

**Jamui**  
**District Disaster Management**  
**Plan (DDMP)**

**(September 2022)**

Prepared by

District Disaster Management Authority  
(DDMA), Jamui

## सन्देश

जिला आपदा- प्रबंधन योजना (District Disaster Management Plan) को सभी के समक्ष प्रस्तुत करते हुए हमें अपार हर्ष हो रहा है। इस योजना का मुख्य उद्देश्य जिला जमुई को 'Disaster Resilient' बनाना है। यह योजना निश्चित रूप से जिला प्रशासन को आपदा प्रबंधन नियोजन तथा उसके प्रभावी क्रियान्वयन में मजबूती प्रदान करेगा।

जिला जमुई में प्राकृतिक एवं मानव निर्मित आपदाओं का प्रभाव निरन्तर बना रहता है। इस योजना में प्राकृतिक एवं मानव निर्मित आपदाओं के उत्पन्न होने की दशा में बचाव के सुव्यस्थित उपायों का उल्लेख किया गया है। योजना में आपदा पूर्व रोकथाम एवं शमन के उपायों को आपदाओं के पूर्व के अनुभवों के आधार पर संज्ञान में लिया गया है। जिला आपदा प्रबंधन योजना विकसित करते हुए यह ध्यान रखा गया है, कि जिला प्रशासन को इसके माध्यम से आपदाओं की चुनौतियों का सामना करने में आसानी हो और जिला प्रशासन त्वरित गति से प्रत्युत्तर कार्रवाई क्रियान्वित करते हुए आपदा प्रभावित लोगों का सहयोग किया जा सके।

इस योजना में आपदा प्रबंधन अधिनियम 2005, सेन्डई फ्रेमवर्क-2015-2030, बिहार डीआरआर रोड मैप 2015-2030 एवं राष्ट्रीय आपदा प्रबंधन नीति 2009, सतत विकास लक्ष्य 2015-2030, आदि के प्रमुख सुझावों का निगमन किया गया है।

इसके प्रकाशन हेतु जिला स्तरीय पदाधिकारी, पुलिस प्रशासन, अनुमंडल पदाधिकारी, अंचलाधिकारी, जिला आपदा प्रशाखा, बिहार राज्य आपदा प्रबंधन प्राधिकरण, हितभागियों द्वारा किया गया प्रयास काफी सराहनीय रहा है।

## सन्देश

जिला आपदा प्रबंधन योजना एक समुदाय आधारित आपदा प्रबंधन योजना है। इस योजना में समुदाय की सहभागिता से आपदा प्रबंधन को दृष्टिगत रखते हुए जिला स्तरीय विभागों तथा अन्य हितभागियों द्वारा कार्रवाईयाँ/गतिविधियाँ बनायी गई हैं। जिला आपदा प्रबंधन योजना जिला को आपदा प्रबंधन में मजबूती प्रदान करेगा।

आशा है, कि यह योजना जलवायु परिवर्तन के दृष्टिगत आपदा से निपटने तथा उससे होने वाले क्षति को कम करने एवं विभिन्न विभागों के कार्यों तथा गतिविधियों में आपदा खतरा न्यूनीकरण के तत्वों के समावेशन में अत्यन्त उपयोगी सिद्ध होगा। भविष्य में आपदा प्रबंधन योजना के संबंध में उसके बेहतर प्रभाव व उपयोग के दृष्टिगत समस्त हितभागियों के तरफ से दिये जाने वाले सुझावों का स्वागत किया जायेगा तथा योजना में समाविष्ट किया जायेगा।

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# CHAPTER - 1

## INTRODUCTION

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### 1.1 Background

Bihar is a multi-hazard prone State exposed to a range of natural disasters including Earthquakes, Floods, Hail storm, Drought, Lightning, Fire, extreme cold and heat waves etc. The vagaries of nature are such that the State faces paradox of floods and drought at the same time and sometimes in the same districts. Jamui District is mainly prone to drought but also vulnerable to earthquakes, lightning, Drowning (Rivers, Ponds and Ditch), Road Accidents other hazards. This District DM Plan of Jamui aims at addressing the multi-hazard nature of the disaster management challenges in the district. Under the DM Act 2005, Section 31, it is mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous and integrated DDMP and to take the measures for its implementation for disaster preparedness, response, capacity building, prevention and mitigation.

So far, Bihar is the only State in India, which has come out with a clear DRR Roadmap and specific action plans on the lines of Sendai Framework for Disaster Risk Reduction (SFDRR). The key commitments of Bihar DRR Roadmap are mainstreaming DRR to strengthen emergency preparedness and response, capacity development of communities and key stakeholders and the targets are reduction in lives lost, affected people due to disasters and decrease in economic loss. The DDMP of Jamui has been prepared keeping in view of the spirit of all these targets and commitments, which have been addressed in different chapters of the DDMP.

### 1.2 Objectives

The overall aim is to prepare and finalize the multi hazard district disaster management plan (DDMP) of Jamui District. DDMP will be multi sectoral and multi-level in nature and design. And the main objectives of this DDMP are to:

- i. Identify the areas vulnerable to major types of the hazards in the district.

- ii. Adopt proactive measures at district level by all the government departments to prevent disaster and mitigate its effects.
- iii. Define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- iv. Enhance disaster resilience of the people in the district by way of capacity building.
- v. Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
- vi. Manage future development to mitigate the effect of natural hazards in the district.
- vii. Set up an Emergency Operations Centre at the District level to function effectively in search, rescue, and response.
- viii. Develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- ix. Set up an early warning system so as to prepare the community to deal with the disaster and responsive communication system based upon fail-proof proven technology.
- x. 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.
- xi. 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.
- xii. Make the use of media in disaster management.
- xiii. Ensure rehabilitation of the affected people and reconstruction measures to be taken by different government departments at district level and local authority.

### 1.3 Scope

The Central and State Governments provide financial and logistic support in case of a serious disaster and also lay down policies and guidelines for disaster risk reduction. However, the responsibility of implementing government's initiatives in all phases of disaster management and providing linkages with the community and other stakeholders, as also responding to a disaster in an efficient and prompt manner primarily rests with the District Administration/ District Disaster Management Authority (DDMA). Hence, the DM Plan presented here has to be implemented in a decentralized manner to ensure that the authority, responsibility, accountability and capacity to take adequate prevention and mitigation measures and respond to a disaster in prompt and

effective manner are distributed across different levels of district administration.

As per the scope of DDMP, involvement of all the key line departments including revenue, police, health, fire safety, rural development, public works department, education, public distribution system, women and child development, transport, PRIs and their functionaries, animal husbandry, agriculture, home guards, ULBs, NGOs, CBOs, NYKS, NSS, Private Sector, and communities at the District and Sub District level has been ensured as the active participants in preparation and implementation of multi hazard DDMP. The plan (DDMP) captures both natural and manmade hazards applicable in the administrative boundary of Jamui District.

#### **1.4 Plan Development Methodology**

The methodology adopted for Development of District Disaster Management Plan of Jamui included the following: comprehensive review of available secondary data; brainstorming during BSDMA workshops; collection of primary data using structured and semi-structured questionnaire and its analysis; and interaction and consultation with the concerned stakeholders. The interactions were held with all the key Departments, nodal agencies, officials and local communities. Based on the primary and secondary data analysis and the resultant resource mapping, the detailed Hazard Vulnerability Capacity Risk Assessment (HVCRA) was carried out, taking into account the ongoing development programs and the possible mainstreaming strategies. The draft DDMP has been prepared on the lines of DM Act 2005, NDMA's DDMP framework and DRR Roadmap of Bihar. It has also been modified, as per BSDMA's prescribed template.

#### **1.5 DDMP Implementation Strategy**

The strategy adopted to develop and implement the DDMP started with the review of National DM Act 2005, National Framework for District Disaster Management Plan 2014, State Disaster Management Plan, Policy and DRR Roadmap, followed by interaction with key stakeholders including Line Departments, Nodal Officials, PRIs, CBOs, NGOs, Private sector & representatives of local community. The perspective for undertaking DDMP, including capacity assessment and strategy development, has been one of inclusive, equitable, safe and sustainable disaster management on the ground. Synergy and linkages have been maintained with relevant provisions, while preparing response and risk reduction plan. Moreover, Emergency Support Functions (ESFs), Emergency Operations Centers (EOCs), Incident Response System (IRS), mainstreaming of development programs, prevention, and mitigation measures and cross cutting

issues have been covered extensively.

At District level, the District Magistrate has been designated as Responsible Officer (RO) and the other line departments at District Head Quarter are responsible to deal with all the phases of disaster management within the District. The role of other stakeholders has been explained in DDMP.

### **1.6 Plan Updating and Review**

As per DM Act Section 31(4) District Plan (DDMP) will be reviewed and updated annually. Purpose of updating is to determine adequacy of resources, coordination amongst agencies etc. DDMA will review the implementation of plan and issue instructions to the concerned departments.

## CHAPTER - 2

### DISTRICT PROFILE

Jamui district was formed on 21<sup>st</sup> February 1991 and was carved out of the Munger district of which it was a part till then. Jamui has 10 development blocks, known as circles. The district has 153 Gram Panchayats (GPs), 2 urban areas (one Nagar Parishad of Jamui and other Nagar Panchayat of Jhajha). The district has 1528 revenue villages and 16 police stations. Drought is the main disaster in this district, along with earthquake, lightning and other allied disaster risks facing the district. This chapter provides an overview of district in terms of its geography, demography, natural resources, critical infrastructure and other important information depicted in the maps and table enclosed below.

#### 2.1 Geographical location and features

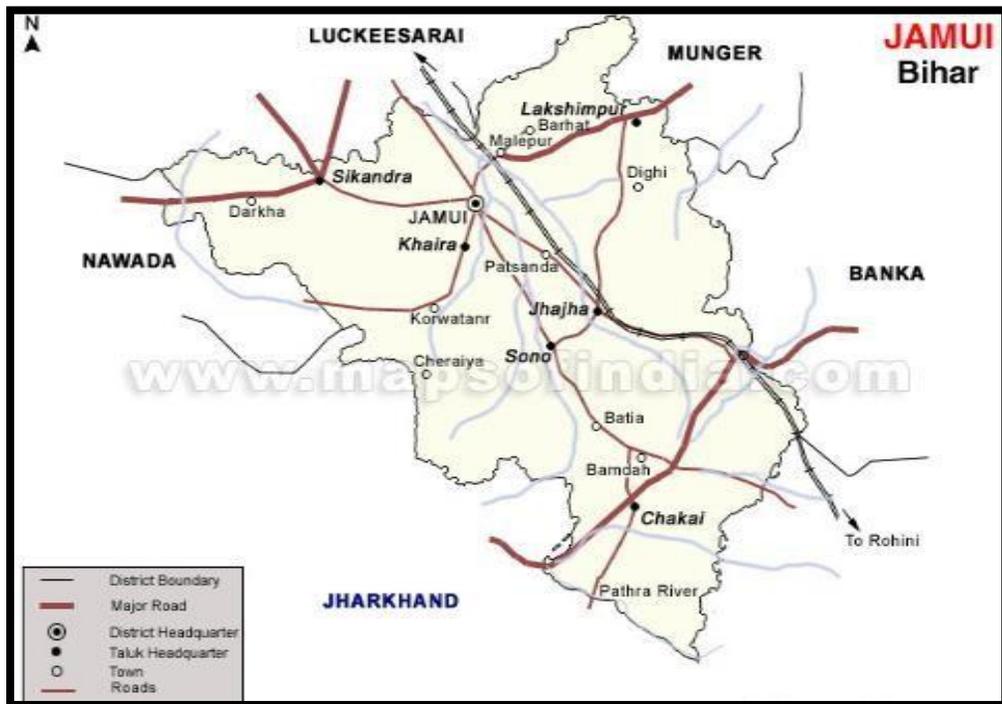


Figure 1: Location of Jamui

Jamui is located at the longitude of 86° 13'E and the latitude is 24° 55'N. Jamui occupies a total area of 3,122.80 sq. kms. Most of the district has a hilly topography. The western portion of Jamui like Sikandra and some parts of Khaira has plain areas. Sikandra block is situated in the alluvial zone. A sizeable part of the district comprises plains which are paddy-growing lands. The Southern part of the district is covered with hills and forest characteristically reminiscent of the Chhotanagpur plateau in its physical features. Hills of the district are considered to be the outlying extension of the Vindhya Range. The Southwest part of the Jamui district has another block of hills known as Gidheswar Pahar. Kuil and Ulai River are the chief rivers of the district. Beside these rivers, tributaries and sub tributaries, and rainy rivers flow across different parts of the district. The famous Nakti Dam is situated in the southern hilly terrain of the district. The dam area has been declared as a Bird Sanctuary.

## 2.2 Climate Weather Profile

The climate of Jamui can be described as transitional between dry and moderately extreme climate of the northern India and warm and humid climate of Bengal Basin.

Winter	November To February
Summer	March To May
Monsoon	June To September
Autumn	October To November
Average Rainfall	1026mm
Average Temperature	26.4 °C, 40°C in Summer & 11°C in Winters

**Table 1: Climate Weather Profile of Jamui**

## 2.3 Cultural, Historical and Social Perspective

The District of Jamui has a rich cultural heritage and tradition. Dushara, Holi, Rakshabandhan, Chat, Makarshankranti, Nagpanchami, Mahashivratri are the main religious festival of Hindus. Beside this festival tribal population of the district celebrate Sarhul a Sohrai. Karma festival is an important festival of the district celebrated both by tribal and non-tribal people. The tradition of cow's worship and Goshala worship on Gopastami in the month of Kartik is popular among the people of the district.

## 2.4 Demographic Profile

Here is an overview of the demographic profile of the Jamui District

<b>Description</b>	<b>2011</b>
Actual Population	1,760,405
Male	916,064
Female	844,341
Population Growth	25.85%
Area Sq. Km	3,098
Density/km <sup>2</sup>	568
Proportion to Bihar Population	1.69%
Sex Ratio (Per 1000)	922
Child Sex Ratio (0-6 Age)	956
Average Literacy	59.79%,
Male Literacy	71.24%
Female Literacy	47.28%
Total Child Population (0-6 Age)	324,513
Male Population (0-6 Age)	165,945
Female Population (0-6 Age)	158,568

**Table 2: Demographic Profile of Jamui District**

## 2.5 Administrative Structure

At present, the district is the part of Munger Commissionery having one subdivision and 10 revenue blocks with 153 GPs. The administrative structure of the district is as follows:

Sub division	Block	No. of Panchayat	No. of Village
Jamui	Jamui	12	081
	Khaira	22	120
	Sikandra	14	068
	Aliganj	13	069
	Laxmipur	13	082
	Gidhaur	08	020
	Barahat	09	043
	Sono	19	250
	Chakai	23	600
	Jhajha	20	197
<b>Total</b>		<b>153</b>	<b>1530</b>

**Table 3: Administrative structure in Jamui District**

Police station and hospital details have been added in annexure.

1	No. of Police District	1
2	No. of Sub-Divisions	1
3	No of Police Subdivisions	2
4	No. of Blocks	10
5	No. of Circles	10
6	No. of Police Stations	12

**Table 4: Administrative Units**

## 2.6 Natural Resources

The forest area in Jamui District is approximately 21 % of the total land of the district. Jamui is one of the resource rich districts in Bihar where different types of ores and minerals are found. The hills of Laxmipur and Khaira are comprised of archaen schists including the iron ore. In Laxmipur, Sono and Chakai the chief formation is in gneiss basement complex. Mica mines lie in the portion of adjoining Hazaribag district. Beside these there is possibility of availability of lime stone, China clay, Manganese, Graphic Pegmite Termoline quartz etc. in the southern hills of the district. Ore of gold has been observed in Sono Block. The hilly areas of Jamui are also known for

valuable stones like Marble, Topaz, and American diamond, Sfatik, Manic etc. The coal is found in the hilly area of Barhat block.

The rearing of milch animal has been a traditional occupation in Jamui District. Cattle like Cows, Bulls, Bullock, Sheep, Goat, pig etc. constitute the lifeline of the livelihoods of farmers in the district. A major part of the population is engaged in rearing of the above-mentioned cattle for their economic needs.

