged hand pumps and water taps through the teams	Assistant Engineer
Department	Ensure supply of drinking water through tankers, where the basic water supply is damaged due to disaster	Executive Engineer
	Provide drinking water in animal shelter homes	
	Ensure high rise hand pumps are constructed in flood affected areas	

Response Action of public health cell

Cell 6: Health

Hazard	Nodal Department	Supportive Department
All Hazards	Health Department	District Administration
Department	Actions	Responsible Officer
Health	Active control room for 24 hr functioning	Chief medical officer
	Send medical response team for immediate assistance in affected areas	
	Ensure supply of drinking water through tankers where the basic water supply is damaged due to disaster	
	Ensure good health related services in relief camps	
	Provide drinking water in animal shelter homes	
	Ensure that high rise hand pumps are constructed in flood affected areas	
	Ensure proper coordination with private and government medical units for effective response	
	Ensure sufficient availability of medicines and other equipment	
	Establish public information units are present in affected areas	
	Ensure availability of blood and coordinate with all private and government blood banks	
	Alert medical teams for prevention of any kind of epidemics	
	Publish daily and weekly bulletins	
	Establish medical units in relief camps	
	Provide special care to aged and pregnant women	

Response Action of health cell

Cell 7: Animal and fisheries

Hazard	Nodal Department	Supportive Department
All Hazards	Animal Husbandry Department	District Administration
Department	Actions	Responsible Officer
Animal Husbandry	Affected animals to be kept in high rised and safe shelters	District Animal Husbandry Officer
and Fisheries Department	Understanding animal health issues and provide treatment to the affected	
	Provide emergency medical care and safe shelter	
	Ensure availability of fodder, medicines, drinking water etc. at animal relief camps	
	Prepare safe shelter in case of bad weathers	
	Provide fans and air coolers in case of extreme heat	
	Provide proper immunization for protection against diseases	
	Establish and ensure proper coordination with agencies working for animal care	
	Conduct fisheries damage assessment	
	Issues daily and weekly bulletins	

Response action of animal and fisheries cell

Cell 8: Rural Road and PWD

Hazard	Nodal Department	Supportive Department
Earthquake,	Road Construction Department	Planning Department
Flood		Rural works Department
Department	Actions	Responsible Officer
Road	Repair damaged roads, give priorities in affected areas	Executive Engineer
Construction Department	Ensure removal of Debris	
	Establish alternative modes of transportation in case, primary routes are affected	
	Support in evacuation, relief and rescue work	
	Take proper actions for uninterrupted road communication	
	Issue daily/weekly bulletins	

Response action of rural road and PWD cell**Cell 9: Information and Communication Cell**

Hazard	Nodal Department	Supportive Department
All Hazard	Information and Public Relation Department	Disaster Management Authority
		IT Department BSNL District Administration
Department	Actions	Responsible Officer
District	Issue bulletins related with Damage and Need	Programme Professional
Disaster Management Authority	Collect helipad related information share it with the concerned department Send rainfall related updates daily	
Information and Public Relation Department	Organise press conferences Collect information of relief camp and people residing inside and share it with public Generate Awareness regarding Dos and Don'ts in Disasters Stop rumours by publishing the correct news Collect all requirement details and publish on district website through help of IT department Provide information to media	
IT Department	Upload information of contact number, relief camps and details of rescue and relief work Activate SMS system in vulnerable areas	

Response action of information and communication cell**Cell 10: Quality Check Cell**

Hazard	Nodal Department	Supportive Department
Flood,	Supply Department	NAZARAT
drought, earthquake and Fire		Health
Department	Actions	Responsible Officer
District	Issue bulletins related to Damage and Need	District Supply Officer
Supply Department	Quality Check of all relief material to be provided to affected people	
	Quality Check of all relief material using inside relief camps including water, food, medicines etc.	
	Quality check of drinking water	

Response action of quality check cell

Cell 11: Shelter Management

Hazard	Nodal Department	Supportive Department
Flood, drought, earthquake and Fire	District Disaster Management Authority	Health Education Animal Husbandry PHED Building Construction Panchayati Raj Department Supply Department
Department	Actions	Responsible Officer
Building	Ensure proper functioning of relief camps after considering minimum standards of relief.	Circle officer
Construction		
Department		
Panchayat Raj Department	Support District Disaster Management Authority for effective functioning of relief camps	
PHED and	Ensure proper drinking water facility in relief camps	In charge Officer
Animal Husbandry Department		
	Ensure availability of all required and essential material for animal relief	

Response action of shelter management cell

Cell 12: Transportation of Boats and Vehicles

Disaster	Nodal Department	Supportive Department
Flood, drought, earthquake and Fire	Transport Department	Supply Department District Administration
Department	Actions	Responsible Officer
Transportation	Ensure availability of Boat in flood affected area	District Transport officer
	Rescue affected people and take them to safe place	
	Ensure weekly remuneration to boat drivers	
	Locate vehicles working in emergency	
	Conduct proper maintenance of vehicle working in relief and response	
	Keep proper coordination for fuel refill	
	Ensure availability of tubes and motor boats	

