

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

(September 2022)

Prepared by

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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 शेखपुरा 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 शेखपुरा में प्राकृतिक एवं मानव निर्मित आपदाओं का प्रभाव निरन्तर बना रहता है। जिला में घटित प्रमुख आपदा है: सड़क दुर्घटना, आकाशीय बिजली, भूकंप, सूखा, जल जमाव, लू, शीत लहर और अग्निकांड। 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। इस योजना में जो भी विवरण व तथ्य दर्ज किए गए हैं, उन सभी का संग्रह विभिन्न श्रोतों से किया 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।

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।

सावन कुमार
जिला पदाधिकारी,
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जिला शेखपुरा में प्राकृतिक एवं मानव निर्मित आपदा से होने वाली क्षति न्यूनीकरण एवं बेहतर आपदा प्रबंधन हेतु जिला आपदा प्रबंधन योजना का निर्माण किया गया है। इस योजना में जिला प्रशासन एवं समुदाय की सहभागिता से आपदा प्रबंधन को दृष्टिगत रखते हुए जिला स्तरीय विभागों तथा अन्य हितभागियों द्वारा गतिविधियाँ बनायी गई हैं। जिला आपदा प्रबंधन योजना जिला को आपदा प्रबंधन में मजबूती प्रदान करेगा।

आशा है, कि यह योजना 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।

अरुण कुमार झा
अपर समाहर्ता,
शेखपुरा

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CHAPTER – 1

INTRODUCTION

1.1 Background

Bihar is a multi-hazard prone State exposed to a range of natural disasters including earthquakes, floods, cyclonic storms/hail storms, drought, lightning, fire, extreme cold, heatwaves, etc. Sheikhpura District is mainly prone to drought but also vulnerable to waterlogging and earthquakes, etc. This District DM Plan of Sheikhpura 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 the District Disaster Management Authority (DDMA) to adopt a continuous & 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 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 & key stakeholders and the target are reduction in lives lost, affected people due to disasters and decrease in economic loss. The DDMP of Sheikhpura seeks to address the targets and commitments of Bihar DRR Roadmap across its different chapters.

1.2 Objectives

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

- i. To identify the areas vulnerable to major types of the hazards in the district.
- ii. To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its effects.
- iii. To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- iv. To 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. To set up an Emergency Operations Centre at the District level to function effectively in search, rescue, response.

- viii. To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- ix. To 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. To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.
- xi. To adopt disaster resilient construction mechanism in the district by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development.
- xii. To make the use of media in disaster management.
- xiii. Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at district level and local authority.

1.3 Scope

It is well known that the Central and State Governments provide financial and logistic support in case of a serious disaster and 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 linkage with the community as also responding to a disaster in an efficient and prompt manner primarily rests with the District Administration/ District Disaster Management Authority (DDMA). The DM planning has therefore to be decentralized so that the district has the authority, responsibility, accountability as also capacity to take adequate prevention and mitigation measures and respond to a disaster in prompt and effective manner.

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

1.4 Plan Development Methodology

The methodology adopted for Development of District Disaster Management Plan of Sheikhpura starts with collection of available secondary data. Based on that Inception Report was prepared. The comprehensive desktop review was carried out. Further, BSDMA workshop on preparing DDMP also helped immensely for preparing Multi Hazard District Disaster Management Plan. The detailed questionnaires were prepared for collection of primary data (based on field visits) through interaction with concerned stakeholders. The interactions held with all key Departments,

nodal agencies, officials and local communities. Based on the primary & secondary data, and resource mapping, the detailed Hazard Vulnerability Capacity Risk Assessment (HVCRA) was carried out, taking into account the ongoing development programs and mainstreaming aspects. 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. **Activity Flowchart with Major Steps in Developing DDMP is given in Annexure 1.**

1.5 DDMP Implementation Strategy

The strategy adopted to develop and implement the DDMP starts 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 & strategy development, has been inclusive, equitable, safe & sustainable.

Synergy and linkages have been maintained with relevant provisions, while preparing response and risk reduction plan. Further Emergency Support Functions (ESFs), Emergency Operations Centers (EOCs), mainstreaming of development programmes, prevention, and mitigation measures & cross cutting issues have been covered extensively.

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

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 concerned departments.

CHAPTER 2

DISTRICT PROFILE

Sheikhpura district was carved out of District Munger about 22 years back. Sheikhpura has six blocks, namely: Sheikhpura, Barbigha, Sheikhpursarai, Chevada, Ariyari and GhatKusumbha. Ghatkusukbha is located in a low lying area and is highly prone to water logging. Apart from it, earthquake, lightning, drowning, road accident are other allied risks. 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

The district of Sheikhpura lies almost on the middle part of the South Bihar plain. It is adorned with natural beauty, replete with rivers, trees and hillocks.