## **2.7 Main Occupation/Economic Profile**

Jamui is predominantly an agricultural district and its exports trade consists mainly of agricultural products such as various food grains and pulses including: rice and wheat; jackfruit; mahua etc. Coal, iron and steel, salt, sugar, cement, cotton, woolen textiles, kerosene oil, spices, bidi etc. are some of the significant products the district. As per the available data, only 58.49% area in the district is cultivable.

## CHAPTER - 3

### HAZARD, RISK, VULNERABILITY & CAPACITY ASSESSMENT (HRVCA)

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#### 3.1 District HRVCA

An informed Hazard, Risk, Vulnerability, and Capacity and Assessment (HRVCA) constitute the basis for the preparation Jamui District Disaster Management Plan. The HRVC Assessment includes the following: the type of hazards that the district is prone to; history of hazards; the area, people and infrastructure that is prone to the risk of these hazards; and their vulnerability of being impacted by such disasters. Vulnerability assessment deals with the natural, socio-economic, housing and the environmental vulnerabilities. The Vulnerability Atlas of BMTPC has also been referred for this purpose. The risk analysis has been carried out in the light of existing vulnerabilities and capacities. HRVC Assessment also includes resource inventory, capacity analysis, preparedness measures in terms of network of communication systems, public distribution systems, storage facilities, transportation facilities, medical facilities, and fire stations, safe shelters with their capacity, presence of community based organizations / volunteers etc. so as to enable quick response.

#### 3.2 Hazard and Risk Assessment

The risk of hazards in Jamui is based on a multitude of vulnerabilities. Jamui is prone to multiple hazards and hence the approach to deal with them has to be multidimensional in nature. A disaster risk reduction (DRR) approach is adopted to ensure that the hazards do not turn into disasters due to inadequate prevention, mitigation and preparedness measures. Even when a disaster strikes, its impact can be mitigated through prompt and effective response, relief, rehabilitation and recovery measures.

The Government of Bihar has notified the State specific local disasters which are - Lightning, Heat Wave, Excess Rainfall, Unseasonal Heavy Rain, Boat Tragedies, Drowning (rivers, ponds and ditches), Human Induced Group Accidents such as Road Accidents, Airplane Accidents, Rail Accidents and Gas Leakage.

### 3.3 Hazard Profile

Jamui district is mainly drought prone, but also falls in Seismic Zone IV (Bihar DRR Roadmap). It is also prone to fire, heat wave, lightning, road accidents, rail accidents, drowning and left wing extremism such as Naxalism. Following are the prevalent hazards applicable in Jamui District:

Hazards Vs Months	January	February	March	April	May	June	July	August	September	October	November	December	Risk
Earth Quake	High	High	High	High	High	High	High	High	High	High	High	High	High
Lightning				High	High	High	High	High	High				High
Drought					High	High	High	High	High				High
Road Accidents	High	High	High	High	High	High	High	High	High	High	High	High	High
Heat Wave					High	High							High
Cold Waves	Medium											Medium	Medium
Fire	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Epidemics						Medium	Medium	Medium	Medium				Medium
Naxalite	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Rail Accidents	Medium											Medium	Medium
Drowning	Medium						Medium	Medium	Medium			Medium	Medium

High
  Medium
  Low

**Table 4: Prevalent Hazards in the District**

Some measures could be taken up to reduce or to know the pattern of disaster / incident. Like Satellite images to be used and it could be analyzed by the experts or reports should be made so that

district would prepare themselves with the future coming disasters by knowing the pattern. The analyzing of past events and disasters proper early warning measures would be prepared.

### 3.3.1 Earthquake

Jamui District falls in the Seismic Zone IV, which has the high potential of earthquake risk. In this regard, it is helpful to look at previous incidents of earthquakes noted in the region. Although the loss in Jamui region has been limited, these incidents are a reminder that the district cannot afford to be complacent, being in seismic zone IV and it can be struck by a massive earthquake at any time. It is possible that a major earthquake may not occur in the next 100 years, but it is also a strong possibility that it may occur any time in this or next year or next decade. Since no early warning can be given like in the case of other disasters, the district administration has to be always prepared to deal with severe earthquake, keeping in view the worst case scenario.

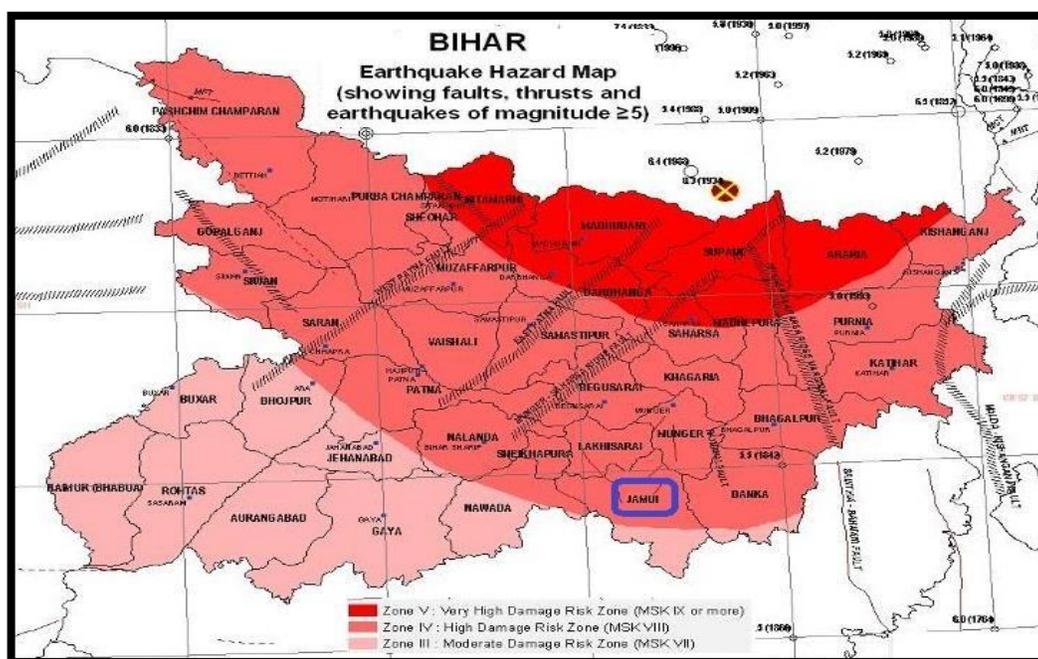
Mitigation measures: Building bye-laws to be followed and it should be checked regularly for the compliance, and ward level building assessment could be done. More measures (preparedness, prevention and mitigation have been given in chapter 5)

**Table- 5 shows the past records of earthquakes in Bihar**

Date	Location	Intensity	No. of affected Population	Affected Area
4 <sup>th</sup> June 1764	India- Nepal Boundary	6.0	NA	NA
23 <sup>rd</sup> August 1833	Nepal Boundary	7.7	NA	NA
23 <sup>rd</sup> May 1866	Nepal Boundary	7.0	NA	NA
23 <sup>rd</sup> May 1866	Jharkhand- Bihar Boundary	5.5	NA	NA
30 <sup>th</sup> Sept 1868	Hazaribagh	5.7	NA	NA
7 <sup>th</sup> Oct 1920	Bihar- Uttar Pradesh Boundary	5.5	NA	NA
15 <sup>th</sup> Jan 1934	India- Nepal Boundary	8.4	10500	Patna, Gaya, Shahabad, Saran. Mujjafarpur, Darbhanga, Bhagalpur

11 <sup>th</sup> Jan 1962	India- Nepal Boundary	Nepal	6.0		Munger & Purnea
21 <sup>st</sup> Aug 1988	India- Nepal Boundary	Nepal	6.7	1000	Madhubani and Darbhanga
18 <sup>th</sup> Sept 2011	Sikkim- Nepal Boundary	Nepal	5.7		NA
25 <sup>th</sup> , 26 <sup>th</sup> , April 2015	India- Nepal Boundary	Nepal	6.6	60	Patna and the area adjacent to Nepal Border

**Table 5: Past records of Earthquakes**



**Figure 2: Earthquake Hazard Map**

### 3.3.2 Drought

Drought situation is quite common in Jamui District, though not as severe as in other districts of Bihar. Since 2001, drought has occurred in Jamui during 2011, 2013, 2015 and 2018. Apart from scanty rainfall, the other reasons for drought are depleting water table and siltation of canals.

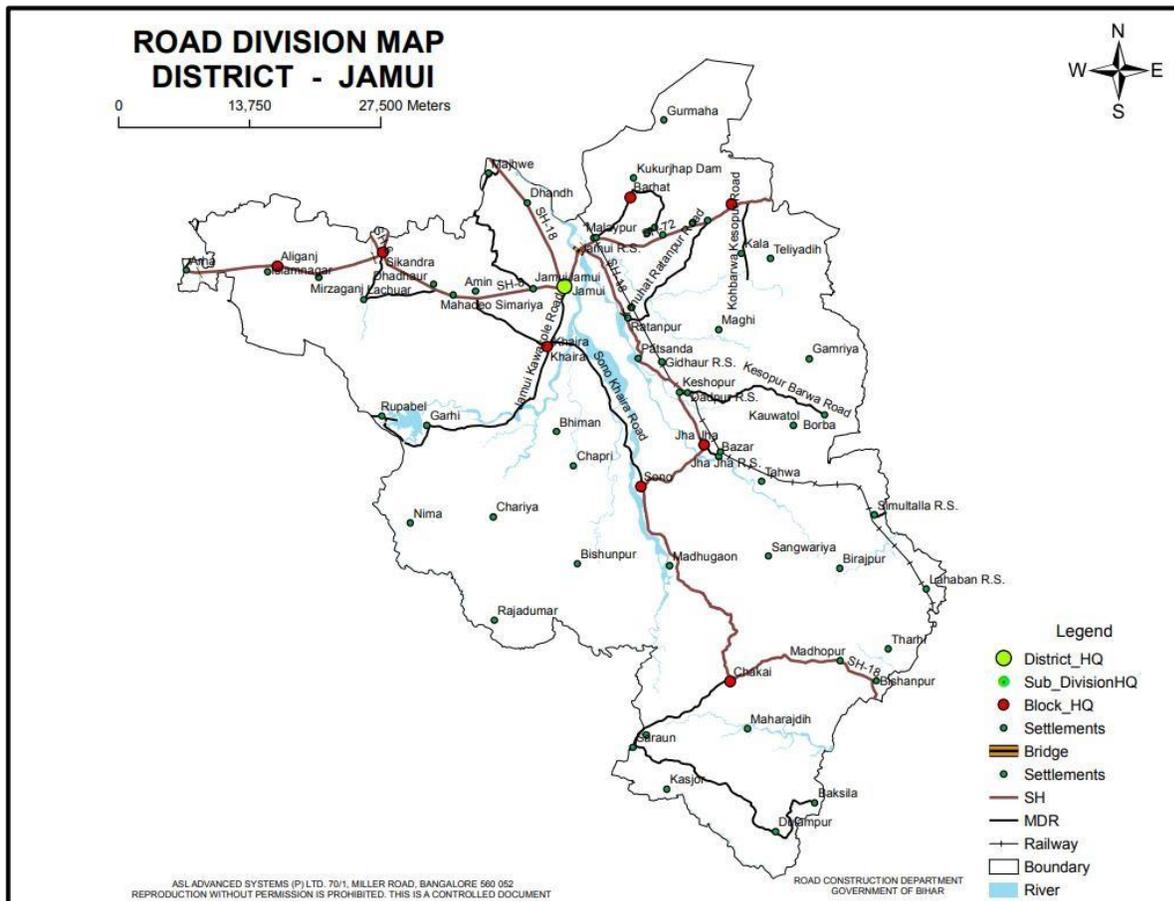
While the precise figures of economic losses during these years are not readily available, the farming community is reported to have suffered losses and some people migrated temporarily from their respective villages in search of the livelihood options. Crop insurance is not very

prevalent in the villages in the district with the result that there is no compensation, except marginal compensation provided by the State Government. It is also a fact that there is no scientific method for damage assessment, post- disaster.

Moreover, the people are poor which also enhances their economic vulnerability, particularly due to economic losses pertaining to the drought, which forces almost 50% of the population to migrate from their villages. The social disparities and caste distinctions contribute further to their vulnerability.

The crop failure, taken together with socio-economic vulnerabilities and overall poverty in the district, has a multiplier impact on the community; more so when prices of commodities rise sharply during drought years. There may be not much reportable death incidents due to drought conditions in the district during these years, the overall economic losses are quite substantial. In order to cover such losses, the subsidy is given by the state government on the basis of damage assessment, besides educating the farmers for alternate cropping. Water conservation, recycling, rain water harvesting, promoting the use of check dams, and preservation of ponds and animals troughs have been taken as mitigation measures in the district.

### 3.3.3 Road Accidents



### Figure 3: Road Division Map of Jamui District

The road accidents are a major cause of concern in Jamui district, which has claimed many lives in the region. Especially after the development of the National Highway (NH 333) the vehicular speed has increased significantly, and this often has become the main cause of rising number of road accidents in the region. Some of the identified black spots in district Jamui are: Near Banjhulia (Police Station PS - Giddhore), Basukitand more (PS - Chandramandi), in cheranpul near paanch pahadi more (PS - Sono), near Mahadev simaria market (PS - Sikandra), near lachuad more (PS - Sikandra), and near Katauna R.O.B (PS - Malaypur) and nearest hospital to these black spots is Sadar hospital Jamui.

Mitigation measures: Arranging traffic personnel at each black spots, making zebra crossing at each crossings, speed breakers to reduce the speed of vehicles. More measures (preparedness, prevention and mitigation have been given in chapter 5)

Year	No. of Causality	Major Hotspots	Police station and Hospitals
2019	4 in Katauna mod	Malaypur: Katauna mod – NH 333A	Police station – Malaypur Hospital – Sadar Jamui
2020	4 in Katauna mod	Malaypur: Katauna mod	Police station – Malaypur Hospital – Sadar Jamui
2021	7 in Katauna mod 6 in Katauna mod to nasrichak	Malaypur: Katauna mod to nasrichak – NH 333	Police station – Malaypur Hospital – Sadar Jamui

**Table 6: Past records of road accidents in the Jamui District**  
Source (District Emergency Operation Centre)

The consultative workshops with the stakeholders, including the police officials, have revealed that the Traffic Policemen face difficulties in dealing with the cases of road accidents. The department representatives emphasized that there is lack of authority to issue “Challans (FINES)” which has proved to be major hindrance in stopping the traffic violations. Also the insufficient police manpower has also been identified as one of the important impediments in enforcement of traffic rules in the region.

#### 3.3.4 Lightning

Lightning is the second most prominent disaster in the district, which is prevalent in almost 10 blocks in Jamui. It is the most occurring disaster in the month of monsoon. A number of cases

of death due to lightning are reported every year. Most cases are avoidable tragedies which occur due to a lack of awareness of do's and don'ts during lightning events. Following are the recorded casualty due to lightning for the past 3 years in the district.

Mitigation measures: Wall painting at the vulnerable areas, ward level lightning conductor audit, lightning arrester to be made compulsory for old and ongoing construction of buildings. More measures (preparedness, prevention and mitigation have been given in chapter 5)

Year	No. of Casualty	Affected Blocks
2019	29	Sono, Chakai, Jhajha, Khaira, Lakshmipur, Islamnagar, Aliganj
2020	29	
2021	09	

**Table 7: Past records of Lightning in the Jamui District**

Source (District Emergency Operation Centre)

### 3.3.5 Drowning

Drowning has been one of the major disasters recorded in the district due to human negligence especially during the festivals like Chhat. Accidental drowning is prominent due to the presence of rivers and ponds in the blocks. The incident of drowning is reported by the Circle Officer.