Response action of Transportation of boats and vehicles cell

Cell 13: Communication and Electricity Supply Cell

Disaster	Nodal Department	Supportive Department
All Disaster	District NAZARAT	Electricity Department
		BSNL District Administration
Department	Actions	Responsible Officer
Transportation	Ensure availability of Boats in flood affected area	District Transport officer
	Rescue affected people and take them to safe place	
	Ensure weekly remuneration to boat drivers	
	Locating vehicles working in emergency	
	Conduct proper maintenance of vehicle working in relief and response	
	Keep proper coordination for fuel refill	
	Ensure availability of tubes and motor boats	

Response action of communication and electricity supply cell

Cell 14: Army Coordination Cell

Disaster	Nodal Department	Supportive Department
Flood,	Confidential Section	Police
Earthquake		NAZARAT
		Education
Department	Actions	Responsible Officer
Confidential	Receive army and other forces	Additional Collector
Section		
	Arrange food and accommodation for the forces at camps	

Response action of Army Coordination Supply Cell**Cell 15: Education and Anganwadi Cell**

Disaster	Nodal Department	Supportive Department
Flood,	ICDS Department	District Administration
Earthquake,		Social Welfare Department
Drought, Fire		Education Department
Department	Actions	Responsible Officer
Education Department	Ensure proper function of school during disaster	District Education Officer
ICDS Department	Monitor pregnant and lactating mothers	District Programme Officer
	Ensure and activate mobile medical units specially for girl child, women and aged people	
	Ensure proper functioning of Anganwadi	
	Distribute nutritional food for girl child, women, pregnant and lactating mothers	

Response action of education cell**Cell 16: NGO Coordination Cell**

Disaster	Nodal Department	Supportive Department
All Disaster	District Administration	Finance and planning
		Department
		DRDA District Industrial Centre
Department	Actions	Responsible Officer
District Administration	Ensure proper storage and registration of received relief material	DDC
	Take support of NGOs by conducting need assessment	
	Take support of NGOs for search and rescue related activities	
	Engage NGOs in conducting awareness generation activities	

Response action of NGO coordination cell

Special Tasks for coordination of Army/NDMF/SDMF/Police/Fire and Emergency Services

Police

Police department have an important role to play while responding to the emergencies. Police is one of the first respondents to any disaster situation, especially for maintaining law and order and conducting search and rescue related activities. Following are some of special task to be performed by the police department.

- Participate with local government in search, rescue and relief related activities;
- Deployment of extra police force in affected areas to maintain law and order;
- Keep special eye on anti-social elements of society;
- Deploy special teams in vulnerable and risky places
- Ensure proper arrangement for protecting relief material;
- Provide security of disaster affected houses and communities;
- Take special actions against Black marketers
- Crowd management at relief camps

NDRMF/SDRMF

NDRF and SDRF are the quick response forces designated at central and state levels. With the declaration of level 3 disaster, the teams will respond for conducting search, rescue and relief related activities in affected locations. Following are the special tasks to be performed by the teams.

- Ensure special response in the extreme events;
- Ensure staff rotation if the response is for longer days;
- Ensure debris removal;
- Ensure carcass disposal;
- Take affected people to safe places;
- Ensure first aid treatment to the affected people and refer them to nearest hospital;
- Ensure proper distribution of relief material during and after disaster;
- Establish coordination with other agencies working in disaster response

Fire and Emergency Services

- Respond to the fire situation and ensure safety of life and property;
- Conduct regular capacity building and awareness generation programmes for community, PRIs, industries, youth and voluntary organisations;
- Organise training of farmers and thresher operators for responding to fire in agriculture land;
- Support SDRMF and NDRMF for rescue and relief work;
- Ensure establishment of control rooms at district and divisional level;

Chapter 8:

Reconstruction and Rehabilitation

Particularly after natural disasters there is a greater need for all types of recovery to rebuild as well as to adopt rehabilitation programs. Often such programs deviate from their objective due to lack of sufficient knowledge, capacity and management skills, which would have led to long time to rebuild livelihoods and relief centers as well as other basic amenities such as water, sanitation, electricity etc. Therefore, safe and permanent recovery after disasters provides an important opportunity to increase the adaptability against future disasters. Reconstruction and rehabilitation works to be taken up for recovery will need to be implemented on the basis of the principle of **Build Back Better**. That is, the reconstruction works will be ensured better and resilient than the earlier structure.

8.1. Reconstruction

Post-disaster reconstruction programs include both immediate and long-term activities. The immediate activities include damage assessment, providing relief to the affected as per the standards set under the State Disaster Relief Fund and other specific schemes, activities related to the prevention of epidemics, repair and strengthening of damaged structures, while long term constructive activities. Multi- hazard safe housing construction, resettlement of livelihoods, infrastructure facilities as well as psychological, socio-economic including environmental and agricultural rehabilitation.

A. Immediate Reconstruction Activities

Damage Assessment

- For helping distribution of relief, it will be necessary to make detailed assessment of house damage, land damage; sand deposition on land, cattle damage, loss of utensils and clothing, crop damage, damage to fishermen's boat nets, etc. To assess the damage, teams will be formed by the District Magistrate under the leadership of the preferred officials and all the damage assessment activities should be done with digital cameras with periodic photography and videography.
- For the assessment of land and crop damage, the District Magistrate should be given joint accountability by the District Agriculture Officer and the officials of the Revenue Department and it should ensure that relief for crop damage are paid before sowing the rabi crop so that the farmers whose crops have been destroyed by the flood can get help to grow the rabi crop.
- Damage to roads, bridges, culverts, power transmission lines, telecommunication mediums, government buildings, hospitals / medicines, water supply schemes, handpumps etc. should be assessed by the concerned departmental officials during floods. District officials will coordinate the damage assessment and provide support as needed. After assessment of damage, proposals should be sent to the concerned departments for their quick restoration / reconstruction.
- For maintaining transparency, the cooperation and consultation of Panchayat / Ward Monitoring and Surveillance Committee should be obtained as per the time of assessment of damage.