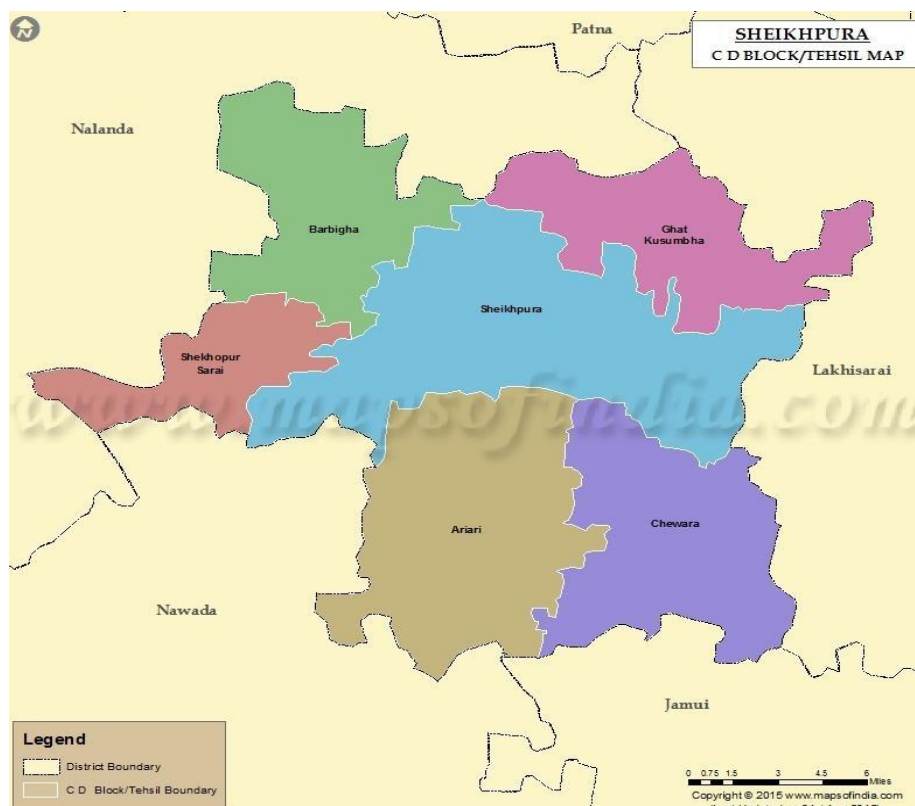


Figure 1: Location

The district is the western portion of Munger division. The district is bound on north side by the district of Nalanda, on south by Nawada and Jamui districts, on east by Lakhisarai district and on west by Nalanda and Nawada districts.

The district spanning about 77,705 hectares is situated between North latitudes 24°45' and 25° and East longitude 85°45' and 86°45'. Sheikhpura is the smallest of 38 districts in terms of population and 36th in terms of area in the state of Bihar. The density of population in the district is 924 per sq km in 2011 as against 763 per sq km in 2001.

The **main Rivers** of the district are Harohar, Korihari, Shome, Sakri & Tanti. The Harohar River flows in the north of the district. The Korihari and the Shome Rivers flow in the eastern- south portion of the district. The Sakri and Tanti Rivers beautify its south-eastern part. Harohar River divides Ghat Kusumbha Block in nearly two-equal parts as it flows through the middle of Block.

Topographically district has two types of region – the rocky highland formed by hilly portion in Centre, surrounded by fertile land in North, South, East and West. The land is sloping towards North Eastern side. Because of the low lying area in some parts of the North Eastern side, the water gets accumulated during rainy season leading to water-logged conditions. This area is geographically known as Tal area. The average annual rainfall in the district is 1207 mm.

2.2 Climate Weather Profile

The district has hot summers & moderate winters. Summers start from middle of March and last till July. The monsoon usually breaks in second half of June and lasts till September, as may be seen below in the month wise rainfall chart of Sheikhpura District. The annual rainfall in the Sheikhpura district is around 1207 mm. The maximum precipitation is observed in the month of July (Average 16 days/month), followed by August (12 days/month) and September (10 days/ month).

2.3 Cultural, Historical and Social Perspective

District Sheikhpura was mainly carved out of Munger district on the 31st July, 1994. It was formed by taking away Sheikhpura sub-division of old Munger district during 1991 Census, adding 24 villages of Lakhisarai district (old Lakhisarai sub-division of old Munger district) and 2 villages of Nalanda district.

Sheikhpura has good institutional structure for education and health. As for education, there are 225 Primary Schools, 132 Middle Schools, 1 Basic School, 30 High Schools, 2 unrecognized Madarsa/ Maqtab and 1 Jawahar Navodaya Vidyalaya. As for health infrastructure, there is one Sub divisional Hospital, one Referral Hospital, 3 Primary Health Centers, 17 Additional Primary Health Centers

and 74 Health Sub- Centers.

Fairs and festivals are held regularly in the district. The district has been famous for cultural activities, fairs and melas held at different places throughout the year. Following are the main historical places in Sheikhpura District- Girihinda hill, Pind Sharif, Matokhardah.

2.4 Demographic Profile

The Demographic data as per 2011 Census, is tabulated below:

Table 1: Demographic profile of Sheikhpura:

Description	2011
Actual Population	636,342
Male	329,743
Female	306,599
Population Growth	21.09%
Area Sq. Km	689
Density/km ²	924
Proportion to Bihar Population	0.61%
zSex Ratio (Per 1000)	930
Child Sex Ratio (0-6 Age)	940
Total Child Population (0-6 Age)	121,647
Male Population (0-6 Age)	62,710
Female Population (0-6 Age)	58,937
Literates	328,676
Male Literates	196,431
Female Literates	132,245
Child Proportion (0-6 Age)	19.12%
Boys Proportion (0-6 Age)	19.02%
Girls Proportion (0-6 Age)	19.22%

2.5 Administrative Structure

The district comprises of one sub-division, 6 Revenue Circles, 6 Blocks, 2 Nagar Panchayats, 2 towns, 54 Gram Panchayats and 310 villages of which 258 are inhabited and 52 are uninhabited. Topographically district has two types of region – the rocky highland formed by hilly portion in Centre, surrounded by fertile land in North, South, East and West. The land is sloping towards North Eastern side. Because of the low lying area in some parts of the North Eastern side, the water gets accumulated during rainy season leading to water-logged conditions. This area is geographically known as Tal area. There are 9 police stations and 2 police outposts in the district. It

has two MLAs' constituencies (Sheikhpura and Barbigha). There are 9 Sub Post Offices and 84 Branch Post offices in district.