Year	No. of Causality
2019	05
2020	06
2021	04

**Table 8: Past records of Drowning in the Jamui District**

Source (District Emergency Operation Centre)

### 3.3.6 Naxal Attack

A group of 200 naxals attacked the Dhandbad intercity express at Bhalui hault near Jamui and killed 3 persons and injuring 6 passengers (13 June 2013). On 9<sup>th</sup> June 2022 there was a naxal-SSB encounter but there was no casualty. As there have been incidents of naxal attacks on the Jamui railway station and houses for robbery and looting in the past, the terror caused by naxals also needs to be taken into consideration.

Blocks most vulnerable to Naxal attack

Chakai	Jhajha
Lakshmipur	Khaira
Sono	Barhat
Sikandra	

**Table 8.1: Past records of Naxal attacks in the Jamui District**

Source (Media reports)

### Government's Policy

The principal strategy used by the government is the 'Law and Order Approach'. This can be established by the fact that around 532 companies of central paramilitary forces have been deployed in the affected states. The MHA has set up a special 'institutional mechanism' for counter-insurgency (COIN) tactics. It consists of:

- A high-level task force named the 'Review Committee' under the Cabinet Secretary for promoting coordinated efforts for development and security measures.
- An Inter-Ministerial Group under the Ministry of Home Affairs headed by Secretary, Naxal Management Division – to review the implementation of development programmes in the Naxalite-affected areas.
- A Task Force on inter-State coordination headed by Special Secretary, Internal Security.
- A coordination Centre headed by Union Home Secretary.

Broadly, there are 4 key elements in the Union government's approach to dealing with the Maoists/Naxalites. These are Security, Public Perception Management, Development, and rehabilitation.

**1. Intelligence and Networking-** The government has set up Multi-Agency Centre (MAC) at the Central level and State Multi-Agency Centre (SMAC) at the state level. These centres have proved to be highly effective in Maoist hotbeds like Jagdalpur and Gaya. Other noteworthy stops include strengthening of State-Intelligence Bureaus (SIBs) in the LWE affected areas.

**2. Deployment of Central Paramilitary Forces-** The creation of Central Armed Police Forces (CAPF) to carry out counterinsurgency strategies has been a significant factor to improve the condition. More than 70,000 CAPFs have been deployed in the Naxal-affected states. In addition, the Centre has helped states to raise 14 Specialized Commando Battalion (CoBRA) that are

equipped and trained in guerrilla and jungle warfare techniques and deployed to the worst-affected districts.

- 3. SAMADHAN-** NDA government launched 'SAMADHAN' in May 2017. The acronym stands for the following: S – Smart Leadership, A – Aggressive Strategy, M – Motivation and Training, A – Actionable Intelligence, D -Dashboard Based KPIs (Key Performance Indicators), and KRAs (Key Result Areas), H- Harnessing Technology, A – Action plan for each theatre and N- No access to Financing. This policy aims to hit at critical junctures in the Maoist links.
- 4. Infrastructure Schemes-** This scheme provides funds for better mobility, weaponry, vehicles and other critical infrastructure. Under the scheme, some 250 fortified police stations were opened in the LWE affected states. In December 2016, the Union government approved road-connectivity projects in 44 of the worst affected districts.
- 5. Ban on the CPI (Maoist) and the UAPA Act, 2009-** The Central Government in 2009 put a countrywide ban on the CPI (Maoist). Apart from this, the government enacted the Unlawful Activities Prevention Act, 2009 to put a check on the activities of the Naxalites and providing police and paramilitary forces autonomy and increased powers. These were few of the indicators which define the government's approach in the naxal-affected states. Due to the varied demography and nature of the Maoist and Naxals, 'One tactic fits all' would turn out to be a disaster. This is the reason why the government is moving ahead with not just the 'Law and Order Approach' but also the 'Development and Rehabilitation Approach' which has proved to be equally effective.

## **Bihar**

The Left Wing Extremism movement in Bihar started in the early 1970s. The government in Bihar took various steps to improve governance and initiated a number of socio-economic and development strategies. The real wakeup call came in 2005 when the Naxalites released 364 of their comrades from the Jehanabad jail. This made the government change its strategies, placing more emphasis on good governance.

On the security measures, the government created a 400-member Special Task Force and a Special Auxiliary Force for counter-insurgency. Various counter-insurgency training schools were also set up to combat operations in the Naxal-affected areas. It also increased its rehabilitation and

surrender policies by implementing speedier trials in the Maoist affected regions.

Bihar has been considerably successful in implementing an effective Counter-Insurgency strategy and reducing casualties in the Maoist and Naxal affected areas.

### 3.3.7 Other Hazards including Epidemic/Pandemic

The flood is not perceived as a major threat in Jamui district but the possibility of any flash flood or water logging cannot be ruled out. The rail accidents, particularly as unmanned railway crossing also occur occasionally especially during winters due to lack of visibility and negligence. Although rail accidents and snake bites are not listed as disasters by the Finance Commissions, the state government has taken a liberal view and a compensation of Rs 4 lakh is provided in each case of death in such instances from the State Disaster Response Fund.

As for other disasters, there has been no major fire disaster in Jamui in recent times. However, the occurrences of isolated **outbreak of fire** in the region do take place once in a while. One of the recent fire incidents happened on 4<sup>th</sup> April 2021 in Dhaur, Kasrauki Bahiyar which led to the loss of 35 ton paddy in the field. The financial assistance has been given to the victims in such cases of fire casualties/ burn injuries in Jamui District.

The district has also faced **heat wave** (climatological extremity of higher temperature) especially in the Month of April, May and June. No deaths have been reported in last 4 years in Jamui district, temperature hovered around 45 degrees Celsius on June 15 and 16 of 2019. Extreme heat can increase the risk of other types of disasters. Heat can exacerbate drought, and hot, dry conditions can in turn create wildfire conditions. Buildings, roads, and infrastructure absorb heat, leading to temperatures that makes area hotter in urban areas than outlying areas – a phenomenon known as the urban heat island effect. This impact is most intense during the day, but the slow release of heat from the infrastructure (or an atmospheric heat island) overnight can keep cities much hotter than surrounding areas. Rising temperatures pose a threat to people, ecosystems, and the economy.

According to the state disaster management department website, recorded 2 deaths in Jamui. During winters mainly in end-December and January **cold waves** are prominent.

### 3.3.8 Covid-19 (Pandemic)

The incidences of outbreak of diseases / epidemics are also high mainly due to lack of awareness

about clean water sanitation and hygiene, (WASH), which are being gradually addressed now. Exposure to germs and toxic substances are likely to cause epidemics: viral, bacterial, fungal infections affecting lakhs of people and paralyzing the lives and livelihoods of the people is a reality. India is currently facing the novel coronavirus (COVID-19) pandemic, which was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019. It has now spread to 214 countries including India and has impacted the State of Bihar in a big way. In Bihar there are 726045 covid cases so far as per the Bihar Health Department. Districts with a migrant population in particular, are impacted the most by the spread of Covid-19.

Year	No. of Causality
2020-2021	94

**Table 9: Corona cases in the Jamui District**  
Source (District Emergency Operation Centre)

### 3.3.9 Climate Change

Bihar is particularly vulnerable to climatic changes. Northern Bihar is watered by glacial rivers, as a result of which 73.6% of this region is flood-prone. The rivers of Southern Bihar are rain-fed, whose waters typically drain into lakes behind the higher southern bank of the Ganga river. When the Ganga is in spate, the lakes overflow as well, often submerging the kharif crop. As a result, more than half the state is flood-prone. The remainder, however, often suffer droughts.

The national climate vulnerability assessment that the Centre released in April 2021 included Bihar on the list of states that are highly vulnerable to climate change. The assessment also found that of India's 50 most climate-vulnerable districts, 14 were in Bihar including Jamui.

According to the report published in 2015 by the Government of Bihar titled "Bihar State Action Plan on Climate Change-Building Resilience through Development,"<sup>1</sup> future projected changes in surface temperature during 2011–2040 with respect to 1961–1990 in the simulation of different climate models show that there will be increase in temperature from 1.2 Degree Celsius to 2.0 Degree Celsius in Jamui.

### 3.4 Vulnerability Assessment

Based on the HRVCA carried out in selected villages of six GPs, one in each block, of Jamui district, it has been observed that the district is prone to multiple hazards and hence the approach

to deal with them has to be multi-dimensional in nature.

Vulnerabilities are of different types, which have a multiplier effect enhancing the total vulnerability comprising physical, economic, social, structural/ non-structural and environmental vulnerability.

### 3.4.1 Earthquake

Jamui is vulnerable to earthquake. As for *pucca* constructions, although the revised building bye laws are in place, its compliance regime is poor and contributes significantly to structural vulnerability. The threat is spreading to villages also where *pucca* constructions are coming up, particularly in case of an earthquake. It may however be added that houses constructed under IAY are earthquake resilient since this aspect is being taken care of in IAY designs. Lack of awareness is contributing further towards non-structural vulnerability. The distribution of houses and buildings have been captured in the **BMTPC Table Annexure 2** highlights the existence of structural vulnerability in Jamui, especially the high percentage of weak mud houses, indicates the high level of damage risk.

In Jamui within the same population, children, expectant and nursing mothers, elderly and ill persons are more vulnerable since they need support to handle disasters. The community as a whole is neither aware nor trained to take care of their special needs. Traditional wisdom and cultural upbringing of helping children and elderly does help to some extent. However, such assistance can be channelized more properly, if the community is made aware and trained to respond to such emergencies.

### 3.4.2 Drought

Drought is almost a recurring phenomenon in all the blocks, which results in loss of crops occasionally. Water level during summer is low to very low, from 37 feet to 400 feet, depending on the area. Economic losses keep a fair segment of population, farmers and landless laborers, very poor. There is invariably shortage of safe drinking water. Apart from it there are issues of depleting water table, siltation of existing canals and lack of canal irrigation.

### 3.4.3 Lightning

A number of 29 cases of death due to lightning are reported every year. Most cases are avoidable tragedies which occur due to a lack of awareness of do's and don'ts during lightning events.

<b>Years</b>	<b>District</b>	<b>Deaths</b>
2021	Jamui	8
2020	Jamui	27
2019	Jamui	24

**Table 9.1: Lightning cases in the Jamui District**  
Source (District Emergency Operation Centre)

### **3.4.4 Fire Incidents**

Outbreak of fire incidents do occur from time to time but generally the risk is considered to be low. The main reason is that huts made of pual and mud are more prone to fire where it spreads quickly. Similarly, the slum population in the urban areas is also more susceptible to fire.

### **3.4.5 Road Accidents**

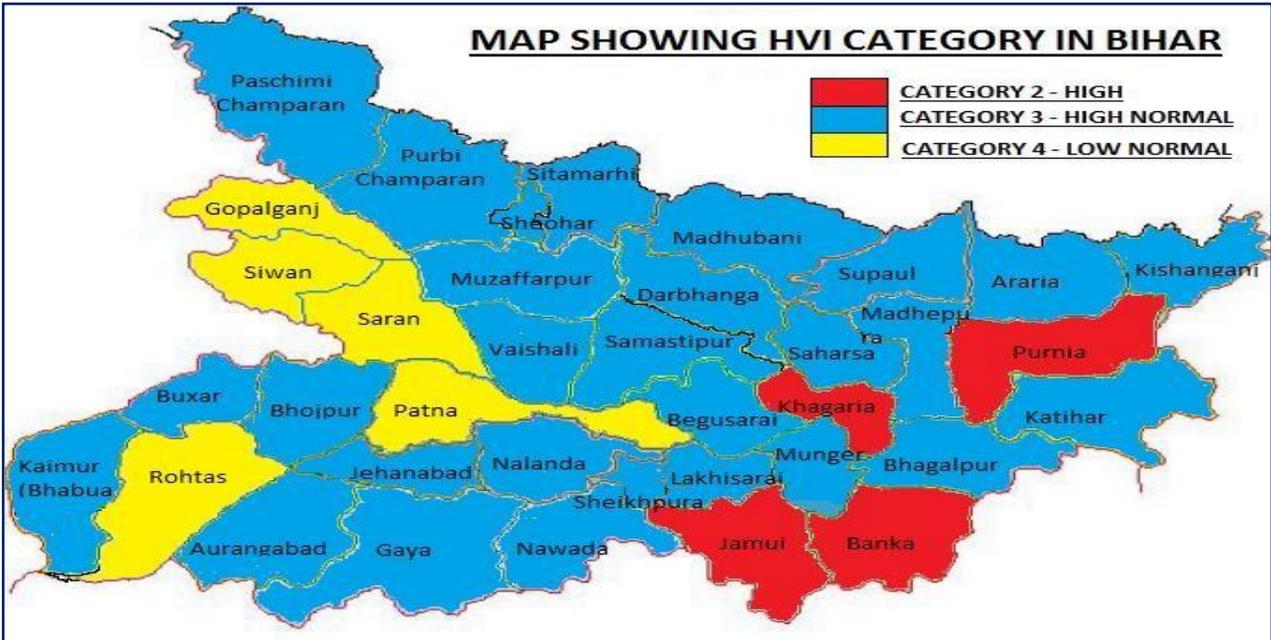
There have been incidences of minor road accidents in the district including few fatal cases. There are 4 blackspots identified in the district.

### **3.4.6 Heat Wave**

Heat wave is a condition of air temperature which becomes fatal to human body when exposed. It is defined based on the temperature thresholds over a region in terms of actual temperature or its departure from normal. In certain countries it is defined in term of the heat index based on temperature and humidity or based on extreme percentile of the temperatures.

Heatwaves often have complex effects on human economies, due to less productivity of workers, disruption of agricultural and industrial processes and damage to infrastructure not adapted for extreme heat.

Jamui District falls in the 2<sup>nd</sup> Category- High.



**Figure 4: Heat Wave Index in Bihar**  
 Source: Bihar Heat Wave Action Plan, 2017

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	16.1 °C (60.9) °F	20 °C (68.1) °F	25.5 °C (78) °F	30.2 °C (86.4) °F	31.2 °C (88.2) °F	30.5 °C (86.8) °F	28.2 °C (82.7) °F	27.9 °C (82.2) °F	27.3 °C (81.2) °F	25.3 °C (77.5) °F	21.5 °C (70.7) °F	17.5 °C (63.4) °F
Min. Temperature °C (°F)	9.9 °C (49.8) °F	13.3 °C (55.9) °F	18.1 °C (64.6) °F	23 °C (73.5) °F	25.6 °C (78) °F	26.7 °C (80) °F	25.8 °C (78.4) °F	25.5 °C (77.9) °F	24.7 °C (76.5) °F	21.2 °C (70.2) °F	15.9 °C (60.6) °F	11.5 °C (52.7) °F
Max. Temperature °C (°F)	22 °C (71.6) °F	26.2 °C (79.2) °F	32.3 °C (90.2) °F	37.1 °C (98.7) °F	37.1 °C (98.7) °F	34.8 °C (94.6) °F	31.3 °C (88.4) °F	31.2 °C (88.1) °F	30.8 °C (87.4) °F	29.6 °C (85.2) °F	27 °C (80.5) °F	23.3 °C (73.9) °F
Precipitation / Rainfall mm (in)	16 (0)	16 (0)	14 (0)	15 (0)	61 (2)	173 (6)	296 (11)	251 (9)	215 (8)	73 (2)	7 (0)	8 (0)
Humidity(%)	67%	58%	42%	37%	53%	68%	83%	84%	84%	78%	66%	67%
Rainy days (d)	2	2	2	3	6	13	19	19	16	6	1	1
avg. Sun hours (hours)	8.9	9.7	10.6	10.7	10.1	9.4	8.0	7.7	7.8	8.8	9.2	8.7

**Figure 4.1: Average Temperature report of Jamui**  
 Source: IMD

### 3.5 Capacity Analysis

Coping capacities contribute to the reduction of disaster risks. 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.