Relief Distribution

- Immediately after assessing the damage, relief work will be started to the affected persons as per the prescribed norms. Relief distribution will be done as per the supervision / consultation of ward / panchayat level committees. Along with the relief distribution, the loss of life of humans, animals and injured persons will also be compensated as per Relief Norms.

- Distribution of food grains and cash grants should be paid to the affected families during the disaster as per the prescribed norms for one month. Given the severity of the situation, there may be a need to distribute free food grains for the next months as well. In such situation, according to the procedure laid down by the Disaster Management Department, the decision of distribution of food grains, etc. should be taken with the consent of the competent authority.
- The credit for the Rabi sowing should be provided to the Kisan Credit Card holders in the disaster-hit area. For this, a strategy should be formed in a meeting of the District Level Bankers Coordination Committee.
- If the damaged crop is covered under crop insurance, action should be taken by the Cooperative Department to pay the amount of crop insurance as soon as possible.
- After the disaster relief material should be provided in the relief camps / mega relief camps as per the standards guided by the state government. In this context please reference (Department Direction letter no 2493/DM Date 5/09/2008).

Prevention of Epidemics

Epidemic outbreaks are most likely in disaster affected areas. In such a situation, preventive steps should be taken by the Health Department.

Repair and Strengthening of damaged structures

After assessing the damage to the infrastructure by the concerned departments, action should be taken by adopting the prescribed procedure for their quick restoration / reconstruction. In this context, the work done can be seen as follows –

Improvement:

The main objective of the improvement is to make the buildings work immediately. The following points can be adopted for improvement –

- Removing minor deficiencies, such as cracks in walls, correcting fallen plaster.
- Repairing windows and doors.
- To check and repair technical faults in electric wiring.
- Examining and repairing facilities related to gas pipes, water pipes, sewerage and other plumbing.
- Repairing broken walls, roofs, cracks lying in the floor etc. and repainting.

Repair:

In this, mainly the damaged part is rebuilt. The following points fall under it –

- Remove thick cracks and replace them with new and thin layers on the walls.
- Tighten the cracked walls with a strong net on both sides and tighten it properly with bolts so that the wall remains strong.
- Use of proxy materials to fill the cracks between walls, columns, beams etc.

Where infrastructural repairs or improvements are necessary, it is right to make a light correction first so that adequate time is available for planning to avoid wastage and clutter of materials.

Strengthening existing buildings:

After any disaster, when buildings are assessed and it is found that these buildings are strong at the moment, but it will not be able to bear any other disaster, then in such a situation we need to be strengthened the existing building further. This process of strengthening can be performed under the following points —

- By increasing the number of walls and columns or by increasing or strengthening the area of the wall from both sides.
- Properly connecting one wall to another wall or one column to another column so that in case of earthquake etc., the possibility of falling walls is minimized and all members are protected.
- Pay special attention to the weak points in terms of security.

B. Long term activities

After disaster, recovery plays a most important role in;

- Education;
- Health;
- Livelihood;
- Rehabilitation of housing and its associated structures

Therefore, for the sustainable development of disaster affected communities, it require to undertake extensive and intensive activities. Under this, the following activities and mediums will have to be included in an organized format and in collaboration with the affected communities. This will ensure sustainable development of the community.

A. Design & Material:

There should be suitable design for the reconstruction of the housing. Such housing should be culturally valid, environmentally sound and capable of meeting the needs of the community. The materials and technology used in the housing should also be in keeping with the disaster and that too should be in the knowledge of the community so that when they are given accommodation they will be able to look after it. It would be better if the people who want to stay in the house should be looked after.

B. Disaster Resilient Construction;

This committee will consist of the Department of Building and Road Construction, Panchayati Raj Department and other members, who will ensure to make objectionable residence on the principles of Build Back Better. These members will collaborate in designing a multi-disaster design and monitoring the entire construction process. The committee will also ensure that objectionable technologies are included in various schemes and developmental projects so that the funds of those schemes can be used in reconstruction work after disaster. For example, Pradhan Mantri Awaas Yojana and other schemes related to building construction for Scheduled Castes and Scheduled Tribes.

B.I. Basic Facilities

The District Disaster Management Authority will ensure the provision of the following basic facilities at all reconstruction and relocation sites:

A. Health facilities

- The District Disaster Management Authority will set up a committee to ensure availability of health facilities at all reconstruction sites in the district.
- This committee will coordinate with the Health Department with various construction agencies and departments such as private agencies, Department of Building and Road Construction, Urban Development Department, Building Board etc. and ensure to provide health facilities including necessary structures at all reconstruction sites.
- Various government schemes like National Rural Health Mission etc. can be used for this.