The block wise details of Sheikhpura district have been given in the table 2 below, highlighting the population, literacy and other allied attributes such male, female sex ratio, children age etc.

Table 2: Block wise details of District Sheikhpura, Bihar

S. N.	Block Name	Population			Literacy in %			Sex Ratio	Children Age (0 - 6)		
		Male	Female	Total	Male	Female	Total		Male	Female	Total
1	Ariari	58,009	54,061	1,12,070	68.45	46.02	57.66	932	11,176	10,663	21,839
2	Barbigha	70,611	65,556	1,36,167	77.94	58.06	68.72	928	12,658	11,969	24,627
3	Chewara	37,362	35,905	73,267	71.61	50.43	61.22	961	7,548	7,229	14,777
4	Ghat Kusumbha	25,068	23,278	48,346	72.85	47.40	60.60	929	5,460	5,084	10,544
5	Sheikhopur Sarai	35,189	32,292	67,481	78.04	61.34	70.05	918	6,163	5,688	11,851
6	Sheikhpura	1,03,504	95,507	1,99,011	72.70	53.60	63.54	923	19,705	18,304	38,009
District Sheikhpura Total		3,29,743	3,06,599	6,36,342	73.56	53.40	63.86	930	62,710	58,937	1,21,647

Source: Census 2011

2.6 Natural Resources

As per the District Census Handbook, Total forest area of Sheikhpura District is 83.5 hectares. Primarily the district is devoid of forest. As regards the flora and fauna, the trees like Peepal (Bo-tree), neem (Margosa Indica), Jack-Fruit, Palas (flame of the forest), Bel (Wood Apple), Tamarind, Black-Berry, Wild Berry Jujube, Gular, Pakar, Mango, etc., are frequently available.

Fishes are quite abundant in Sheikhpura. The principal species include the well-known Rohu, Mirgal, Katla, etc. The main source of water has been rainfall. There are as many as 1264 villages accounting for 100 percent of the total inhabited villages in the Sheikhpura district where improved

drinking water facility is available. As regards the Mines and Minerals, there are stone quarries under Sheikhpura C.D. Block which is mainly used as road, bridge and building material.

2.7 Main Occupation/Economic Profile

People are mostly dependent on agriculture. Besides, mining of smaller hillocks with crushers is one of the main activities for employment. In 2006, Ministry of Panchayat Raj named Sheikhpura as one of the country's 250 poverty-ridden districts in India. There are no major industries in district. Small establishments like shopkeepers employ people on marginal wages. The district has alluvial soil composed of sand, silt and clay in most parts of district. The soil is fertile and suitable for agriculture. The alkaline and saline deposits are rarely found. Of the total 77,705 hectare, 49,766 hectare (64%) is utilized for agriculture. There are no forests in district. The main crops grown in the district are rice, wheat and gram. Among fruits and vegetables, major crops are mango, guava, litchi, onion, potatoes and small quantities of other vegetables. The majority of people are engaged in agriculture, landless labor, petty shopkeepers or workers, self-employed like rickshaw pullers etc. Table 3 shows the category of working population.

Table 3: Working population

Working population - District Sheikhpura (Bihar)				
S. N.	Current Livelihood	Male	Female	Total
1	Main Workers	1,09,905	38,097	1,48,002
2	Cultivators	34,148	7,938	42,086
3	Agriculture Labourer	44,237	21,212	65,449
4	Household Industries	3,576	2,045	5,621
5	Other Workers	27,944	6,902	34,846
6	Marginal Workers	41,664	34,989	76,653
7	Non-Working	1,78,174	2,33,513	4,11,687
Source: District Administration				

CHAPTER 3

HAZARD, RISK, VULNERABILITY & CAPACITY ASSESSMENT (HRVCA)

3.1 HRVCA

Hazard, Risk, Vulnerability, and Capacity & Risk Assessment (HRVCA) is the most important part of the plan as the entire planning process is based on its outcome. As the quality of action planning is critically dependent on the accuracy in identifying the frequency, magnitude, and projected impact of hazard and associated vulnerabilities, the plan places a special emphasis on proper HRVCA for the plan.

The necessary outcomes of the HRVC Assessment are 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 damaged by such disasters due to their susceptibility characteristics. HRVC Assessment also includes resource inventory, capacity analysis, preparedness measures in terms of the 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

Hazards and risks are intimately interlinked and are mediated by existing vulnerabilities and capacities. A hazard risk turns into a disaster once vulnerabilities are more than the capacity to be adversely impacted by a disaster. The multi-dimensional risk of hazards is invariably there in Sheikhpura, because of presence of multiple vulnerabilities, which is discussed in subsequent paragraphs.