S.N.	Resources	Description
1.	Canal	6 major canals
2.	Communication	BSNL/Telecom, Mobile & Internet
3.	T.V/ Radio Sets	Enough cable connections in district
4.	Electric Extension Grid	Power house, Sikandra roadmahisouri Jamui
5.	Road Connectivity	NH-333
6.	Railway	Howrah–Delhi main line;Asansol–Patna section
7.	Agriculture	Block Agriculture Officers,Agriculture Coordinators, and consultants
8.	Education Department	828 Primary + 175 Sec+737Mid+1 Simultalla=1741
9.	State Disaster Response Force	nearest available inBhagalpur
10.	National Disaster Response Force	nearest available inBhagalpur
11.	Helipad	1. KKM College Jamui 2. S.K Memorial StadiumJamui 3. Surendra Kumar SinghStadium Gidhour.
12.	Nearest regional IMD Centre	Patna
13.	District EOC	EOC in Disaster Management Dept. Jamui
14.	Firefighting	11 fire Brigade vehicles and available trained workers
15.	Health Facilities	District hospital-1, Referral Hospital-3, Community Health Center -4, PHC-10, Health Sub Center- 275, APHC-20
16.	Relief Centres	Available in all blocks
17.	Search & Rescue	Search & Rescue by NDRF& SDRF- Bhagalpur
18.	Veterinary Medicines	35 medicine
19.	Jan Witran Pranali Dukaan	872
20.	Tent Shop	Present in all blocks
21.	Elected Panchayat Representative	In every panchayat in Jamui-152

**Table 10: Capacity Analysis at District Level**

**Table 10.1: Capacities of Early warning system**

<b>Flood</b>	IMD information
<b>Lightning</b>	Number of arrestors – 5 1 in DM office, 2 in ssb camp Pakri and 2 in ssb camp Garghi
<b>Rain gauge</b>	10 in each block office premises

Source: District Emergency Operation Centre, Jamui, 2022

### 3.6 Human Resources at Panchayat Level

S.N.	Human Resource	Total Number
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1.	Mukhiya	152
2.	Ward Members	1944
3.	Packs Adhyaksh	153
4.	Gram Kachehri	152
5.	Gram Kachehri Sachiv	152
6.	Agriculture Consultant	111
7.	Panchayat Sachiv	40
8.	Aanganbadi workers	3500
9.	Aasha Workers	1540
10.	Rojgar Sewak	125
11.	Vikas Mitra	172
12.	Tola Sewak	967
13.	Indira Awaas Sahayak	98
14.	School Teachers	7663

**Table 11: Capacity Analysis at Panchayat Level**

**(Source: District Emergency Operation Centre)**

## CHAPTER - 4

### INSTITUTIONAL ARRANGEMENT

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The Disaster Management Act 2005 provides for an effective institutional mechanism at District level for drawing up and monitoring implementation of disaster management plan for prevention and mitigating effects of disasters and for taking a holistic, coordinated prompt response to any disaster situation. The institutional mechanism for disaster management in Jamui District is discussed in the present chapter.

#### 4.1 District Disaster Management Authority

As per Section 25 of the Disaster Management Act 2005, every State Government shall establish a District Disaster Management Authority in each district. The District Authority shall consist of the Chairperson and such number of other members, not exceeding seven, as may be prescribed by the State Government, and unless the rules otherwise provide, it shall consist of the following, namely:-

- a) The Collector or District Magistrate or Deputy Commissioner as the case may be, of the district who shall be Chairperson, *ex officio*;
- b) The elected representative of the local authority who shall be the co-Chairperson, *ex officio*;
- c) The Chief Executive Officer of the District Authority, *ex officio*;
- d) The Superintendent of Police, *ex officio*;
- e) The Chief Medical Officer of the district, *ex officio*;
- f) Not exceeding two other district level officers, to be appointed by the State Government.

The State Government, through its Order dated 18 June, 2008 has appointed the following two district level officers, in addition to the above five, as members of the District Authority in terms of clause (f) of sub-section (2) of Section 25 of the Act:

1. Additional District Magistrate, *ex officio*; and
2. Senior most Engineer in the district, *ex officio*.

A District Disaster Management Authority with the above mentioned members has been constituted for Jamui district vide order dated 18 June, 2008. There is however need to hold regular meetings of DDMA to discuss long term mitigation measures and formulate schemes and plans for implementation. A major limitation is that DDMA does not have exclusive member-secretary or secretariat. If an ADM exclusively for disaster management is posted in the district who is also concurrently made the member-secretary of DDMA with a modestly manned secretariat consisting of 3-4 officers and staff, the competent person would be able to devote adequate time to all facets of disaster management.

However, at district there are still gaps which need to be bridged. For instance, there are no dedicated District Training Centres exclusively for disaster management. The training Centers of other sectors have not really taken Disaster Management (DM) on board. Training at district and sub-district level can be provided through the chain of Master Trainers and Trainers. The constraint is that, in the absence of State HR Plans and Training Needs Analysis, no significant proactive action has been taken to develop a comprehensive plan for training of different stakeholders at district and sub-district level.

#### **4.2 Coordination at Sub district Level**

At the sub district level, only a small group of people are trained in coordination and know-how to tackle disaster situations. People are yet to be capacitated on urban risks in the district, specifically on earthquake risks. Though some initial DM programs have been conducted by the state government and NDRF at the sub district level, still there is a long way to go in terms of local level coordination. Further, there is a need for the dedicated officers and subject matter experts, who can sustain the disaster management capacity building agenda and its institutionalization on the ground.

#### **4.3 GP Level**

At the GP level, there is need for institutionalizing disaster management through formation of DM Committees. However the villagers are open to capacity building trainings against different disasters to which they are vulnerable.

#### **4.4 PRIs Level**

It has been observed that there is a need to institutionalize DM and build the capacities of PRIs to handle any emergency situation. BSDMA has recently developed the specific disaster management training modules for all PRIs. The exclusive DM training programs have been organized by BSDMA for PRIs, including Mukhiyas and Sarpanch. And for smooth local self-governance and institutionalization purpose, the master trainers need to be adequately trained at the block, panchayat and community level. This will certainly help to take forward the disaster management culture beyond the block office and to the vulnerable GPs and communities therein.

#### **4.5 NGOs, CBOs Level**

The NGOs and CBOs have a very important role to play in disaster management, as they are very close to the community. The DM training could be imparted to the NGOs, CBOs and cascaded down to the community through a chain of master trainers and trainers.

However in Jamui adequate initiatives have yet to be taken up. In villages of Jamui District, the need was felt to involve women in First Aid training in the community. Besides, if the children learn these things in school, they would come and share with families at home. Overall it has been observed that first the local NGOs, CBOs need to be identified and exposed to training programs inclusive of all social problems along with disaster management, health and hygiene so that later on they could adopt an integrated approach to take care of all the problems affecting vulnerable communities.

#### **4.6 District Emergency Operations Center (EOC)**

The District EOC exists at Jamui DM/DC office. However there is need to make the EOC more effective. It is yet to be fully equipped and need to be further upgraded. The trained and experienced manpower is also required to be deputed in full capacity at the District EOC.

It is expected that the District EOC will be fully activated during disasters. The activation would come into effect either on occurrence of disaster or on receipt of warning. On the receipt of warning or alert from any such agency which is competent to issue such a warning, or any other agencies of the occurrence of a disaster, all community preparedness measures including counter disaster measures will be put into operation. The District Magistrate will assume the role of the

Chief of Operations for Disaster Management.

Occurrence of disaster will be communicated to the following, by means of telephone and fax:-

- i) Governor; ii) Chief Minister; iii) Revenue Minister; iv) The Relief Commissioner
- v) MPs and MLAs from affected areas; vi) State EOC vii) NEOC; viii) Joint Secretary, NDM, Ministry of Home Affairs, GOI.

The disaster/emergency situation would be communicated to DM, SP, CMO, SDM, Commandant Home Guard, Fire Officer immediately on phone. A written report about disaster/ event would be sent in writing to the DM.

The occurrence of disaster shall be immediately communicated to all the first responders such as police, fire, health, DM, SDM and other stakeholders such as NGOs, trained SAR volunteers through SMS gateway for which specific provision of group mobile directory would be made. The directory would be grouped according to the disaster specific response groups. All the messages received in and sent out of the EOC will be entered into the message register. The occurrence of disaster would essentially mean the following activities have to be undertaken:

- a) Expand the Emergency Operations Centre to include Branch arrangements with responsibilities for specific tasks depending on the nature of disaster and extent of its impact.
- b) Establish an on-going VSAT, wireless communication and hotline contact with the Divisional commissioner, and Collector/s of the affected district/s.

EOC will continue to operate as long as the need for emergency relief and operations continue. Besides the above the DEOC would also do the following functions:-

- a) Assimilation and dissemination of information.
- b) Liaise between Disaster site and State Head Quarter.
- c) Monitor and coordinate the actions and response of different departments and agencies.
- d) Coordinate relief and rehabilitations operations
- e) Hold press briefings.

## CHAPTER - 5

### PREVENTION, MITIGATION AND PREPAREDNESS MEASURES

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In order to achieve set milestones of disaster risk reduction, it is necessary to reduce vulnerability of community and improve their capacity. Besides community, the capacity of all stakeholders has to be built to enable them to discharge their functions in a manner which gives optimum results. In this process, it is crucial to understand disaster prevention, mitigation & preparedness measures.

The key components, which fall within the ambit of prevention, mitigation and preparedness measures, are discussed below.

#### 5.1 Techno Legal Measures

Techno legal regime has a very important role to play in disaster prevention by means of safe construction. Further, it also helps in mitigating risks and enhances the preparedness to potential disaster risks.

The Government of Bihar has further updated Building Bye Laws in 2014. Even before this the Bye Laws in force took care of risks due to disasters. The CPWD and State PWDs invariably follow the Building Bye laws and relevant provisions of National Building Code. However, the same cannot be said for private constructions since the implementation mechanism is not up to the required standards and engineers/ architects/ contractors/ masons are also not adequately trained in construction of disaster resilient buildings. Jamui is also not an exception to this problem.

An interaction with the Nagar Parishad and Nagar Panchayat, Jamui it was observed that there is little interaction of Nagar Parishad and Panchayat with District Administration though they are invited occasionally to provide inputs in case of water logging in different wards of municipal area. Such interaction is required to be more frequent in order to avoid any emergency situation. The Nagar Parishad ensures that the plan is in accordance with Building Bye Laws, 2014. Further the, non-structural measures are equally important to mitigate the impact of disasters such as in schools/colleges, the heavy equipment should be fixed on work tables, trophies/ heavy items should not be kept over almirahs from which these can fall easily particularly in case of earthquakes, chemicals should be stored safely, people should keep their precious goods, money,

medicines and important documents in a water proof package so that these can be taken by them in case of evacuation without any time loss.

The following key measures therefore need to be taken:

- (i) As for new constructions, implementation modalities as per building bye laws may be firmed up and these constructions may be inspected at laying of foundation level, construction up to plinth level, superstructure level and before issue of completion certificate to ensure that these are disaster resilient.
- (ii) For existing constructions, public awareness may be created to have the buildings inspected by private certified engineers/ architects to ensure that buildings are disaster resilient.
- (iii) As for public buildings, particularly key administrative buildings, schools, hospitals, places where large number of people congregate including religious places & other lifeline buildings, Rapid Visual Screening (RVS) may be conducted to ascertain the level of vulnerability followed by detailed evaluation for retrofitting or reconstruction based on the age and risk assessment.
- (iv) Adequate training may be imparted to engineers, architects and masons for disaster resilient constructions.
- (v) Engineers/ architects in private sector may be certified for the purpose of making maps/ plans initially and ensuring disaster resilient features are incorporated during constructions.
- (vi) With *pucca* constructions gradually coming up in rural areas, a techno legal regime for such constructions may be introduced.
- (vii) Awareness may be generated among community and public assets to take necessary non-structural measures.

## 5.2 Early Warning Systems (EWS);

Roadmap for Disaster Risk Reduction, 2015-30 of the Government of Bihar, brought out in March, 2016 identifies improvement in existing early warning systems as a key action area. The milestone set for this purpose states that “an effective Early Warning System (EWS) is established, wherein all villages and cities in Bihar have systems for early warning information reception, dissemination and taking up immediate good enough pertinent action.”

At present, although the District EOC exists in Jamui District, it is not fully equipped. It is true that arrangements are made during monsoon season to disseminate warnings to the villages likely to receive heavy rainfall and get flooded; the dissemination is through conventional means using phone lines. The last mile connectivity of dissemination of warnings to community is still a problem. There are no EOCs at Panchayat level. The Telecom Department appreciates this gap and has suggested that mobile phones could be used to disseminate warnings directly to the community through SMS. However, the challenge is that the warnings have to be in simple user-friendly language and reasonably accurate, otherwise the community may not pay heed to such messages.

## 5.3 Functions of Line Departments to deal with Disasters

### 5.3.1 Earthquake

S.N.	Department / Division Name	Prevention	Reduction / Mitigation	Response/Recovery
1	District Administration / District Disaster Management Authority	Ensure to include all the prescribed standards of disaster management related to Prevention,	Adaptation and mitigation programmes in District Disaster Management, and earthquake zone wise monitoring of constructions.  Block and GP level risk reduction monitoring and review.	Analysis and risk assessment of civil construction and structures  Distribution of the responsibilities to various participants after analysis  Initiative to prepare

		Mitigation, Response and Preparedness at all GP level schemes	<p>Initiatives to incorporate the technology of earthquake resistant structures in the plans to be executed by the Gram Panchayats.</p> <p>Village-level capacity building, trainings works of Panchayati Raj representatives, training of volunteers for the tasks prescribed in the disaster management plan (village-level) of the people of the line department.</p>	<p>earthquake related village disaster management plan</p> <p>To ensure formation of various teams related to village level disaster management Practicing earthquake preparedness mock drills</p>
2	Building Construction	Ensuring compliance of the provisions of Bihar State Building Code for earthquake resistant building construction	<p>Retrofitting of identified dilapidated buildings after rapid visual screening</p> <p>Rapid visual screening and assessment of earthquake resistant capacity of all pre-constructed buildings specially government, hospitals, schools and administrative office buildings</p>	<p>Rapid visual screening and assessment of earthquake resistant capacity of all pre-constructed buildings specially government, hospitals, schools and administrative office buildings</p> <p>Promotion of earthquake resistant building construction techniques and training of all engineers, masons and bar binders working in the district</p>
3	Civic Bodies	<p>Passing the map in compliance with the provisions of the Building Act</p> <p>Identifying dilapidated buildings and banning its residential use</p>	Retrofitting of identified dilapidated buildings	<p>Keeping heavy vehicles like bulldozers, dumpers and cranes etc. available by proper repair and maintenance to deal any unavoidable situation / circumstances</p>

		Keeping in view the seismic zones-iv, registrations under RERA Act has to be allowed before construction of buildings		
4	Health Department (Civil Surgeons and their subordinate hospitals and offices)		<p>Identification of nearby trauma centres, orthopedic clinics, M.R.I., X-ray and surgical centers to ensure proper medical treatment of the injured persons during earthquake</p> <p>Hospital Disaster Management plan Preparation</p> <p>Retrofitting work of hospitals</p> <p>Preparation of hospital management plan to serve in large number of injured people during earthquake</p>	<p>Preparation of District level Standard Operating Procedure for Earthquake prone areas</p> <p>Keeping ambulances ready</p> <p>Keeping the primary doctors, ASHA workers active and ready for any unavoidable circumstances</p> <p>Keeping adequate stock of essential lifesaving medicines and other aids in hospitals</p>
5	Fire Department		<p>Search and Rescue Staff Training</p> <p>Ensuring audit of fire safety in buildings</p>	Always keep trained workforce ready along with firefighting equipment and vehicles to deal with fire during earthquakes.
6	NDRF / SDRF / Red Cross / Civil Defense		<p>Public awareness and mass training through mock drills</p> <p>Capacity building of community and to be self-reliant and prepared for search and rescue</p>	
7	Education	To ensure earthquake	Organize earthquake safety week every year in schools	Marking the school playground for setting up

	Department	resistant construction of school buildings to be constructed by Bihar State Educational Infrastructure Development Corporation Limited and other institutions.	Ensure to prepare school disaster management plan	<p>relief camps and deputation of teachers for the education of refugee children in these camps.</p> <p>Making knowledge of prohibitive obligations through public awareness</p> <p>Conducting mock drills in every school from time to time to protect oneself during earthquake</p> <p>Formation of earthquake disaster response teams like first aid team, relief and shelter surveillance team, emergency alarm team, evacuation team, search and rescue team etc. in each school and their regular training</p>
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### 5.3.2 Drought

S.N.	Department / Division Name	Prevention	Reduction / Mitigation	Response/Recovery
1	District Administration / District Disaster Management Authority		<p>Formation of Drought Task Force.</p> <p>Forecast Weather report to all the line department/ community.</p> <p>Aware farmers regarding Fasal Bima Yojana.</p>	<p>Aware the community regarding climate change and its risk and impact</p> <p>Demarcate drought prone region</p>
2	Agriculture Department	Promote Drip Irrigation	Protect crops from pests. Promote crops meant for fodders.	Adopt irrigation of crops which requires less water during a less rainfall year.