B. Education Facilities:

- The District Disaster Management Authority will set up a committee to ensure education facilities are available at all reconstruction sites in the district.
- This committee along with the Education Department will coordinate with various construction agencies and departments like Building and Road Construction Department, Urban Development Department etc. to ensure education for disaster affected children / students in the district.
- Various government schemes like Anganwadi program, creche program, child library etc. can be used for this.

c. Water

- District Disaster Management Authority will constitute a committee to ensure continuous water supply at all reconstruction sites in the district.
- This committee will also ensure uninterrupted supply of water for drinking and other uses by the Public Health Engineering Department through pipelines and other arrangements.
- This committee will also be formed in collaboration with various reconstruction agencies to provide adequate water storage facilities.

D. Drainage and sanitation facilities

- District Disaster Management Authority will constitute a committee to provide proper drainage and sanitation facilities for all reconstruction sites in the district.
- Coordinate with Public Health Engineering Department and construction agencies like - Private Agencies, Building and Road Construction Department, Urban Development Department, Housing Board etc. to ensure proper drainage system and other hygiene and sanitation activities at rehabilitation sites.

E. Lightning

- District Disaster Management Authority will constitute a committee to ensure adequate arrangement of electricity and lighting for all reconstruction sites in the district.
- This committee will coordinate with the electricity department and the municipal corporation to ensure availability of electricity and related infrastructure with permanent connections at all rehabilitation sites.

F. Facilities for transport and connectivity of Roads

- The District Disaster Management Authority will constitute a committee to provide proper road and transport facilities for all reconstruction sites in the district.
- This committee will coordinate with Public Health Engineering department, Bihar Roadways, Building and Road Construction Department etc. to ensure transport and road facilities for the reconstruction sites.

8.2. Rehabilitation

Post-disaster rehabilitation is a complex process involving various aspects of livelihood resettlement, mental care, environmental rehabilitation etc. To make the rehabilitation process effective, there will be a need to establish strong relationships with governmental, non-governmental organizations as well as international organizations and look for opportunities to work with the community in the district.

In the rehabilitation process, the main points of rehabilitation will have to be prepared on the following

points:

- **Socio-economic rehabilitation:**

Under socio-economic rehabilitation, the process of ensuring stability of livelihood and its improvement after disaster will be emphasized. For this, a committee will be formed in the District Disaster Management Authority, which will work on the following points-

- Improvement in livelihood sector, identification of new livelihood opportunities and to ensure engagement with various schemes / programs; MNREGA, animal husbandry, seed production etc.
- Register disaster-affected widows, destitute persons and link them with social welfare schemes.
- Registering aged people and coordinating with local voluntary organizations to provide proper arrangements to live smoothly after the disaster.
- Establishment of play schools at community level and ensure regular health checkup, nutrition, sports and other related activities in the schools.
- Establish contact with various government / non-government agencies such as Social Welfare Department, Red Cross Society etc. for providing artificial hands, feet, hearing machine, wheel chairs etc. to physically handicapped persons and proper arrangements to get scholarships etc.
- Coordinate with the Social Welfare Department and provide technical skills to support the livelihood of the affected people belonging to Scheduled Castes and Scheduled Tribes and Other Backward Classes.

- **Psychological Rehabilitation**

- A committee will be set up by the District Disaster Management Authority to rescue people from mental trauma in the disaster-affected areas.
- This committee will coordinate with the Health Department, Women and Child Welfare Department to carry out various activities at the community level to overcome the trauma of disaster affected communities.
- Various types of programs like Bal Bhavan, playground, hobby classes etc. can be used for psychological care of disaster affected children.

- **Agricultural Rehabilitation**

- The District Disaster Management Authority will set up an Agricultural Rehabilitation Committee, which will ensure soil improvement work in the event of changes in soil fertility and composition due to the disaster.
- The committee will set up a soil testing laboratory in the district in collaboration with the Agriculture Department, which will take necessary steps for agricultural rehabilitation and undertake research work.
- The committee will seek the cooperation of voluntary organizations working in the district to work on agricultural rehabilitation.
- In view of the changes in the soil, the committee will also make suggestions about cropping method, proper combination of fertilizers and pesticides etc. and will also prepare such a model.

- **Environmental Rehabilitation**

- The District Disaster Management Authority will constitute an Environmental

Rehabilitation Committee to deal with problems related to water resources, air, soil pollution and other environment related problems.

- This committee will coordinate with Bihar State Pollution Control Board, Forest and Environment Department, Agriculture Department and Health Department to check, control and monitor pollution levels.
- This committee will monitor rehabilitation sites and take necessary steps to reduce pollution.

- **Restoration of social capital**

- During the distribution of housing, social relations of the people will remain as before, so that the District Disaster Management Authority will set up a social capital rehabilitation committee.
- The committee will coordinate with the distribution agency to ensure that the housing allocation process does not affect the social relations of the people. The committee will ensure that the houses, between which there is good interaction between them, are allotted to nearby areas.

During the reconstruction and rehabilitation process, all necessary aspects should be taken care and all activities should be carried out smoothly and the District Disaster Management Authority should do monitoring of entire process.

Chapter 9:

Budget Financial Resources

The central government has created the National Disaster Response Fund at the national level and State Disaster Response and Mitigation Fund (SDMF) at the state level. In the SDMF, the central govt. provides 75% of the amount and 25% of the matching fund has to be put in by the state.²⁴ State governments are responsible for the establishment of State and District Disaster Response and Mitigation Funds, under section 48 of Disaster Management Act, 2005.