This plan seeks to ensure that the hazards do not turn into disasters due to inadequate prevention, mitigation and preparedness measures. The risk of hazards getting converted into disasters has to be mitigated by reducing vulnerability; mitigation measures to reduce the level of hazards; and simultaneously enhancing capacities including the capacity of the community through awareness generation and training, besides improving their means of livelihood and skill development,

particularly of women.

Sheikhpura district is prone to drought. The district also falls in the earthquake seismic zone IV, which is a high-risk zone however no casualty has been reported due to earthquakes in recent years. Lightning is one of the disasters affecting the district but it is not very serious. Although flood is not perceived as a major threat, waterlogging occurs in Ghatkusumbha due to low-lying areas. The other applicable hazards in districts are drowning, road accidents, lightning, heat waves, cold wave, epidemics, and fire incidents. Below is the seasonal calendar of Sheikhpura.

Table 4: Seasonality and Vulnerability Calendar of Sheikhpura

Hazards Vs Months	January	February	March	April	May	June	July	August	September	October	November	December	Intensity
Lightning				High	High	High	High	High	High				High
Water Logging							Medium	Medium	Medium				Medium
Earth Quake	High	High	High	High	High	High	High	High	High	High	High	High	High
Drought					High	High	High						High
Road Accidents	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Heat Wave				Medium	Medium	Medium							Medium
Fire	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Cold Wave	Medium											Medium	Medium

Note: Epidemic/Pandemic (Covid-19) is not a recurrent hazard in the district. Hence its intensity is low.

 **High**  **Medium**  **Low**

3.3 The main hazards of Sheikhpura District-

3.3.1 Earthquake

Sheikhpura District falls in Seismic Zone IV, which has a high potential of earthquake risk. In this regard, it is also important to know about previous Following are earthquakes incidents noted in the region. A high-intensity quake measuring 7.5 on the Richter scale, with an epicenter in Nepal, rocked many parts of East and North India on 25th April 2015. The tremors, which were felt in Bihar, Uttar Pradesh, Rajasthan, Haryana, and Punjab, lasted for a minute, triggering panic and forcing people to rush out of their houses and offices. The 1934 earthquake with epicenter at Nepal-India border and intensity of 8.3 on Richter scale, had affected several districts including Munger, of which Sheikhpura was a part.

These incidents are a grim 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 fact that it may occur any time in this or next year or next decade. Since no early warning is possible in the case of earthquake as in the case of other disasters, Sheikhpura district administration has to be always prepared to deal with the severity of the impact of earthquakes, 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
4th June 1764	India- Nepal Boundary	6.0	Not Available (NA)	NA
23rd August 1833	Nepal Boundary	7.7	NA	NA
23rd May 1866	Nepal Boundary	7.0	NA	NA
23rd May 1866	Jharkhand- Bihar Boundary	5.5	NA	NA
30th Sept 1868	Hazaribagh	5.7	NA	NA
7th Oct 1920	Bihar - Uttar Pradesh Boundary	5.5	NA	NA

15 th Jan 1934	India- Nepal Boundary	8.4	10500	Patna, Gaya, Shahabad, Saran. Muzaffarpur, Darbhanga, Bhagalpur
11 th Jan 1962	India- Nepal Boundary	6.0		Munger & Purnea
21 st Aug 1988	India- Nepal Boundary	6.7	1000	Madhubani and Darbhanga
18 th Sept 2011	Sikkim- Nepal Boundary	5.7		NA
25 th , 26 th , April 2015	India- Nepal Boundary	6.6	60	Patna and the area adjacent to Nepal Border