		<p>Promote irrigation of crop which requires less water</p> <p>Install Check Dams to maintain ground water quality and promote the use of manure.</p>	<p>Organise awareness programme regarding mitigation of drought like situation.</p> <p>Promote programmes launched by the Govt. and make the community aware of it.</p>	<p>Aware the community regarding prevention. Reduction and response recovery of drought.</p> <p>Aware the community with campaign, use of social media programs, TV/Radio, and Hoardings.</p> <p>Awareness campaign regarding environment safety and drought prevention.</p>
3	Panchayati Raj Department	Recycle of water	Ensure employment opportunities	Maintenance of Rivers/ Ponds & Lakes Store food grains in all the packs.
4	Water Resources	Maintenance of canals and other initiatives taken to ensure it workability.	Preparation of Emergency Crop Plan in terms of dealing with drought like situation.	Proper mechanism of irrigation facility in the district.  Maintenance of irrigation system and proper functioning of irrigation plan.
5	Veterinary	Ensure Vaccination of animals on time	Store enough fodders for animals in the shelter.	Ensure vaccination of animals to deal with weather related epidemics.
6	Energy		Regulate supply of energy	Ensure and make enough arrangements of electricity during drought.
7	Weather Department			Forecast Weather reports to all the lined departments and the community.

### 5.3.3 Drowning

S.N.	Department / Division Name	Prevention	Reduction / Mitigation	Response/Recovery
1	District Administration / District Disaster Management Authority	Install Danger signed boards in Ghats	Prohibit boating to endangered locations Prohibit children from going to dangerous spots Train children, elders Implementation of Safe Swim Programme by BSDMA	Construction of Ghats Siege the ponds Training of the communities Keep Boats, bamboo and Trained Divers ready
2	Transport Department	Ensure road safety according to Bihar Aadarsh 9 Ghat	Designing of Boats, Maintenance & Marking Loadline. Check BSDMA Website for safe boating guidelines.	Registration of Boats Numbering of Boats Training boat owners
3	Police		Regular Surveillance of Ghats	
4	Village level Community			Siege all the water bodies- Ponds, Lakes & Rivers. Construction of Ghats
5	Health Department			Ambulance and Doctors in Primary Health Centers

### 5.3.4 Road/ Rail Accidents

S.N.	Department / Division Name	Prevention	Reduction / Mitigation	Response/Recovery
1	District Administration / District Disaster Management Authority	Awareness Programmes	<p>Identification of Black Spots</p> <p>Organize Road Safety Program (9-15 Jan) every Year. Ensure participation of School kids, children from NCC.</p> <p>Establish Driving Training Centers</p>	<p>Formation of District Level Road Safety Committee and ensure regular meetings.</p> <p>Promote Community Policing</p> <p>Publish guidelines before any festivals regarding the road safety.</p>
2	Transport Department	<p>Follow Traffic Rules Strictly</p> <p>Don't use mobile phone while driving</p> <p>Follow guidelines issued by Bihar Transport Department.</p>	<p>Regular Maintenance of vehicles and its fitness</p> <p>Prohibit candidates with poor visibility from driving.</p> <p>Ensure using Seat Belt/ Helmet.</p> <p>Organize awareness programme</p>	<p>First Aid Box in every Private and Government Vehicles.</p>
3	Police	Ensure Traffic Rules regulation		<p>Ensure Road Safety guidelines issued by Transport Department, Government of Bihar.</p> <p>Traffic regulation at crossroads/ T Points. *‘One way’ and ‘No entry’ regulation.</p> <p>Ensure emergency vehicle.</p>
4	Health Department		Depute Paramedic Teams to take victims to hospital on time.	Formulation of Quick Response Team

			Detailed information of Trauma Centre, Referral Hospital	<p>Training of community regarding First-Aid</p> <p>Depute teams near Black Spots.</p> <p>Avail Medicines, Bandage, and stature in the hospital in the right quantity.</p> <p>Detailed info of blood bank, MRI, X-Ray Centre, Blood Donor, Specialist.</p>
5	Education Department		<p>Celebrate Road Safety Programme</p> <p>Create awareness amongst students</p>	

### 5.3.5 Epidemic (COVID 19)

Department	Preparedness	Prevention	Mitigation
<b>DDMA</b>	<p>Issue alert on spread of epidemic on Short / Medium / Long range duration and disseminate information received from NDMA/BSDMA and Ministry of Health &amp; Family Welfare to the public at large</p> <p>Disseminating public awareness messages on how to protect against the COVID-19 through print, electronic and social media and Information, Education and Communication (IEC) materials such as pamphlets, posters and advertisements and Television Commercials (TVCs) on Do's and</p>	<p>Social Distancing measures, use of masks and other safety measures should be popularized and people should be perused and strictly followed.</p> <p>Washing hands time and again and maintaining overall hygiene and cleanliness strictly followed.</p> <p>Promote advisories on travel, hygiene, avoiding crowd contact; quarantine of people, arriving from countries notified by MoHFW, use of personal protective equipment (masks, hand sanitizers usage); isolation of patients.</p>	<p>Establish Early Warning System and Inter-Agency Coordination to alert residents on COVID-19.</p> <p>Who will do what, when, and how is made clear to individuals and units of key departments, especially for health?</p> <p>Hold coordination meetings with credible NGOs and other civil society organisations, in order to see that the community cooperation is enhanced.</p> <p>DDMAs/District Collectors to proactively anticipate emerging criticalities in the district and evaluate their preparedness plans accordingly to address the gaps and revitalize the mitigation strategies.</p>

	<p>Don'ts and treatment measures for of COVID-19 related illnesses</p> <p>Avoid spread of fake news, advisories, rumors and unnecessary information through proper media management.</p>	<p>Build awareness among the departmental staff, communities and schools on potential disaster risks and measures to reduce the risk.</p>	<p>DDMA/DM in tandem with SDMA/Relief Commissioner</p> <p>coordinate with the local industries/corporate, under CSR activities, to mobilize emergency health relief and other relevant medical logistics. DDMA would ensure that the NDMA guidelines are followed so far as temporary shelters for migrant workforce returning from different state and maintaining physical distance of at least one meter between two persons and COVID-19 infected persons not considered as stigma.</p>
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<p><b>Public Health Department</b></p>	<p>Integrated Disease Surveillance System (IDSP) will be operationalized at the district level</p> <p>Active surveillance in containment zone with contact tracing within and outside the containment zone.</p> <p>Expanding laboratory capacity for testing all suspect samples, close contacts, ILI and SARI</p> <p>Establishing surge capacities for isolating all suspect / confirmed cases for clinical management.</p> <p>Implementing social distancing measures.</p> <p>Intensive risk communication</p>	<p>Circulate public hygiene and awareness etiquette as well as Do's and Don'ts on social media outreach platforms</p> <p>Conduct tabletop discussions and exercises on isolation, Quarantine, infection control, confinement measures;</p> <p>Mass screening mechanism, home isolation; amalgamation of Public Health and Law Enforcement drills, risk communication, surge capacity -and networking.</p> <p>Psychosocial care helpline and SOP for panic prevention needs to be in place with help of expert agencies</p>	<p>District IDSP units will be trained to acquire the capabilities of using standard case definition, regular data collection and analyzing data to detect early warning signs and take actions to mitigate any community outbreak.</p> <p>Surveillance at airports, ports and border crossings will be strengthened with appropriate controls.</p> <p>Rapid Response Team (RRT) will be trained under IDSP to undertake mapping of cases and contacts so as to delineate the containment and buffer zones.</p> <p>Identify and enhance capacities of isolation facilities in all districts</p> <p>Adequate segregation mechanism for international or patients from other states arriving or under treatment from these countries needs to be in place. Special care for the needs of the elderly is needed</p>
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### 5.3.6 Lightning

<b>Department</b>	<b>Preparedness</b>	<b>Prevention</b>	<b>Mitigation</b>
<p><b>DDMA</b></p>	<p>Issue alert of Lightning and disseminate information received from IMD, app Damini to the public at large.</p> <p>Emergency operation center at district level to be made functional for broadcasting early warning of thunderstorms /lightning.</p>	<p>Emergency operation center at district level to be made functional for broadcasting early warning of thunderstorms / lightning.</p> <p>Provide information regarding Damini app to all officers/personnel up to district, block, tehsil and village level and</p>	<p>Establish Early Warning System and Inter-Agency Coordination to alert residents on thunderstorm/ lightning</p> <p>Provide training of early warning broadcasting to the personnel working in Emergency Operation Center.</p> <p>DDMAs/District Collectors to proactively anticipate emerging</p>

	Disaster experts will ensure the above works by coordinating with the Additional District Magistrate	compulsorily download Damini app.  Make the villagers aware of what to do and not to do at the time of thunderstorm / lightning through the accountant, village development officer and village headman and to be widely publicized.	criticalities in the district and evaluate their preparedness plans accordingly to address the gaps and revitalize the mitigation strategies.  Installing lightning conductor or arrestor in old, existing and new buildings and it should be strictly followed.
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### 5.3.7 Fire

S.N.	Department	Preparedness	Prevention	Mitigation
1.	DDMA	<p>To equip the emergency operations center with modern communication resources.</p> <p>To analyze the risk and causes related to fire and prepare a check list related to the responsibilities of the concerned stakeholder.</p> <p>On the basis of this check list, assess the villages and take action by declaring it as a fire disaster prone village.</p> <p>Capacity building related to fire related techniques and preventive measures</p> <p>—</p> <p>To organize activities like celebrating fire safety week regularly by Panchayat</p>	<p>To run awareness campaign for prevention of fire, broadcast suggestions/advice from district level through Doordarshan and Radio and ensure compliance of Pantrak 1042 dated 02.03.2016, Headquarter of Bihar Home Rakshavahini, Patna.</p> <p>To analyze the risk and causes related to fire and prepare a check list related to the responsibilities of the concerned stakeholder.</p> <p>On the basis of this check list, assess the villages and take action by declaring it as a</p>	<p>Preparation of Fire Control Rooms and ensuring proper mechanism for early warning at village level through Tehsildar, Sarpanch, Patwari etc.</p> <p>Ensure proper mechanism for early warning at village level through</p> <p>Ensure proper functioning of DEOC with fully functional resources and availability of fire safety equipment.</p> <p>Compliance of Bihar Fire Rules 2014.</p> <p>Ensuring compliance of fire safety directives in the National</p>

		<p>representatives, village level personnel of various departments, volunteers and representatives of NGOs.</p> <p>Creating a time bound program related to fire safety.</p>	<p>fire disaster prone village.</p>	<p>Building Code 2005.</p> <p>To give wide publicity regarding preventive action.</p>
2.	<b>fire services</b>	<p>To make public the telephone and mobile numbers of the fire stations established at the district, sub-division and police stations.</p> <p>Keep your fire fighting vehicle fully stocked with the necessary materials and always have trained firefighters ready.</p> <p>To keep up-to-date road maps of fire prone areas, to be fully acquainted with them and to observe them regularly.</p> <p>To ensure availability of latest fire fighting equipments.</p>	<p>Permission to be constructed in multi-storey buildings and offices on the basis of a map with full fire fighting arrangements.</p> <p>Preparation of fire fighting plan of important buildings in the district and testing it from time to time through mock drills.</p> <p>Organize regular training of firefighters.</p> <p>To do public awareness work for the prevention of fire for the people.</p>	
3.	<b>Education Department</b>	<p>Organizing fire safety week in all schools.</p> <p>To do other work of community awareness.</p>	<p>Design a proper public relations system to ensure rumor control.</p>	<p>To make arrangements for fire safety in school buildings.</p> <p>School Safety Capacity building at the institutional level should be</p>

				promoted by carrying out various activities under the program (SSP).
4.	<b>Animal Husbandry</b>	To make the villagers aware to keep the pet animals safe from fire. Proper storage of medicines etc. for the animals affected by fire.		
5.	<b>RTO</b>	Provision of training to drivers, conductors and employees in first aid and basic life saving techniques.  To ensure adequate stock of first aid kits and maintenance of fire extinguishers in all vehicles and depots in the district.	Identify vehicles for fire rescue operations and prepare for quick deployment of vehicles for various purposes like large scale evacuation, transport of response teams, relief items, victims etc.	Create a database of private fire extinguisher vehicles available with schools, colleges and other private agencies, so that it can be used for the purpose of evacuation, if necessary
6.	<b>Health</b>	Training arrangements for Mobile Medical Groups, Psychological First Aid Groups, Psycho-Social Care Groups and Paramedics Quick Response Medical Groups (QRMTs).  Various activities related to capacity building and training measures By completing thus increasing capacity building at the institutional level.	Damage and need assessment training and formation of groups in the department.  Arrange for timely procurement of portable equipment for field and hospital diagnostics etc. Ensuring the training of members.	Ensure availability of portable supplies including adequate space for storage of medicines, availability of stock of medicines, survival equipment and portable oxygen cylinders, portable X-ray machines, portable ultrasound machines, triage tags, etc

7.	<b>Police</b>	<p>Conduct training for police personnel to deal with various situations for capacity building in the district.</p> <p>Deployment of trained city soldiers under District Disaster Management.</p>	<p>To develop a mechanism for early warning of various threats by police stations and police.</p> <p>Prepare the deployment plan of Home Guard and other volunteers to protect the property of the affected community.</p>	<p>Train police personnel and employees of PCR vans in first aid and basic life saving techniques.</p>
8.	<b>Civil defence and municipal</b>	<p>Training for volunteers in search and rescue (SAR), first aid, traffic management, dead body management, evacuation, shelter and camp management, public care and crowd management.</p>	<p>Make arrangements for procurement of search and rescue equipment through appropriate channels of district administration.</p>	<p>Disseminate information through books, magazines, radio, television, film shows, newspapers, documentary films, meetings etc.</p>
9.	<b>Building Construction Department</b>	<p>Discouraging the use and storage of highly inflammable materials in building construction.</p>	<p>To make necessary corrections from time to time in safety related instructions by taking lessons from fire incidents.</p>	<p>Compliance of Bihar Fire Rules 2014.</p> <p>Compliance with fire safety directives in the National Building Code 2005.</p> <p>Permitting the construction of various types of hospitals, banks, blood banks and sensitive office buildings on the basis of a fire proof map.</p>
10.	<b>Panchayati Raj departments</b>	<p>There must be space between the constructions of village buildings/huts so that it can be easily accessed in case of fire.</p>	<p>To focus on the use of firefighting techniques in the construction of rural buildings/huts. Soil coating on the lower part of the huts and the place where the</p>	<p>To make encroachment free by widening the access path of Ahar Pond, Peen.</p> <p>Incorporate the technology of</p>

		<p>To maintain water sources like ponds, ahars, pines, pools, wells etc. in the villages, keep them ready by getting them flown.</p> <p>To conduct public awareness work related to fire.</p> <p>Listing the availability of fire fighting materials like water sources, pumping sets, hose pipes, nozzles, long ladders etc. at the village level.</p>	<p>lamp is kept.</p> <p>Change in cooking times to prevent fires in the summer months. To make sure the availability of water for public works and to sensitize the villagers on other things by the Panchayat.</p>	<p>building a fire-cum-house in the future plan of your Panchayat.</p> <p>Compliance with standard operating procedure for fire.</p>
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### 5.3.8 Heat wave / Cold wave / Lightning