Following are the Section of Disaster Management Act, 2005 seeks to provide for the constitution of the following funds:

- Section 39, seeks to enjoin upon each department of the State Government to allocate funds for prevention of disaster, mitigation, capacity building and preparedness.
- Section 46, Constitution of National Disaster Response Fund
- Section 47, Constitution of National Disaster Mitigation Fund
- Section 48, Seeks to provide for the establishment of State & District Disaster Response Fund and Disaster Mitigation Funds.
- Section 49, Seeks to enjoin upon every ministry or department of Government of India to make provision of funds in its annual budget for the purposes of carrying out the activities or programmes set out in its Disaster Management Plan.
- Section 50, provides for emergency procurement and accounting norms whereas section 66 provides norms for payment of compensation.

National Disaster Response Fund and State Disaster Response Fund are created for meeting the expenses for emergency response, relief and rehabilitation and to facilitate immediate relief in case of any disaster. For the Use of National Disaster Response Fund and State Disaster Response Fund, Ministry of Home affairs, Government of India, has provided revise guidelines and SOPs for consideration of Local Disasters. Following that on February and March 2015, Government of Bihar has also considered coverage of hailstorm damages. It has also issues guideline and SOPs for its implementation which can be implemented from April 2015 to 2022.

Currently, Government of Bihar is also purchasing Motor boats, Constructing warehouses, Strengthening of emergency operation shelters, Purchasing search and rescue equipment, Strengthening of early warning system, as well as giving due focus on awareness generation and capacity building of all stakeholders.

Many state and centrally sponsored programmes and schemes can be helpful for minimising disaster risk and capacity building.

Schemes and programmes supporting DRR

Following are the schemes reported by the line departments to be in use in Sitamarhi. The list is presented in a department-wise manner and contains, besides the department itself, the scheme, its benefits, and eligibility criteria.

S.	Scheme	Actions	Eligibility	
Department				
1	Chief Ministers' Crash Seed Programme	Distribution of Foundation seeds of selected crops in small packets in half the cost to the two farmers selected from each village for each selected crop	Block Agricultural Officer selects the beneficiary and assists farmers in seed production	Agriculture Department
2	Beej Gram Yojna	Desirous farmers of selected villages are given foundation seed at half the cost, Seed storage bins of 5 qtrs. capacity given on subsidy	Block Agricultural Officer selects the villages for the Yojna and assists farmers in seed production	Agriculture Department

3	Repair and Maintenance Grant	Min. Three Class rooms – Rs.5000 Four to Five Class rooms – Rs.10000 Six and more Class rooms –Rs.15000	School building should be 3 or more than 3 years old with at least 3 class rooms/rooms	Education Department
4	Vidhyalaya Siksha Samiti (VSS) Grant	Primary – Rs.5000 Upper Primary – Rs.7500	All Schools get 5000-7500 Grant per year	Education Department
5	Fish Farmer Training Scheme	<ul style="list-style-type: none"> • Training of fish farmers in different institutions/colleges of ICAR outside the state • Six days state-level training in Patna for fish farmers • Ten day-training of fish farmers in all the district headquarters of the state • 100% subsidy 	<ul style="list-style-type: none"> • Land possession Certificate (LPC) signed by CO • There should not be any previous loans 	Fisheries Department
6	Fish Seed Distribution on Subsidy Scheme	<ul style="list-style-type: none"> • 50% subsidy 	<ul style="list-style-type: none"> • Trained in fisheries • Fish farmers have max. 1 hectare pond land and in group 2 hectare pond land is required 	Fisheries Department
7	Wetland Development Scheme	<ul style="list-style-type: none"> • On the investment of 3.88 Lakh per Hectare, a subsidy of 50% • Remaining amount either by self or by bank loan 	<ul style="list-style-type: none"> • All the important documents related to ownership of the land should be attached 	Fisheries Department
8	National Agriculture Development Scheme	<p>a) Construction of Fish Seed Hatchery</p> <ul style="list-style-type: none"> • Minimum 8-10 million fish ponds yearly production capacity • Hatchery construction in Rs.15 lakh • 50% subsidies will be given • Remaining amount either by self or by bank loan • construction in minimum 3 Hectare <p>b) Construction of New Ponds</p> <p>Unit cost 6.972 Lakhs per Hectare</p> <ul style="list-style-type: none"> • 50% Subsidy • Remaining amount either by self or by bank loan <p>c) Installation of Tube wells and Pump sets Scheme</p> <ul style="list-style-type: none"> • Minimum one Acre government/private ponds • Tube well unit cost will be Rs.50,000 and Pump set unit cost will be <ul style="list-style-type: none"> ○ Rs.25,000 • 50% Subsidy • Remaining amount either by self or by bank loan 		Fisheries Department