Source: Bihar State Disaster Management Plan-2014

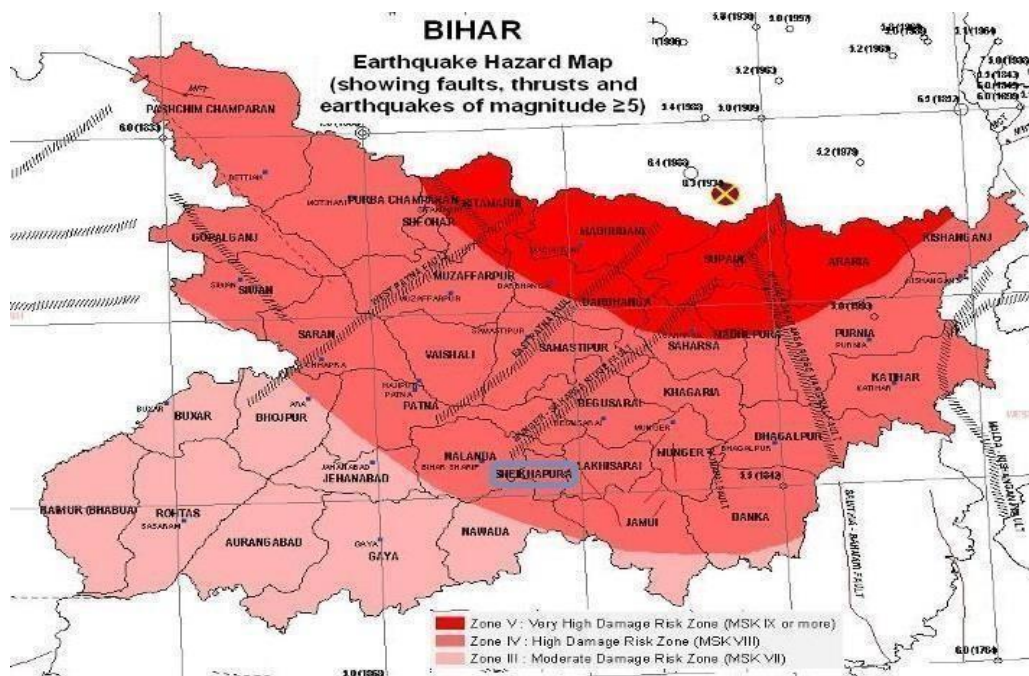


Figure 2: Earthquake Hazard Map of Bihar

3.3.2 Drought

The drought situation is quite common in Sheikhpura District. Since 2001, drought has occurred in Sheikhpura during 2001, 2004, 2009, 2010, 2013, 2015, 2017, and 2019. While the precise figures of economic losses during these years were not available, the farming community did suffer losses and some people migrated temporarily from their respective villages in search of 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.

The crop failure, taken together with socio-economic vulnerabilities and overall poverty in the district has a multiplier impact on the community. The prices of commodities rise sharply during drought years. One of the reasons for this slow onset disaster not getting adequate attention could be the lack of reported death incidents due to drought conditions in district during these years. However, there is enough evidence to suggest that overall economic losses due to droughts in the district have been quite substantial. In some cases, the state government has extended subsidy to the affected households to cover the economic losses due to droughts, on the basis of damage assessment carried out for the purpose.

3.3.3 Water Logging

At present, there are 05 Panchayats and 24 Villages in the block Ghatkusumbha which is located on the banks of Harohar River which lies in the low-lying region. The water of the Punpun, Ratoia, Jirain and Mona rivers joins the Harohar river during the rainy season leading to the waterlogging in the Ghatkusumbha block. The major waterlogged region is divided into three categories:-

- a) Northern areas: Tola Gadbadia, Sujawalpur, Mudbaria, Akarpur and Ghatkusumbha (Headquarter).
- b) Middle areas: Tola Vrindavan of Dihkusumbha Panchayat.
- c) Panapur Panchayat: Five villages of Panapur Panchayat- Panapur, Aalapur, Harinamchak, Mahammadpur and Jitwarpur.

The Sheikhpura District flood hazard map, figure 3 (Source NRSC) enclosed below depicts the northeast portion of the district as highly waterlogged/flood-prone which lies in low-lying area of Ghat Kusumbha and the surroundings. The rest of the blocks in the district is comparatively quite safe from a flood hazard point of view.