S.N	Department Name	Preparedness	Prevention	Mitigation
1	DDMA	<p><b>(a) Heat Wave</b> Taking cognizance of the announcement of weather forecast.</p> <p>To conduct awareness campaigns to use cotton clothes as much as possible and to eat hot and fresh food.</p> <p><b>(b) cold wave</b> To arrange a bonfire.</p> <p>To arrange warm clothes for protection from winter.</p> <p>To make people aware of the effects and measures and provisions of cold wave.</p> <p>To arrange shelter for</p>	<p><b>(a) heat-wave</b> Provision of drinking water at places like market/railway station/bus stand etc.</p> <p>Wide publicity of the following suggestion- If it is necessary to go out, then never go out on an empty stomach.</p> <p>Come out after drinking water and covering your head completely.</p> <p>Always protect yourself from hot air. Carry drinking water and avoid dehydration.</p> <p><b>(b) cold wave</b> Keeping the body warm from external sources, consuming sunlight when the sun shines.</p>	<p><b>a) heat-wave</b> Fixing of summer working hours in schools/colleges and government/non-government establishments.</p> <p>To change the opening and closing times of the children's schools.</p> <p>Instructing to keep the school closed in case of severe heat wave.</p> <p>To determine the summer work period in MNREGA work and other construction works.</p> <p><b>(b) cold wave</b></p>

		<p>the patients.</p> <p><b>(c) Lightning</b> To publicize suggestions related to do's and don'ts to avoid thunderstorm.</p>	<p>To make arrangements for lighting bonfires for people without homes, sleeping in public places and people belonging to weaker sections near night shelter, gig halt, rickshaw halt, railway station, bus stand etc.</p> <p>To provide blankets for laying and covering the houseless and weaker sections of the people who are resting the night under the open sky.</p> <p><b>(c) Lightning</b> Avoid taking shelter under tall trees, electric poles, towers, etc., in weather prone to thunderstorms.</p> <p>Advising to refrain from using mobile or electrical equipment in view of the possibility of freezing.</p> <p>Refusing to connect metal wires between the window and door of the house and the tree.</p> <p>Advised to stay out of river/canal/pond in cold weather prone.</p>	<p>To change the opening and closing times of the children's schools.</p> <p>Instructing to keep the school closed in case of severe cold wave.</p> <p><b>(c) Lightning</b> Installation of lightning conductors in tall buildings.</p>
2	<b>Health Department</b>	<p><b>a) Heat-wave</b> Quantity needed for the treatment of heat-heat-borne diseases such as heat rash (heat boils), convulsions (heat cramps), fainting (heat rash), heat exhaustion, heatstroke, dehydration In medicine storage.</p> <p><b>(b) cold wave</b> Cold wave disease</p>	<p><b>(a) heat-wave</b> To issue necessary advisories from time to time for the community to avoid heatstroke.</p> <p><b>(b) cold wave</b> To issue necessary advisories from time to time to avoid cold wave for the community.</p>	

		like numbness in human limbs, temporary discoloration of skin to bluish white, frost rash - due to touch of cold metal/storage of medicine in required quantity for the treatment of chill burn /hypothermia.		
3	Animal husbandry	To store animal related medicines.	Dissemination of appropriate advice to livestock / poultry farms/ dairy farms for measures to prevent heat-wave and cold wave.	

### 5.3.9 Naxal Attack

S.N	Department Name	Preparedness	Preparedness, Prevention and Response
1	Central Agencies: MHA, Central Armed Forces State Agencies: State Police, Home Department, Department of Education Art and Culture Department	Workshop / Meeting, Issuance of Advisory, Print & Electronic Media Awareness Campaign, Social Media Awareness Campaign, Review of Preparedness through Video Conferencing, Regular Video Conference  Apki Sarkar Apke Dwar (ASAD)	<p><b>Preparedness and Response:</b></p> <ul style="list-style-type: none"> <li>Strengthening local intelligence network</li> <li>Improving police intelligence gathering</li> <li>Training and Requiring local police station</li> <li>Improving coordination with CRPF and other Central forces</li> <li>Developing strategy for additional force mobilization</li> <li>Strengthening police communication network</li> <li>Improving coordination between police and health department</li> <li>Deploy Central military force</li> <li>Police force modernization</li> <li>Assisting in security-related infrastructure</li> </ul> <p><b>Prevention and Response:</b></p> <ul style="list-style-type: none"> <li>Police monitoring and patrolling</li> <li>Checking and monitoring</li> <li>Enhancement of Monitoring and Coordination mechanism</li> </ul> <p>ASAD is for the rural connectivity, Making roads and bridges at local level to suppress the challenges faced by rural people due to lack of road connectivity.</p>

### Law and order approach for Naxal:

- 1) **Modernization of Police Forces:** The government has launched a Police Modernization Scheme in areas affected by Naxal movements. Under this scheme, central government provided money to the state governments to modernize their equipment and tactical gear including latest communication, vehicles and infrastructure facility.
- 2) **Multi-Agency Centre (MAC):** MAC at the Central level and State Multi-Agency Centre (SMAC) at the state level have proved to be highly effective in Maoist hotbeds like Jagdalpur and Gaya. Other institutional measures include strengthening of State-Intelligence Bureaus (SIBs) in the LWE affected areas.
- 3) **Deployment of Central Paramilitary Forces:** Central Reserved Police Forces (CAPF) have been created to carry out counterinsurgency strategies. More than 70,000 CRPFs have been deployed in the Naxal-affected states. In addition, the Centre has helped states to raise 14 Specialized Commando Battalion (CoBRA) that are equipped and trained in guerrilla and jungle warfare techniques and deployed to the worst-affected districts.
- 4) **SAMADHAN**– The NDA government led by Prime Minister Narendra Modi, launched ‘SAMADHAN’ in May 2017. The acronym stands for the following: S – Smart Leadership, A – Aggressive Strategy, M – Motivation and Training, A – Actionable Intelligence, D - Dashboard Based KPIs (Key Performance Indicators), and KRAs (Key Result Areas), H- Harnessing Technology, A – Action plan for each theatre and N- No access to Financing.

## CHAPTER - 6

### CAPACITY BUILDING THROUGH TRAINING AND AWARENESS GENERATION

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Appropriate and need based capacity building will be the key to effective disaster risk reduction (DRR) in the district. The approach for capacity building has to focus on informed capacity analysis with short term, medium term and long-term capacity goals with a multi-layer initiative. Training is an important instrument for capacity building, which should leverage upon the local capacity of the district to facilitate various training programs for different groups of functionaries and stakeholders at various levels within the district. These training programs should focus both on response and mitigation-centric approach to build upon the existing capacity of the district.

#### 6.1 Awareness Generation

In Jamui although there is awareness about the disasters which occur in the district among the district and block level officers and employees, the awareness about the role their respective departments have to play, is less than the desired level. Disaster management is still perceived primarily as a stand-alone function of the Disaster Management Division (DMD). Except District Magistrate and Officer in charge of the Disaster Management Division and few senior district level officers, the other stakeholders have yet to be adequately aware of the functions entrusted to District Disaster Management Authority and the Local Authorities under the Disaster Management Act, 2005. At present there are no department-wise Disaster Management Plans in the district.

At the GP level also, the awareness about disasters is not up to the mark, primarily based on traditional practices and experiences. Therefore, there is a need to improve the level of awareness amongst government officers and employees at district and sub district level.

However BSDMA has conducted various awareness programs such as Mukhyamantri School Safety Program (MSSP), Safe Saturday, Guidelines for Safe Chhath Pooja, Office Safety, Flood Safety, Earthquake safety advisory for Lightning, fire, road safety heat action planning etc.

Further NDRF and SDRF have also extended support in awareness generation by conducting drills. The BSDMA has also initiated action to improve the public awareness by extending financial and technical assistance to districts, including Jamui, for conduct of mock drills, particularly for earthquakes in schools.

The basic precautions to be taken for disaster risk reduction have been incorporated in the school syllabus for class VIII (Science). However, it has to be further strengthened by taking it down to the community level covering all stakeholders through different modes including person to person contacts, by involving village level officers, NGOs and SHGs in rural areas and ward level officials and voluntary organizations/ NYKS/ NSS in Jamui District.

Various SOPs, DOs and DON'T'S are issued and are available on the **BSDMA Website**.

## **6.2 Institutional Capacity Building**

The capacity building of DDMA, its officials, BAS officers, all BDOs, COs and other concerned persons of District administration and line departments has to be undertaken on priority and in right earnest. The institutional capacity building covers not only the disaster management training of officials of various departments policy makers, police, fire services, SDRF and the other professionals including Doctors, Engineers, Architects, Masons, Nurses and Teachers etc, but also entails the re-engineering of systems and processes including disaster management protocols at the organizational level. Further, it also indicates the Management of Animals in Emergencies (for Veterinarians), Disaster Management training needs of Anganwadi/ ANM Sevikas, Kisan Salah Kars and other front line workers. Information is available on BSDMA Website.

Retraining of the officials is also required to be carried out as per the scheduled requirements of disaster management. Being the Nodal entity for Disaster Management, mainly it is the responsibility of District Administration/ Revenue Department to oversee training & capacity building of all concerned.

### **6.3 Community Capacity Building**

The community capacity building exclusively covers the community based disaster risk management aspects. It also extensively covers the disaster preparedness and training of vulnerable people (persons with disability, women & children etc.). The local NGOs/ CBOs, PRIs also including Mukhiyas, Sarpanch, Youth organizations, Mahila Mandals, Divers, Boatmen are the main pillars of Community Capacity Building. BSDMA has come out with specific training modules for these stakeholders for the purpose of disaster risk reduction and management. The list of trained persons are given in Annexures.

In Jamui, there are people in the community who are able to provide immediate assistance for treatment of snakebites which can help in survival of the victim till s/he can receive proper medical attention by way of anti-venom injection. Few elderly persons can also judge which snakes are poisonous. Similarly, in case of drowning, there are people who keep the divers alert at specific strategic places, which helps the community to function as first responders. It would be desirable to document such traditional practices, certify such practices and develop it further. The elderly in the village can also train others in village how to assess and make use of such practices.

### **6.4 Training Methods and Approaches**

Apart from the traditional approach to training with focus on class room training, there is a need to promote and focus on hands-on practical training aimed at enhancing behavioral skills related to assigned roles and responsibilities of the functionaries and personnel being trained. Methods related to this would include- Observation and study tours (OSTs), Games and simulation exercises, Drills including mock drills, Field Assignments, Case studies and Role plays.

### **6.5 Training Calendar**

Before development of a training calendar, it would be desirable to develop a Human Resource and Capacity Development Plan (HR & CD Plan) for Jamui district, quantifying the number of personnel to be trained at different levels in each sector and trainees from different stakeholders. The training calendar has to be prepared and followed on the basis of identified training needs during capacity analysis. This will also entail the following:

- Development of specific Training Modules for each group of trainees
- Development of Training Materials with audio/ video aids
- Development of Master Trainers and trainers
- Institutional Structure in the district for imparting training
- Modalities for selection of trainees
- Monitoring and evaluation of training courses and making necessary changes in the training modules

S.N.	Training programmes required for
1.	District magistrate and ADM in charge of disaster management
2.	Department Heads of key departments at district level e.g. Health, Education, Water and sanitation, Police, Fire Services, Rural Development, Urban Development, PRI Department, Civil Defence and Home Guards etc.
3.	Block Development Officers and Circle Officers
4.	Village level officers
5.	Elected members and officials of Zila Parishad, Nagar Parishad and Gram Panchayats
6.	Non-Government Organisations and Self Help Groups
7.	Members of Task Forces at village level
8.	Teachers and Students at senior secondary and college level
9.	Doctors and paramedics and hospital administrators
10.	Representatives of urban local bodies such as engineers and architects, officers concerned with providing basic civic services
11.	Refresher Training Programs

**Table 12: Required Training Programmes**

**1. List of Masons / engineers / architect/ swimmers/ community volunteers**

Details with the link to access list of masons, engineers, architects, swimmers, community volunteers has been shared in annexure. Following is the weblink of the important DM and DRR trainings conducted by BSDMA for key stakeholders at district level <http://bsdma.org/Training-Workshops.aspx?id=1>

Table a: list of masons trained on earthquake resistant building

S.N.	Name of Mason (Shri/Md.)	Father's Name (Shri/Md.)	Name of Village	Age	Experience	Qualification	Mobile No.
1	Jivlal Yadav	Jhagaru Yadav	Aganpathar	50	32	5th	7250691902
2	Naresh Yadav	Bharat Yadav	Balthar	40	20	6th	9006645017
3	Md. Mukhtar	Md. Mumtaj	Mandhanta	35	15	Illiterate	7033745168
4	Gopal Sah	Ramotar Sah	Sono	36	6	10th	9576860058
5	Pawan Kumar Saw	Anaksha Saw	Babudie	32	9	6th	8102635269

Table b: list of engineers trained on earthquake resistant building

Sr. no.	Name (Er.)	Designation	Department	Place of Posting	Mobile No.
1	Chandra bhushan	JE	Nagar Parishad	Jamui	9304515570
2	Shankar Prasad Choudhary	AE	RWD	Jhajha	8863991911
3	Prakash Kr. Mahto	JE	RWD	Jhajha	7004879801
4	Ramjanam Pd. Singh	JE	RWD	Jhajha	9661544749
5	Rajiv Ranjan	JE	RWD	Jamui	8986915533

Table c: State level trained Mukhiya and Sarpach on Disaster risk reduction

S.N.	Block Name	Name	Designation	Name of Panchayat	Mobile No.
1	Barhat	Surender Paswan	Mukhiya	Noomar	9931315592
2	Gidhour	Kanta Prasad Singh	Mukhiya	Maura	9771290428
3	Barhat	Ranjit Kumar Paswan	Sarpanch	Noomar	8877811791
4	Gidhour	Srimati Neelu Verma	Sarpanch	Ratanpur	9708847070

## CHAPTER - 7

### RESPONSE PLANNING

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The effective response planning requires realistic identification of the likely response functions, assignment of specific tasks to individual response agencies, identification of equipment, supplies and personnel required by the response agencies for performing the assigned tasks. A response plan essentially outlines the strategy and resources needed for search and rescue, evacuation, etc. Response plan is supplemented by relief management planning activities, including relief needs, transportation routes, coordination with local police, District, State, national & international relief teams, transport vehicles, alternative communication in case of the regular communication failure. There is need of a response structure to activate the Disaster Management Plan (DDMP) once a disaster strikes.

In Jamui District District Magistrate shall be the focal point (acting as a Responsible Officer) for directing, super vision, and monitoring the DDMP. The DM shall function with the assistance of the District Emergency Operation Centre (DEOC) to be activated to its full capacity at time of disaster and which shall be the nodal center for disaster management. All information regarding disaster situations shall at once be communicated to the District Emergency Operation Centre (DEOC). The DEOC would work as per the EOC manual.

The DEOC would function through Emergency Support Functions (ESFs). The response for search and rescue, medical, arrangements for logistics, communication, temporary shelter etc. would be as per the ESF plan prepared for the district. The primary agency responsible for a particular ESF would act a coordinator and seek necessary assistance from the secondary agency. If the assistance of the secondary agencies involves the requisitioning from the District Magistrate's office, the primary agency would place a request to this effect with the DEOC.

## **7.1 EMERGENCY SUPPORT FUNCTIONS**

### **7.1.1 Emergency Support Functions (ESFs) Plan at District Level**

In the aftermath of a natural disaster wherein District Administration's overall coordination is needed, the command, control and coordination will be carried out under the ESFS Plan. District EOC shall activate the ESFS and the concerned Department/Agency of each ESFS shall identify requirements in consultation with their counterparts in affected districts, mobilize and deploy resources to the affected areas of the district. The District EOC shall maintain a close link with the State EOC.

ESFs shall be responsible for the following:

1. The designated authorities for each of ESF shall constitute quick response teams and assign the specific task to each of the member.
2. The designated authorities for each of the ESF shall identify and earmark the resources i.e. manpower and materials to be mobilized during the crisis.
3. An inventory of all the resources with details shall be maintained by each of the designated authority for each of the ESF.
4. The designated authority for each of the ESF will also enter into pre-contracts for supply of resources, both goods and services to meet the emergency requirements.
5. The designated authority for each of the ESF will be delegated with adequate administrative, legal and financial powers for undertaking the tasks assigned to them.