9	Group accident Insurance Scheme	<ul style="list-style-type: none"> Death or permanently handicapped, then the family will get Rs.2.00 lakh, if temporarily handicapped, then Rs.1.00 lakh and hospital expenses Rs.10.00 thousand estimated 100% Subsidy 	<ul style="list-style-type: none"> Active member of Fisherman Cooperative Society Age limit 18 to 70 years 	Fisheries Department
10	Special Schemes for SC and ST	<p>a) Construction of Nursery Pond</p> <ul style="list-style-type: none"> Construction in 50 decibel area Unit cost Rs.1.51 lakh 90% Subsidy <p>b) Installation of Tube well and Pump sets</p> <ul style="list-style-type: none"> Tube well unit cost Rs.50,000 and pump set unit cost Rs.25,000 90% subsidy c) Training 10 days Technical Fisheries training in District Headquarters for ST community people 100% subsidy 	<ul style="list-style-type: none"> Caste and Income certificate 	Fisheries Department
11	Rogi Kalyan Samiti (RKS) - Hospital Maintenance	75000 to 500000	Any infrastructural loss occurred from PHCs to District Hospital	Health Department
12	Renovation of Minor Irrigation	Tube wells are given to the farmers	Old tube well should be present in order to get replaced	Irrigation Department
13	Hand Pump Scheme	112 Pumps (procurement of material is done and agencies are fixed for this year)	Flood affected blocks (Sahebganj and Paru)	Public Health Engineering Department
14	World Bank	Pure water supply	Habitations, villages, Panchayats, gram sabha	Public Health Engineering Department
15	Repair and Maintenance Scheme	7.5 Rs.! Sq. ft. (Plinth area rate)	Every Year	Building Construction Department (PwD) Department
16	Sam Vikas Yojna	Estimated amount for the construction of New Building	Whenever required	Building Construction Department (PwD) Department
17	OPRMC (Road Maintenance Contract)	For the next five year after the approval of the contractor - contractor needs to take care of all the roads, which are under Road Construction Department, even during the time of any disaster, and has to be ready on field whenever required.	It is for the five year. E-Tender process has been followed.	Road Construction Department

18	FDR (Flood Damage Report) Scheme	Government gives the fund based on estimated loss due to disasters (e.g. flood).	Flood inundated roads or damaged road due to water.	Road Construction Department
19	MGNREGA	All the rural areas, which are hazard-prone, are allotted money for constructing small shelters for the villagers. According to requirements, estimate has been prepared and then technical and administrative sanctions are done and money is allotted for construction for the one financial year.	The land should be government land where construction is going to happen, if not, then the owner should be ready to give the land to Bihar Government without any compensation.	District Rural Development Agency
20	Gramin Punnar Uthhan Scheme linked with MGNREGA	All the rural areas where ponds etc. are made for the fisheries production, poultry production and production of forest products. According to requirements, estimates have been	Person should be under BPL category or has land less than 1 acre.	District Rural Development Agency
21	Indra Awas Yojna	70000 INR per household	Person should be under BPL category or if people are affected by any disaster or by Kala-azar, then the APL households can also avail the benefits	District Rural Development Agency
22	Waste Management Fund	Estimated Amount	It is given every year to each Municipality	Municipality
23	DFID	Two JCBs are provided by government in 2013	-	Municipality
24	Anti-Erosion Scheme	Estimate has been given every year for funds	Erosion affected area development	Water Resource Department
25.	Rashtriya Swasthya Bima Yojna	To provide health insurance coverage for Below Poverty Line (BPL) families.	Insurance and Risk Transfer	Insurance (Disaster Insurance)
26.	Pradhan Mantri Awas Yojna (PMAY)	To enable better living and drive economic growth stressing on the need for people centric urban planning and development.	Minimizing risk by constructing Disaster Resistant housing in Urban areas	Construction of disaster resistant houses
27.	Pradhan Mantri Suraksha Bima Yojna (PMSBY)	An accidental Death and Disability insurance scheme	Insurance and Risk Transfer	Insurance
28.	The Pradhan Mantri Jeevan Jyoti Bima Yojna (PMJJBY)	A term life insurance policy and it will provide life insurance coverage on the death of the policyholder.	Insurance and Risk Transfer	Insurance

State Schemes for Disaster Risk Reduction

Sr.	Name of the schemes	Actions	DRR	Activities for DRR
1.	Mukhya Mantri Seven Nischay Scheme	Ensure piped drinking water, youth and women empowerment, electrification, road and drainage and toilet to household	Capacity building and awareness generation of youth and disaster resilient infrastructure development	
2.	Mukhya Mantri Gram Sadak Yojna (MMGSY)	Good all-weather road connectivity to unconnected villages	Useful in pre as well as post disaster situation for road	Construction of all-weather roads in remote areas
3.	Mukhya Mantri Nihshaktjan Swarojgar Yojna	The scheme extends loans for self-employment to persons with disabilities.	Livelihood generation for most vulnerable group	Livelihood Generation
4.	Flood Protection Works	Construct and repair river and canal embankments, Construct, extend and repair canals and Provide storm water drainage system	Important in flood prone areas to minimize flood risk	Construction and strengthening of river and canal embankments. Anti-Erosion work Village protection work.
5.	Foot and Mouth Disease Control Programme	Prevent, control and contain Foot and Mouth Disease	Prevent animal epidemics during and after disaster	Organize HS BQ (Haemorrhagic Septicaemia and Black Quarter Combined) vaccination drives
6.	Samarthya Scheme	The scheme aims at physical, social, economic and psychological rehabilitation of Persons with disabilities.	Provision of aids and appliances such as tricycles, hearing aid, callipers etc.	Providing aids and appliances such as tricycles, hearing aid, callipers etc. to
7.	Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP Scheme)	To assist the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhance their economic potential.	Provision of assistance to the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances	Providing of assistance to the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances
8.	Janani Evam Bal Suraksha Yojana	Reduce maternal and neo-natal mortality by promoting institutional deliveries	To provide better health care facilities	Provide assistance to disaster affected families
9.	National Vector-borne Disease Control Programme	Prevention and control of vector borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya	To prevent epidemic	Organize community awareness Programmes and vaccination drives