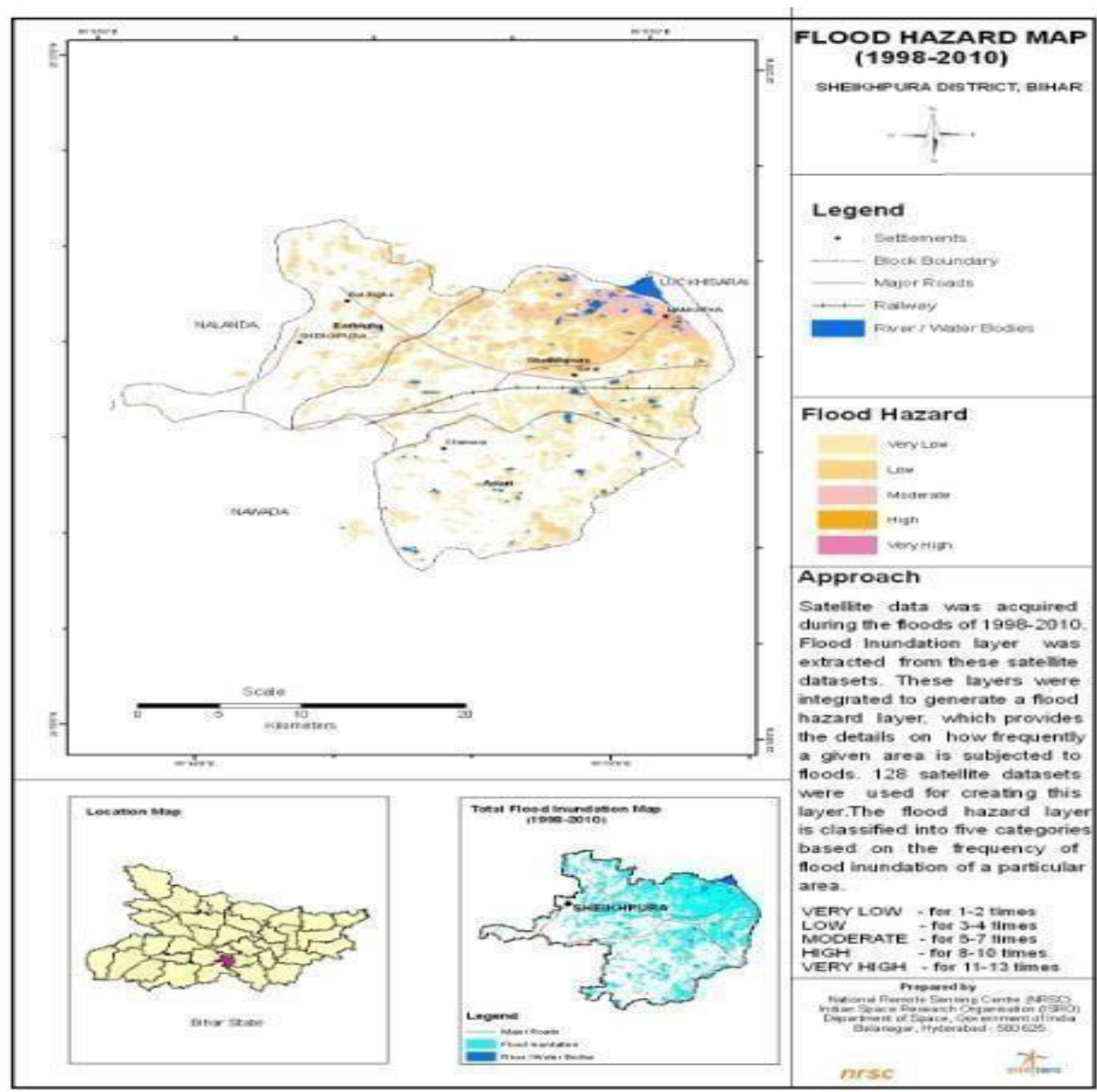


Figure 3: Flood Inundation Map of Sheikhpura

3.3.4 Road Accident

There have been incidences of road accidents in the district including a few fatal cases. The 4 identified black spots in Sheikhpura are: Grihinda chowk, Dallu mod, College mod, and Hatiya mod and the main reasons are the proximity of main roads to residential areas, lack of awareness about road regulations among drivers. Police station nearby black spots of Grihinda chowk, dallu mod and college mod is Sheikhpura police station, and barbigha police station is nearby to hatiya mod spot. Hospital near Grihinda chowk and college mod spot is referral (sub-divisional) Sheikhpura, and dallu mod is sadar hospital and hatiya mod is PHC Barbigha. (**Annexure 13**)

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

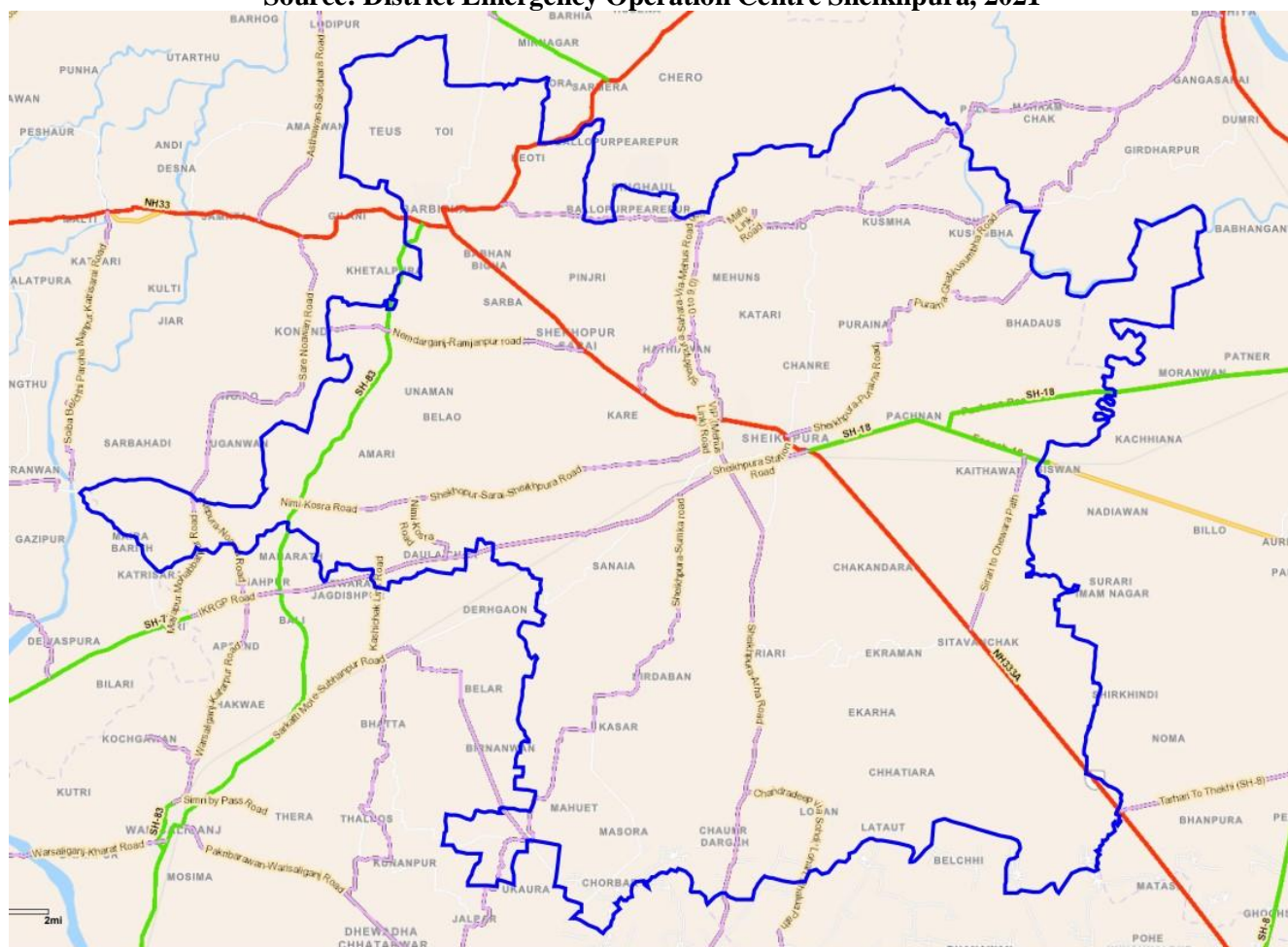
and mitigation have been given in chapter 5)

In the past 4 years, 44 people lost their lives in a road accident in Sheikhpura. Table 6 shows the past records of deaths due to road accidents.