### **7.2 Powers and Functions of DDMA in the event of disaster:**

According to Section 34 of Disaster Management Act, for the purpose of assisting, protecting or providing relief to the community, in response to any threatening disaster situation or disaster, the District Authority may-

- (a) Give directions for the release and use of resources available with any Department of the Government and the local authority in the district;
- (b) Control and restrict vehicular traffic to, from and within, the vulnerable or affected area;
- (c) Control and restrict the entry of any person into, his movement within and departure from, a vulnerable or affected area;
- (d) Remove debris, conduct search and carry out rescue operations;
- (e) Provide shelter, food, drinking water and essential provisions, healthcare and services;

- (f) Establish emergency communication systems in the affected area;
- (g) Make arrangements for the disposal of the unclaimed dead bodies;
- (h) Recommend to any Department of the Government of the State or any authority or body under that Government at the district level to take such measures as are necessary in its opinion;
- (i) Require experts and consultants in the relevant fields to advise and assist as it may deem necessary;
- (j) Procure exclusive or preferential use of amenities from any authority or person;
- (k) Construct temporary bridges or other necessary structures and demolish structures which may be hazardous to public or aggravate the effects of the disaster;
- (l) Ensure that the non-governmental organizations carry out their activities in an equitable and non-discriminatory manner;
- (m) Take such other steps as may be required or warranted to be taken in such a situation.

### **7.2.1 Activities at District Emergency Operations Center**

The District Collector would be assisted to perform the roles assigned to him and DDMA by the District Emergency Operation Centre (Control Room). The DEOC would perform the following functions:

1. District control room would be the nerve Centre for the disaster management;
2. To monitor, coordinate and implement the actions for disaster management;
3. Activate the ESF in the event of a disaster and coordinate the actions of various departments/agencies;
4. Ensure that all warning, communication systems and instruments are in working conditions;
5. Receive information on a routine basis from the district departments on the vulnerability of the various places and villages (parts of the districts);
6. Receive reports on the preparedness of the district level departments and the resources at their disposal to arrange and meet their requirements;
7. Upgrade the Disaster Management Action according to the changing scenario;
8. Maintain a web-based inventory of all resources through the India Disaster Resource Network (IDRN);
9. Provide information to Relief Commissioner' Office of disaster/emergencies/accidents

taking place in the district regularly and maintain a database of disasters and losses caused by them;

10. Monitor preparedness measures and training activities;
11. Providing information at district level, local level and disaster prone areas through appropriate media;
12. Brief the media of the situations and prepare day to day reports during the disasters;
13. To report the actual scenario and the action taken by the District Administration;
14. Maintain a database of trained personnel and volunteers who could be contacted at any time;
15. Liaise with on-site operation Centre, State EOC and other emergency services.

The Assistant Commissioner /ADM shall be the Nodal Officer for Disaster Management would be in-charge of the DEOC. The design, layout, equipment and operation of the DEOC would be as per the EOC Manual prepared at the State level.

### **7.2.2 Role of Branch Officers/ Nodal Officers**

Branch arrangements would be activated only on the occurrence of a major disaster and it would provide for division of tasks, information gathering and record keeping and accountability of the Branch officer to the Responsible Officer for specific functions. Each Branch should have a Branch Officer of the rank of Deputy Secretary or Joint Secretary at the State Level and Head of Office of the concerned department at the District level assigned.

- i. The Branch/Nodal Officers for Operations, Services, Logistics, Communication and Information Management, Resource Branches will be from the Revenue Department
- ii. For Health Branch, the officer will be from the Public Health Department
- iii. For Infrastructure Branch, the officer will be from the Public Works Department.

All Branch/Nodal Officers will work under the overall supervision and administrative control of the Responsible Officer. All the decisions taken in the DEOC during emergency have to be approved by the Responsible Officer.

Besides the above the DEOC would also do the following functions:

- a) Assimilation and dissemination of information.

- b) Liaise between Disaster site and State Head Quarter.
- c) Monitoring, coordinate and implement the DDMP.
- d) Coordinate actions and response of different departments and agencies.
- e) Coordinate relief and rehabilitations operations
- f) Hold press briefings.

### 7.3 Primary and Secondary Agencies

The designated primary agency, acting as the State agency shall be assisted by one or more support agencies (secondary agencies) and shall be responsible for managing the activities of the ESF and assisting the district in the rescue and relief activities and ensuring that the mission is accomplished. The primary and secondary agencies have the authority to execute response operations to directly support the needs of the affected districts.

**Table: 13 Agency for Each Emergency Support Functions and Roles to be performed**

S. N.	ESF	Primary Agency	Secondary Agency	Responsibilities of Primary Agency	Activities for Response	Role of Secondary Agency
1	Communication	Telecom	Police Units and Armed forces in the area	Coordination of national action to ensure telecommunication support to the state and district.  Coordinate the requirement of temporary telecommunications in the	Coordination of national action to ensure telecommunication support to the state and district.  Coordinate the requirement of temporary telecommunications in the	Make available police wireless networks at the affected locations.  Coordinate with other networks available such as HAM

				affected areas.	affected areas.	radios etc. Units of armed forces can provide communication networks on the request of a competent authority.
2.	Public Health	Dept. of Health and Family Welfare	Department of Ayurveda / AYUSH	<p>To coordinate direct and integrate state level response.</p> <p>Direct activation of medical personnel, supplies and equipment.</p> <p>Coordinate the evacuation of patients</p> <p>To prepare and keep ready mobile hospitals and stocks</p>	<p>Provide systematic approach to patient care;</p> <p>Perform medical evaluation and treatment as needed;</p> <p>Maintain patient tracking system to keep record of all patients treated;</p> <p>Mobilization of the private health services providers for</p>	<p>To perform the same functions as assigned to the primary agency;</p> <p>Provide manpower to the primary agency wherever available and needed;</p> <p>Make available its resources</p>

				<p>To network with private health service providers</p> <p>To provide for mass decontamination</p> <p>Check stocks of equipment and drugs</p>	<p>Emergency response.</p> <p>In the event of CNBR disaster to provide for mass decontamination of the affected population;</p> <p>Maintain record of Dead and Arrange for their post mortem.</p>	<p>to the primary agency wherever needed and available.</p>
3.	Sanitation / Sewage Disposal	Urban Development and Rural Development	Irrigation and Public Health	<p>Make arrangement for proposal disposal of waste in their respective areas;</p> <p>Arrange adequate material and manpower to</p> <p>Maintain cleanliness and hygiene.</p>	<p>Ensure cleanliness and hygiene in their respective areas;</p> <p>To arrange for the disposal of unclaimed bodies and keeping record there of; hygiene</p>	<p>Repair the sewer leakages immediately</p> <p>Provide bleaching powder to the primary agencies to</p> <p>Check maintain sanitation.</p>

					Promotion with the availability of mobile toilets  To dispose of the carcass.	
4.	Power	BSPHCL	SBPDCL	Provide and coordinate State support until the local authorities are prepared to handle all power related problems;  Identify requirements of external equipment required such as DG set etc.;  Assess damage for national assistance	Support to Local Administration Review the total extent of damage to the power supply installations by a reconnaissance survey; to provide alternative means of power supply for emergency purposes;  Dispatch emergency repair teams equipped with tools, tents and food;  Hire casual labor for the clearing of damaged poles etc.	Make arrangement for and to provide the alternative sources of lighting and heating to the affected populations and for the relief camps.
5.	Transport	Department of transport (RTO)	BSRTC, Civil Aviation	Overall coordination of the requirement of transport;	Coordinate arrangement of vehicles for transportation of relief supplies from	Make available its fleet for the purpose of SAR,

				<p>Make an Inventory of Vehicles available for various purposes;</p> <p>Coordinate and implement emergency related response and recovery functions, search and Rescue and damage assessment</p>	<p>helipads / airports to the designated places;</p> <p>Coordinate arrangement of vehicles for transportation of SAR related activities</p>	<p>transportation of supplies, victims etc.;</p> <p>Act as stocking place for fuel or emergency operations;</p> <p>Making available cranes to the District Administration;</p> <p>To coordinate for helicopter Services etc. required for transportation of injured, SAR team, relief and emergency supplies</p>
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6.	Search and Rescue	Civil Defense, Home Guards, Fire and Emergency Services (Commandant HG)	SDRF, Armed and Para military forces, Police, Red Cross, VOs, Volunteers	<p>Establish, maintain and manage state search and rescue response system;</p> <p>Coordinate Search and rescue logistics during field operations;</p> <p>Provide status reports of SAR updates throughout the Affected areas.</p>	<p>Discharge all ambulatory patients for the first aid which has the least danger to health and others transported to safer areas.</p>	<p>108 and Red Cross to make available ambulances as per Requirement.</p> <p>SDRF, VOs and Volunteers to assist the primary agency in SAR;</p> <p>Armed and Para military forces to provide assistance to civil authorities on demand;</p> <p>Police to arrange for the transportation on and postmortem of the dead.</p>
7.	Works and Engineeringg	BIHAR PWD	CPWD, National Highways Authority of India, MES, BRO	<p>Emergency clearing of debris to enable reconnaissance</p> <p>Clearing of roads;</p> <p>Assemble casual labor;</p>	<p>Establish a priority list of roads which will be opened first;</p> <p>Constructing major</p>	<p>Making machinery and manpower available to the PWD and to keep</p>

				<p>Provide a work team carrying emergency tool kits, depending on the nature of disaster, essential equipment such as</p> <ul style="list-style-type: none"> <li>• Towing Vehicles</li> <li>• Earth moving equipment</li> <li>• Cranes etc.</li> </ul> <p>Construct temporary roads;</p> <p>Keep national and other main highways clear from disaster effects such as debris etc.;</p> <p>Networking with private services providers for supply of earth moving equipment etc.</p>	<p>temporary shelters;</p> <p>Connecting locations of transit/relief camps;</p> <p>Adequate road signs should be installed to guide and assist the relief work;</p> <p>Clearing the roads connecting helipads and airports;</p> <p>Restoring the helipads and making them functional;</p> <p>Rope in the services of private service providers and secondary services if the department is unable to bear the load of Work.</p>	<p>national highways and other facilities in functional State.</p>
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8.	Information and Communication	District Collectorate(AC /ADM)	Department of IT/NIC (DIO, NIC)	<p>Operate a Disaster Welfare Information (DWI) System to collect, receive, and report and Status of Victims and assist family reunification;</p> <p>Enable local authorities to establish contact with the state authorities;</p> <p>Coordinate planning procedures between district, the state and the Centre;</p> <p>Provide ready formats for all reporting procedures as a standby.</p>	<p>Documentation of response/ relief and recovery measures;</p> <p>Situation reports to be prepared and completed Every 3-4 hours.</p>	<p>Render necessary assistance in terms of resources, expertise to the primary agency in performing the assigned task.</p>
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9.	Relief Supplies	Collect orate (AC/ADM)	Department of Food and Civil Supplies	<p>To collect, process and disseminate information about an actual or potential disaster situation to facilitate the overall activities of all responders in providing assistance to an affected area in consultation;</p> <p>Coordinate activities involved with the emergency provisions;</p> <p>Temporary shelters;</p> <p>Emergency mass feeding;</p> <p>To coordinate bulk distribution of emergency supplies;</p> <p>To provide Logistical and resource support to local entities;</p> <p>In some instances, services also may be</p>	<p>Support to Local Administration</p> <p>Allocate and specify type of requirements depending on need;</p> <p>Organize donation (material) for easy distribution before entering Disaster site.</p>	<p>To assist the primary agency in arranging and supplying relief supplies;</p> <p>To assist the primary agency in running the Relief camps.</p>
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				<p>provided to disaster workers;</p> <p>To coordinate damage assessment and post disaster needs Assessment.</p>		
10.	Food and Supplies	Department of Food and Public Distribution	Co-operatives Department	<p>Requirement of food and clothing for affected population;</p> <p>Control the Quality and quantity of food, clothing and basic medicines;</p> <p>Ensure the timely distribution of food and clothing to the people;</p> <p>Ensure that all food that is distributed is fit for human Consumption.</p>	<p>Make Emergency food and clothing supplies available to population;</p> <p>Ensure the Provision of specific nutrients and supplementary diet for the lactating, pregnant women and Infants.</p>	<p>Ensuring the distribution of food supplies to the affected population through the PDS network etc.</p>

11	Drinking water	PHED	Department of Urban Development	<p>Procurement of clean drinking water;</p> <p>Transportation of water with minimum wastage;</p> <p>Special care for Women with Infants and pregnant women;</p> <p>Ensure that sewer pipes and drainage are kept separate from drinking water Facilities.</p>	<p>Support to local administration;</p> <p>Water purification installation with halogen Tablets etc.</p>	<p>To assist the primary agency wherever ULB is associated in the distribution of potable Water.</p>
12.	Shelter	Collectorate	PWD and Panchayat Raj Dept.	<p>Provide adequate and appropriate shelter to all population;</p> <p>Quick assessment and identifying the area for the establishment of the relief camps;</p> <p>Identification of public buildings as possible shelters;</p> <p>Identifying the population which can be provided with</p>	<p>Support to Local Administration</p> <p>Locate adequate relief camps based on survey of damaged houses;</p> <p>Develop alternative arrangements for population living in structures that might be affected even after the disaster.</p>	<p>PWD would assist the primary agency in establishing temporary shelters of larger dimensions; Department of Panchayati Raj through local Panchayats would assist the primary agency in establishing shelters of smaller dimension s.</p>

				support in their own place and need not be shifted reallocated; Locate relief camps close to open traffic and transport Links.		
13.	Media	Information and public relations dept.	Local DD and AIR	To Provide And collect reliable information on the status of the disaster and victims for effective coordination of relief work at state level; Not to intrude on the privacy of individuals and families while collecting information; Coordinate with DOCs at the airport and railways for required information for international and national relief workers;	Use and place geographical Information to guide people towards relief operation; Use appropriate means of disseminating information to victims of affected area; Curb the spread of rumors; Disseminate Instructions to all stakeholders.	To assist the primary agency in discharge of its role

14.	Help lines	Collectorate	Department of Public Relations	<p>To receive distress calls from the affected people and coordinate with the control room.</p> <p>To facilitate the optimization of donations received in kind ;</p> <p>Coordinate, collect, process, report and display essential elements of information and to facilitate support for planning efforts in response operations;</p> <p>Co-ordinate pre-planned and event-specific aerial reconnaissance operations to assess the overall disaster situation;</p> <p>Pre-positioning</p>	<p>One of the most critical needs will be having a simplified way of identifying and tracking victims and providing assistance;</p> <p>Identify locations for Setting up Transit and relief camps, feeding centers and setting up of the Help lines at the nodal points in the state and providing the people the information about the Numbers.</p>	<p>To assist the primary agency in performing its job effectively and provide its manpower and resources For the purpose.</p>
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				<p>assessment teams headed by the State coordinating officer and deployment of other advance elements;</p> <p>Emergency clearing of debris to enable reconnaissance of the damaged areas and passage of emergency personnel and equipment for life saving property protection and health and safety</p>		
15.	Animal Care	Department of Animal Husbandry	Department of Panchayati Raj	<p>Treatment of animals;</p> <p>Provision of vaccination;</p> <p>Disposal of Dead animals.</p>	<p>To arrange for timely care and treatment of animals in distress;</p> <p>Removal of dead animals to avoid outbreak of epidemics.</p>	<p>To assist the primary agency in performing its role.</p>