Other Options

To minimize the adverse financial and economic impact of disaster, other financial strategies are risk insurance, micro-insurance, Corporate Social Responsibility (CSR) etc. District Disaster Management Authority should follow Public Private Partnership (PPP) mode for risk transfer and insurance. The authority can use Bihar Rajya Fasal Sahayta Yojana (BRFSY), and Krishi Bima Yojna.

Prime Minister Relief Fund

Recently at national level, Prime Minister Relief fund has been setup with the support from citizens. Following are the objectives of the Prime Minister Relief fund

- Provide immediate financial assistance to the victims of disaster;
- Support search and rescue related work;
- Provide medical assistance to the victims;
- Provide shelter, food, clean drinking water to victims;
- For restoration of public infrastructure;
- For restoration of education facilities;

Member of Parliament Relief Fund

Local Members of the Parliament can use up to 10 lakh INR for any natural or manmade events for response, relief and recovery work.

Capacity building Fund:

For responding to any disaster situation, trained manpower is very essential. They can reduce loss to life and property. Around 10% of State Disaster Relief fund can be used for training and capacity building purposes.

Chapter 10

Monitoring, Evaluation and Update of DDMP

The District Disaster Management Plan is the sum and substance of the Horizontal and the Vertical disaster management plans in the district. District Disaster Management Plan of Sitamarhi is a public document, which neither is a confidential document nor it is restricted to any particular section or department of administration. The underlying principal of disaster management is that it has to be a part of all departments and none can fold fingers against it.

Authority for maintaining & reviewing the DDMP

The District Disaster Management Authority (DDMA), Sitamarhi will update the DDMP annually and circulate the approved copies to all the stakeholders in Sitamarhi. DDMA will ensure the planning, coordination, monitoring and implementation of DDMP about the mentioned below clauses of the DM Act, 2005:

- Section 31, Clause (4) of DM Act 2005, mentions that the District Plan shall be reviewed and updated annually.
- As per sub-section (7), The District Authority shall review, from time to time, the implementation of the Plan and issue such instructions to different departments of the Government in the district, as it may deem necessary for the implementation thereof.

Proper monitoring & evaluation of the DDMP

DDMA will organize half-yearly meeting, which will be headed by the chairperson, to review disaster management activities in the state and updating the DDMP accordingly. All concerned departments and agencies have to participate and give recommendations on specific issues on Disaster Management and submit their updated reports quarterly.

Post-disaster evaluation mechanism for DDMP

The DDMA Chairman shall make special arrangements to collect data on a particular disaster irrespective of its size and vulnerability. This post-disaster evaluation mechanism shall be set up comprising of qualified professionals, experts and researchers and crosscheck the collected data for future references. The DDMA will evaluate the DDMP by conducting meetings and consulting all the stakeholders.

Schedule for update of DDMP:

DDMP shall be updated:

1. Regular data collection system from the district Emergency Operations Centre (EOC)
2. Analysis of data
3. Review by Chairperson, DDMA
4. Updating and disseminating the updated plan

Uploading of updated plans at DDMA/SDMA websites:

District Disaster Management Plan of the district is a public document and should be uploaded on the DDMA/SDMA websites under the supervision of the District Information Officer after each update with prior approval of the Chairman of the DDMA.

Conducting of mock drills:

Section 30 (2) (x) of DM Act 2005, states that "District Authority shall review the state of capabilities for responding to any disaster or threatening disaster situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation as may be necessary". Similarly, Section 30 (2) (xi) of DM Act 2005, also states that "District Authority shall review the preparedness measures and give directions to the concerned departments at the district level or other concerned authorities where necessary, for bringing the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation".

Mock-drills help in evaluating disaster preparedness measures, identify gaps and improving coordination within different government departments, non-government agencies and communities. They help in identifying the extent to which the disaster plan and SOPs are effective and help in revising the plan through lessons learnt and gaps identified. These drills enhance the ability to respond faster, better and in an organized manner during the response and recovery phase.

1. The Responsible parties for organizing district drills

Mock Drills will be conducted within District Sitamarhi at various levels:

Level 1: District Level

Conducting of District level Mock drills will be the responsibility of the District Magistrate, Sitamarhi, along with Additional District Magistrate Sitamarhi, in association with Key Participants Involved in Conducting a Mock drills the incident of disaster may be:-

DDMA comprising of DM; ADM; SP; EE(PWD, PHD, Electricity);

- CMO, President Zila Parishad.
- Revenue Department
- SDM (C), Circle officer, Block Development Officer
- Municipal Council! Nagar Parishad
- Elected representatives of Panchayat Samiti -Sarpanch, Gram Sevak,
- Fire Brigade Personnel
- Home Guards, Volunteers.
- Transport Department
- Food and Civil Supply Department
- Para- military forces, NDRF, SDRF as the situation of the incident may demand

Level 2: Sub Divisional Level

The Sub Divisional Magistrate (Civil) will be the concerned authority to conduct mock exercise at the Sub-Division level.