Table 6: Past records of deaths due to Road Accidents

S.N.	Block	Year/ No. of deaths due to Road Accidents				Total Deaths
		2018	2019	2020	2021	
1	Ariyari	2	7	2	0	11
2	Barbigha	1	3	1	1	06
3	Chewara	2	2	3	0	07
4	Ghatkusumbha	2	1	1	0	04
5	Sheikhpura	4	9	1	0	14
6	Sheikhopurasarai	1	1	0	0	02
Total		12	23	8	1	44

Source: District Emergency Operation Centre Sheikhpura, 2021



Source: DEOC, Sheikhpura

3.3.5 Lightning

There are reported cases of death due to lightning strikes every year in different blocks of the district. In recent three years, a total of 15 deaths are reported in blocks-Chewara, Sheikhpura, and Ariyari.

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)

The table 7 below shows the lightning effected blocks and a number of deaths in the past 3 years.

Table 7: Past records of deaths due to Lightning

S.N.	Block	Year/ No. of deaths due to Lightning			Total Deaths
		2019	2020	2021	
1	Ariyari	2	0	0	02
2	Barbigaha	0	0	0	0
3	Chewara	1	4	0	05
4	Ghatkusumbha	0	0	1	01
5	Sheikhpura	3	2	1	06
6	Sheikhopurasarai	0	1	0	01
Total		6	7	2	15

Source: District Emergency Operation Centre Sheikhpura,2021

3.3.6 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. A total of 34 death cases is reported in the past 4 years due to drowning. Table 8 below shows the past records of drowning (Ponds/ Lakes/ Rivers) cases in Sheikhpura.

Table 8: Past records of deaths due to Drowning

S.N.	Block	Year/ No. of deaths due to Drowning				Total Deaths
		2018	2019	2020	2021	
1	Ariyari	1	1	1	0	03

2	Barbiga	0	4	1	1	06
3	Chewara	0	1	0	0	01
4	Ghatkusumbha	0	2	1	1	04
5	Sheikhpura	0	7	2	0	09
6	Sheikhopurasarai	0	1	3	0	04
Total		01	16	15	2	34

Source: District Emergency Operation Centre Sheikhpura, 2021

3.3.7 Other Disasters including Epidemics (COVID-19)

As for other disasters, there has been no major fire incident in Sheikhpura during the last decade. However, occurrences of the isolated **outbreaks of fire** in the region do take place once in a while. In the years 2020 and 2021 fire took place in the Ghatkusumbha block leading to the death of 2 people. The explosion of Boiler took place in Ariyari block in 2018 causing the death of 2 people. Financial assistance has been given to the victims in such cases of fire casualties/ burn injuries in the Sheikhpura District. People are not aware with the functionality of fire extinguisher even some of the officials, so trainings can be given to the officials and to the general public.

The district also faces the **heatwave** especially in the Month of April, May, and June. 1 death was recorded in Sheikhpura Block due to a heatwave in 2019. Apart from it, during **cold waves** mainly in end-December and January, the district records show the wood burnt daily and the assistance provided by the district administration. 02 death was recorded in the year 2019 and 2021 due to the collapse of the wall during **heavy wind** in the Ariyari block. Death due to **Snake Bite** is now listed as disaster for which the ex-gratia will be given to the deceased man's family.

The incidences of outbreaks of diseases/ epidemics are also high mainly due to a lack of awareness about sanitation & hygiene, which are being addressed now. Exposure to germs and toxic substances may cause Epidemics: viral, bacterial, parasitic, fungal infections affecting lakhs of people and paralyzing the lives and livelihoods of the people. India is currently facing the Novel Corona Virus disease (**COVID-19**) pandemic which was initially noticed in a seafood market in Wuhan city in Hubei Province of China in mid-December 2019, has now spread to 214 countries including India and the Bihar State. In Bihar, there are 726045 Covid cases so far as per the Bihar Health Department. Districts with a migrant population are impacted the most by the spread of Covid-19. In Sheikhpura 7693 cases are reported, out of which, the death of 122 Covid patients are reported (Source- District Emergency Operation Centre).

3.4 Vulnerability Assessment

Based on the HRVCA carried out in Sheikhpura district, it has been observed that the district is vulnerable to earthquake, flood, waterlogging, drought, lightning, fire incidents, the outbreak of diseases, road accidents, and drowning. The overall risk varies from block to block and even village to village. Two blocks, Ghatkusumbha and Sheikhopursarai suffer regular floods. Further, existing physical, economic, social, structural/ non-structural, and environmental vulnerabilities enhance the disaster risks of the population.

In urban areas, the main disasters which may occur are earthquake, flood, water logging, road accidents and instances of lightning. The overall risk varies from block to block and even village to village. The risk of these disasters works out as below for the district as a whole.