16.	Law and order	Police	Home Guards (Commandant Home Guards)	<p>Having sound communication and security plan in place to coordinate law and order issues;</p> <p>Training to security personnel in handling disaster situations and issues related to them.</p>	<p>To maintain law and order;</p> <p>To take measure against looting and rioting;</p> <p>To ensure the safety and security of relief workers and material;</p> <p>To take specific Measure for the protection of weaker and vulnerable section of the society;</p> <p>To provide safety and security at relief camps and temporary Shelters.</p>	To assist the primary agency by making available Manpower
17.	Removal of trees and fuelwood	Forest	Forest Corporation	<p>Removal of fallen trees; To provide fuel wood for the relief camps and public;</p> <p>Have adequate storage of fuel wood and make arrangement for distribution thereof;</p> <p>To provide fuel wood for Cremation.</p>	<p>Arrange for timely removal of trees obstructing the movement of traffic;</p> <p>Arrange for timely removal of trees which have become dangerous;</p> <p>Make arrangement for fuel wood for the relief camps and for</p>	To support and supplement the efforts of the primary Agency.

					general public; Provide fuel wood for mass cremation etc.	
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## CHAPTER - 8

### REHABILITATION, RECONSTRUCTION AND RECOVERY

In recovery phase both reconstruction and rehabilitation activities are carried out on priority basis. The post-disaster phase is more important to reconstruct the basic facilities and rehabilitate the victims properly. Rehabilitation and reconstruction are primarily carried out by the local bodies (Gram Panchayats, District, Talukas, Municipal Corporations, Municipalities, etc.) and different Government departments and boards. The contribution of both government as well as affected people is significant to deal with all the issues properly. Immediate and Long Term recovery plan includes following broad activities:

<b>Damage assessment</b>	<b>Disposal of debris and dead bodies</b>	<b>Disbursement of assistance for houses</b>	<b>Formulation of assistance packages</b>
<b>Cases of non-starters</b>	<b>rejected cases, non-occupancy of houses</b>	<b>Town planning and development plans</b>	<b>Reconstruction as Housing Replacement Policy</b>
<b>Awareness and capacity building</b>	<b>Housing insurance</b>	<b>Grievance redresses</b>	

**Table 14: Immediate and Long Term recovery plan Activities**

#### 8.1 Sector specific approach and processes for Reconstruction, Rehabilitation and Recovery

Sector	Approach	Process
<b>Public assets:</b> <ul style="list-style-type: none"> <li>• <b>Roads and bridges</b></li> <li>• <b>Public buildings like hospitals and schools</b></li> </ul>	Multi hazard resistant construction to be followed while reconstruction of public assets. For example <ul style="list-style-type: none"> <li>• Hazard resistant buildings to be made with the help of certified engineers.</li> </ul>	Detailed damages and needs assessment:  Multi sectoral / multidisciplinary teams are to be made which can do a detailed damage and need assessment of

	<ul style="list-style-type: none"> <li>• Use of non-shrinking mortar</li> <li>• Evacuation plans to be made for the public buildings</li> <li>• Non-structural mitigation measures to be taken into consideration Risk sensitive development will be ensured in each of the reconstruction Programmed.</li> </ul> <p>For example:</p> <ul style="list-style-type: none"> <li>• Earthquake zone mapping to be implemented</li> <li>• Detailed geological survey of the land to be used for reconstruction.</li> <li>• Recommendations from PDNA report to be considered.</li> </ul>	<p>the entire area.</p> <ul style="list-style-type: none"> <li>• Develop a detailed recovery plan through multi departmental participation:</li> </ul> <p>Specific recovery plan through consultative process of different line department are to be made.</p> <ul style="list-style-type: none"> <li>• Arrange for funds from Central government, state government, multilateral agencies</li> <li>• Multi sectoral Project Management Unit to be made.</li> <li>• Monitoring and evaluation: The process of monitoring and manipulation is to be done by DDMA.</li> </ul>
<p><b>Utilities</b></p> <ul style="list-style-type: none"> <li>• <b>Water Supply</b></li> <li>• <b>Electricity</b></li> <li>• <b>Communication</b></li> </ul>	<p>Multi hazard resistant construction to be followed.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Water pipelines, communication equipment used can be of such material which can resist impact of certain hazards Risk sensitive development will be ensured</li> <li>• Recommendations from PDNA report to be considered.</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed damages and needs assessment:</li> </ul> <p>Multi sectoral / multidisciplinary teams are to be made which can do a detailed damage and need assessment of the entire area.</p> <ul style="list-style-type: none"> <li>• Develop a detailed recovery plan through multi departmental participation:</li> </ul> <p>Specific recovery plan through consultative process of different line department are to be made.</p> <ul style="list-style-type: none"> <li>• Arrange for funds from Central government, state government and multi- lateral.</li> </ul>

		<ul style="list-style-type: none"> <li>• Multi sectoral Project Management Unit to be made.</li> <li>• Monitoring and evaluation: The process of monitoring and manipulation is to be done by DDMA.</li> </ul>
<b>Housing</b>	<ul style="list-style-type: none"> <li>• Multi hazard resistant construction to be followed.</li> <li>• Risk sensitive development will be ensured</li> <li>• Owner driven approach will be preferred. For example: o National and State schemes like Pradhan Mantri Awas Yojna (rural / urban) and Mukhya Mantri Awas Yojna can be included in construction of the individual houses.</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed damages and needs assessment: Multi sectoral / multidisciplinary teams are to be made which can do a detailed damage and need assessment of the entire area.</li> <li>• Develop a detailed recovery plan through multi departmental participation: Specific recovery plan through consultative process of different line department are to be made.</li> <li>• Arrange for funds from Central government, state government and multi- lateral</li> <li>• Multi sectoral Project Management Unit to be made.</li> <li>• Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</li> </ul>
<b>Economic restoration</b>  • <b>Agriculture</b>	<p>Multi sectoral assessment</p> <ul style="list-style-type: none"> <li>• Assess direct and indirect losses.</li> <li>• Develop sectoral strategies the sectors that affected the most poor.</li> <li>• the sectors which are most critical for district's economy</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed damages and needs assessment: Multi sectoral / multidisciplinary teams are to be made which can do a detailed damage and need assessment of the entire area.</li> <li>• Develop a detailed recovery plan through multi departmental</li> </ul>

	<ul style="list-style-type: none"> <li>• Risk sensitive development will be ensured</li> <li>• Owner driven approach will be preferred</li> <li>• Provision of single window insurance claim system</li> <li>• Promote insurance facility for all sectors through government and private institutions</li> </ul>	<p>participation: Specific recovery plan through consultative process of different line department are to be made.</p> <ul style="list-style-type: none"> <li>• Arrange for funds from Central government, state government and multi- lateral</li> <li>• Multi sectoral Project Management Unit to be made.</li> <li>• Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</li> </ul>
<p><b>Livelihood restoration</b></p>		<ul style="list-style-type: none"> <li>• Detailed damages and needs assessment: Multi sectoral / multidisciplinary teams are to be made which can do a detailed damage and need assessment of the entire area.</li> <li>• Develop a detailed recovery plan through multi departmental participation: Specific recovery plan through consultative process of different line department are to be made.</li> <li>• Arrange for funds from Central government, state government and multi- lateral</li> <li>• Multi sectoral Project Management Unit to be made.</li> <li>• Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</li> </ul>

<b>Psychosocial restoration</b>	<ul style="list-style-type: none"> <li>• Provisions like trainings from institute like NIMHANS, Mental hospitals and other specialized institutes</li> <li>• Spiritual leaders can help the community to cope up from the trauma</li> </ul>	Arrange for funds from Central government, state government, multilateral.
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**Table 15: Sectors specific approach and processes for Reconstruction, Rehabilitation and Recovery**

## 8.2 Relief and Recovery coordination to be done by DDMA

The rehabilitation period extends over weeks and months after the disaster. The focus is to enable the area to start functioning again. This involves debris removal, restoration of public services and provision of temporary housing. Reconstruction is a much longer-term activity. This phase involves permanent rebuilding, improved infrastructure and better disaster planning. Both rehabilitation and reconstruction phases demand good management. Diversion of national and international aid prudently, prioritization of activities, proper coordination and monitoring as well as prevention of corruption and abuse of scarce funds become priorities.

After a detailed damage and loss assessment, the restoration, reconstruction and recovery programme may be outlined and implemented as per the requirements.

## 8.3 Restoration, Reconstruction and Recovery Programme

- Communication agencies should start setting up and restoring the telecommunication services by way of towers and cables etc. Work should be done with prioritizing the services for government departments and the agencies providing emergency support. Schools and Education sector should also be connected with telecom services.
- Water Supply agency, primarily Municipality should restore water supply pipes. Care has to be taken to ensure no contamination.
- Power Supply agencies would set up cables and power. Restoration of power supply should be done. The department may be required to take help from other agencies.

- Trauma Counseling agencies and volunteer organizations, NGOs have an active role to play in getting the people out of the shocked state. Medical services would also be required on a long term for certain serious cases of injury.
- Transport services should resume as soon as road and debris clearance has been done effectively. Routes may be required to be changed in case the roads have been damaged.
- The most important agency involved in disaster recovery is the Relief- (food and shelter) agency. Once damage assessment has been done, rehabilitation would begin. Food supply may be required for a few days after the disaster.

## CHAPTER - 9

### BUDGET AND FINANCIAL RESOURCES

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The Budget and Financial Resources chapter will focus on the available financial resources, provisions and allocations made at the district level in preparing and executing the district disaster management plan. As mandated under Section 48 of DM Act 2005, District Disaster Response Fund and District Disaster Mitigation to be established and maintained by the District Authority to ensure the smooth funding at district level with reference to the disaster management and risk reduction.

#### 9.1 State Disaster Response Fund

Basically covers the disaster response, relief, and rehabilitation part. The State Disaster Response Fund (SDRF) and Chief Minister's Relief Funds are also available to meet any emergency requirement, at the district level.

#### 9.2 State Disaster Mitigation Fund

State Disaster Mitigation Fund will mainly cover the disaster mitigation and preparedness activities. The necessary financial requirements would be made a part of their annual budgetary allocations and ongoing development programmes capturing the disaster mitigation and preparedness measures. For Example MGNREGA, Sarva Shiksha Abhiyaan (SSA), Smart Cities, Pradhan Mantri Awaas Yojana, National Health Mission, MP and MLA LAD Schemes, etc have to be aligned and provisioned for disaster mitigation and preparedness activities in the district. PM Relief Fund is also active in the Jamui.

#### 9.3 Central Govt. Plan & Non Plan Schemes

Schemes and Implementing Department	Schemes and Implementing Department
Krishi Road Map - Agriculture Dept.	MNREGA –Rural Dept. and Environment & Forest
Saat Nishchay - Rural Development Dept., Panchayat Raj and Water & Sanitation	PM Fasal Bima Yojana- Agriculture Dept.
Bihar Rajya Fasal Sahayata Yojana- Agriculture Dept.	Shataabdi Ann Kalash Yojana-2011- DDMA

Bihar Sankatgrsht Kisan Sahayata Yojana- BSDMA	Deendayal Antyoday Yojana- Jeevika- Rural Development ( Rural Livelihood Mission)
Aanganwadi- Welfare Dept- ICDS	Lohiya Swachh Bihar Yojana – RuralDevelopment
Rashtriya Gramin Payjal Karyakram - Water and Sanitation	Rashtriya Gramin Swashthya Mission- District Health Committee
Mukhyamantri School Surakhsha Programme-Education Dept.	Sarva Shiksha Abhiyan- Education Dept.
PM Irrigation Yojana- Water Resources Dept.	Aasha Karyakarta- District Health Commiittee
Mid- Day Meal- District Administration	Sansad Adarsh Gram Yojana – RuralDevelopment Dept.
Sarak Surakhsha Nidhi- Transport Department	

**Table 16: Schemes active in Jamui District**

#### **9.4 Disaster Risk Insurance**

It is one of the options being used very commonly, by the concerned agencies to address the financial component for the disaster management purpose.

Insurance brings quality consciousness in the infrastructure and a culture of safety by insisting to follow building codes, norms, guidelines, and quality materials in construction. It would enforce safety standards by bringing accountability. Hazardous area should be announced, notified and publicly displayed so that people would be motivated not to settle in those areas and insurance be mandatory in insurance prone areas. Premiums can be changed on the basis of risk proneness.

#### **9.5 Other Financing Options**

For restoration of infrastructure/livelihoods, the Opportunities of CSR investments also to be explored by DDMA for increasing district resilience. Apart from it, the Central Government Plan and Non Plan Schemes also to be explored at the District level for Disaster Risk Reduction (DRR), Disaster Management initiatives and allied work.

## CHAPTER - 10

### MONITORING, EVALUATION AND UPDATION OF DDMP

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#### 10.1 Monitoring/ checking through Drill

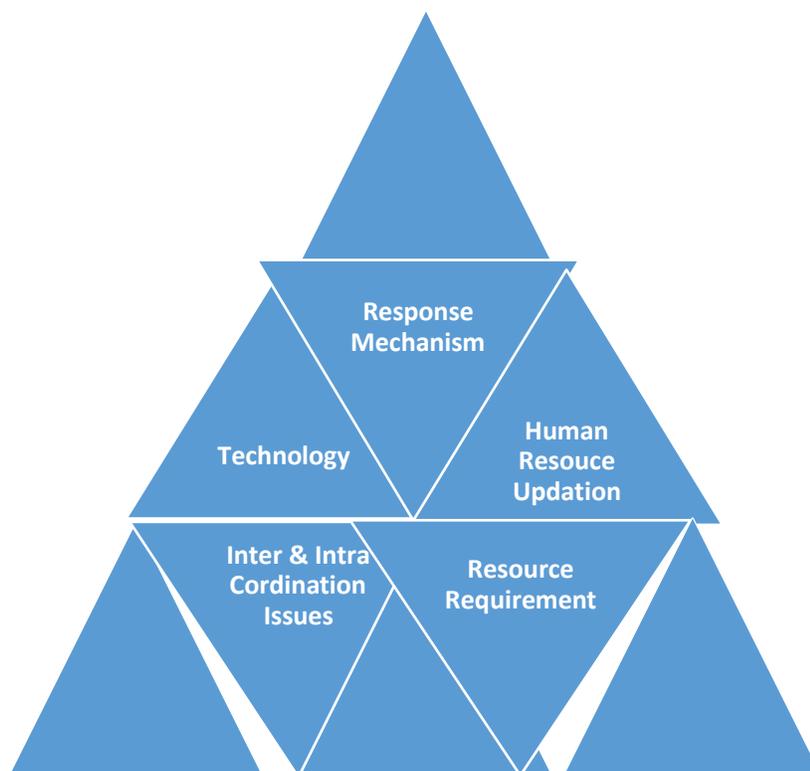
For monitoring and checking the actual preparedness and execution of Jamui DDMP on the ground, periodic simulation exercises, mock drills will be conducted. The regular monitoring and drills help in identification of gaps (if any), and checking, whether all the personnel involved in execution of DDMP are trained and updated on the latest skills necessary in line with the plan (DDMP) at the incident/ disaster site.

#### 10.2 Plan Evaluation

The purpose of evaluation of DDMP is to determine the adequacy of resources, co-ordination between various agencies, community participation, partnership with NGOs and other entities, Post-disaster evaluation mechanism, Periodic uploading of plans at India Disaster. Knowledge Network (IDKN) and resources on India Disaster Resource Network (IDRN). The efficacy of the plan will be checked in a comprehensive manner, especially after any major disaster.

#### 10.3 Plan Update

The District Plan shall be reviewed and updated annually, as per the **DM Act 2005, Section 31(4)**. Apart from it, the plan will be updated when shortcomings are observed in Organizational structures; Technological changes, Response mechanism following reports on periodic exercises. The District Disaster Management Plan is an ongoing document and the District Magistrate/DC along with all line departments, nodal officials will update it every year taking into consideration-



**Figure 6: Focus Point in updating the plan**

An annual review meeting for DDMP update will be organized by DM Jamui. All the concerned departments and agencies would participate and give recommendations on specific issues. All concerned stakeholders, including Army, NDRF, SDRF & other District level agencies, NGOs and communality level representatives will also be involved, apart from the nodal officers.

The updated DDMP will be kept at the District Emergency Operations Center (DEOC) as well. Copy of the same will also be shared with State Govt. The whole DDMP with contact details will also be made available on Jamui District website. It will be called as **the District E-Plan**.