Level 3: Block Level

At Block Level, the Block Development Officer will be the nodal authority to get the mock exercise conducted.

Level 4: Panchayat Level

The Mukhiya will be nodal officer for organizing the mock drills at Gram Panchayat level with Village Disaster Management Committees in each village of district.

Level 5: Departmental Level

At the Departmental level, the HODs of the concerned departments/units are responsible for the on - site mock drills and off- site drills with the district administration for their respective departments and concerned areas.

Levels 2, 3, 4 and 5 will carry out the mock exercise with intimation of the same to the District Administration and send the reports of the lessons learnt and gaps identified for further up gradation of the plans after the drill.

5. Schedule for organizing drills

District administration shall hold mandatory mock drill twice in a year for the monitoring, evaluation, update and maintenance of DDMP. First Mock drill will be held before the beginning of the tourist season in the Month of March or April. Second drill will be held before the onset for checking the efficiency of the departments for any unforeseen incidence from taking place.

All the above-mentioned levels will conduct mock drills at least once in every six months to evaluate their disaster management plans.

Monitoring & gap evaluation:

1. Check that Personnel involved in Execution of DDMP are trained with the latest skills

The District Authority shall check whether all the personnel involved in execution of DDMP are trained and updated with the skills necessary in line with the updated SOPs. As per Section 30 (2) (xii) of DM Act 2005, the District Authority shall organize and coordinate specialized training programmes for different levels of officers, employees & voluntary rescue workers in the district.

Half-yearly meeting for DDMP update shall be organized by DDMA, under the leadership of District Magistrate. In addition, it should analyse the identified gaps. All concerned departments and agencies have to participate and give recommendations on specific issues of District Disaster Management Plan, and submit their Plans.

6. Check on-site / off site Plans of Major Accidental Hazard Units

All industrial units and power projects within Sitamarhi district will submit their on-site/ off-site plans, after regular update and maintenance to the DDMA for review and evaluation. They will regularly conduct on-site / off- site mock exercises annually or biannually as the case may be, to review, evaluate, and update their plans.

Coordination mechanism

The Coordination between District and Local governments is vital for the proper disaster management. It requires both inter departmental and intra departmental coordination with all the stakeholders, line departments and local bodies like Rural works department, water resource, Health, fire and emergency services, police, BSNL, Food and consumer protection, forest, Disaster Management, Education, Agriculture, Transport Department, Red Cross, Municipality, NGO's CBO's and other local authorities in partnerships. Also, recognize that each level of the disaster management arrangements must work collaboratively to ensure the effective coordination of planning, services, information and resources necessary for comprehensive disaster management.

Interdepartmental Coordination:

Each stake holder department i.e., Rural works department, water resource, Health, fire and emergency services, police, BSNL, Food and consumer protection, Forest, Disaster Management, Education, Agriculture, Transport Department, Red Cross, Municipality will constitute departmental level disaster management committee headed by a gazetted officer pertaining to that department. The committees will organise quarterly meetings of the committee members to analyse the preparedness level of the department about disaster management. The committee will also decide the measures to be taken for reducing the gaps in their capacities and keep the proper record of the same.

Sub Division Level Coordination Mechanism:

As per the institutional mechanism, the sub divisional officer (Civil) will call for the quarterly meeting at the sub division level disaster management committee to review the preparedness level and plan to reduce the gaps identified. The chairperson will further report the situation to the DDMA and send the requisition of resources if required.

Circle level Coordination Mechanism:-

As per the institutional mechanism, circle officer will call for the quarterly meeting at the tehsil level disaster management committee to review the preparedness level and plan to reduce the gaps identified at circle level.

Arrangements at local level

The local level manages disasters within their own communities. Block, sub division and district levels are there to provide additional resources, support, assistance and expertise as required. Local government is the key management agency for disaster events at local level. Local government achieves coordinated disaster management approach through Local Disaster Management committees.

In the context of relief, coordination can be done by NDRF / SDRF, Army, NGOs, private sectors / individuals in the following manner -

- In Sitamarhi district, SDRF is deputed. During the time of disaster, deputed SDRF will be used for quick response. If there is a possibility of third level disaster, then in that case the district magistrate will demand additional force from the state.
- After obtaining detailed information regarding the disaster from the nodal officer, the unit commander will discuss the nature of the disaster with the SDRF headquarters and decide how many teams will be formed where it will be deploy etc.
- During any disaster, activities are carried out in a certain order under which the work ranging from information transmission to implementation is performed by various departments concerned.
- If any person / institution / sector wants to provide assistance and relief during disaster, then it can be given in District Relief Assistance Center in the office of District Magistrate, Sitamarhi constituted under Red Cross Society.
- The relief material received can be distributed to the flood affected people through District RedCrossSociety.
- Cash can be deposited in the Chief Minister Relief Fund.
- Nodal officers can be nominated by the District Magistrate for the receipt and distribution of materials received directly at the district level.
- Distribution of materials received as above can be done through the concerned agency as far as possible under the supervision of Panchayat / Ward level relief cum monitoring committee. If agency representatives are not available, then distribution can be done through district administration.