Table 9: Hazard and Vulnerability Profile of District Sheikhpura

Hazard	Vulnerability					Remarks
	VH	H	M	L	N	
Earthquake		H				The district falls in Seismic Zone IV and therefore the risk of earthquake is high. The district faced an earthquake in 2015, but it did not result in any loss of life or property except in Barbigha block, where there was marginal damage. This has given a feeling of complacency to the community which is risky in case a major earthquake occurs.
Flood			M			Except few areas, the district is not vulnerable to floods including the city areas. However, Ghat Kusumbha block, particularly the Taal area is vulnerable to floods. Few cases of drowning have occurred in Taal when young children have tried to cross it when it is flooded. Sheikhopur block is also vulnerable as it is in low lying area. Korihari river flows about 4 km from Ariyari block and water sometimes overflows over the embankment since the block is also in low lying area. The rest of the blocks have not faced any flood situation during the last 10 years.
Water logging			M			Water logging is a common problem in all the blocks and the urban areas primarily due to lack of adequate drainage systems.
Drought		H				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 40 feet to 400 feet, depending on the area. People migrate from villages in search of livelihood. Economic losses keep a fair segment of population, farmers and landless labourers, very poor. Besides, there is invariably shortage of

					drinking water.
Lightning		H			Normally, the probability of lightning is low in all blocks except in block Sheikhpura where it is high. Yet few cases occur in some villages almost every year.
Fire Incidents			M		Outbreak of fire incidents do occur from time to time but generally the risk is considered to be low except in Ghat kusumbha where it was rated by community as medium. 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.
Outbreak of diseases		H			The incidence of outbreak of diseases/ epidemics is high mainly due to lack of awareness about sanitation and hygiene. The problem of open defecation persists in rural areas as well as in slum population of urban areas. Poverty and lack of adequate health care facilities are yet other contributing factors. However, District Administration has now adopted an aggressive strategy of creating awareness. It will take some time before the impact of this strategy is visible. There have been instances of cholera, brain fever etc; and the outbreak of present Novel Coronavirus disease (COVID-19) has been a huge medical emergency challenge for Sheikhpura Health Administration.
Road Accidents			M		There have been incidences of minor road accidents in the district including few fetal cases. The main reasons are proximity of main roads, lack of awareness about road regulations among drivers and drunken driving. It was mentioned that after the imposition of prohibition in the state, the incidence of road accidents has dropped. However, it is too recent to substantiate it through statistical data.

VH: Very High; H: High; M: Medium; L: Low; N: Negligible

Vulnerabilities are of different types, which have a multiplier effect to enhance the total vulnerability such as:

- Physical Vulnerability
- Economic Vulnerability
- Social Vulnerability
- Structural/ Non-structural Vulnerability
- Environmental Vulnerability.

Sheikhpura is comparatively not very vulnerable except for earthquake and drought, to which it is

highly vulnerable. Besides two blocks, Ghat Kusumba and Sheikhopur, also suffer from floods occasionally. Further, 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. Climate change pattern is contributing to environmental vulnerability, which is further accentuated due to lack of sanitation and hygiene, particularly open defecation, which results in outbreak of diseases, more so in the aftermath of floods and water logging. The cumulative impact of these vulnerabilities increases the risk very significantly. The impact of climate change has been particularly observed in Ghat Kusumba, where flood and drought occur in alternate years. This development has taken place during the last 10-15 years due to impact of climate change.

Economic and Social Vulnerability: In Sheikhpura district, drought has a cyclical effect on the poor. Loss of agriculture productivity, loss of livelihoods and migration are the major impacts of drought in the district. Droughts cause large-scale migration of population in search of livelihoods affecting social equilibrium of the families. The social disparities, caste disparities and loss of livelihood affect the resilience making them further poorer and vulnerable.

Environmental Vulnerability: Global warming and climate change are contributing to environmental vulnerability of the district. Inadequate awareness about sanitation and basic hygiene and inadequacy of these services in the district results in outbreaks of diseases, more so in the aftermath of floods and waterlogging. The cumulative impact of these vulnerabilities has been enhancing the risks significantly. The impact of climate change has been particularly observed in Ghatkusumbha, where floods and droughts occur in alternate years. This development has taken place during the last 10-15 years due to the impact of climate change.

Physical Vulnerability: The distribution of houses and buildings that have been captured in the **BMTPC table in Annexure 2** which highlights the existence of the structural vulnerability in Sheikhpura, especially the high percentage of weak mud houses, which indicates the high level of damage risk. The existing and the upcoming *pucca* constructions in urban, semi-urban and rural areas are hardly complying with the revised model building bye-laws which contribute significantly to structural vulnerability of these buildings, particularly in case of an earthquake. Lack of awareness is contributing further towards non-structural vulnerability. It may however be added that houses constructed under IAY are earthquake-resilient since this aspect is being taken care of in IAY designs.

In Sheikhpura, the differently abled persons, children, expectant and nursing mothers, elderly and ill persons are comparatively more vulnerable since they need extra support to handle disasters. The community as a whole is neither adequately trained nor much aware, to take care of their special needs. The 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.

3.5 Capacity Analysis

3.5.1 Capacity Assessment for Rural Areas

A capacity assessment of six villages (one each in six GPs were picked up one in each block) was carried out as a part of micro level HRVCA, as recommended by BSDMA. The data has been summarized in the Table below, which also provides a glimpse of DM capacity of the District:

Table 10: Capacity Assessment of Selected villages in Sheikhpura

Capacity	Block: Barbigaha, GP: Pinjari Village: Dumri	Block: Chewara GP: Siyani Village: Karande	Block: Ghat- kusumbh a GP:Dih- kusumbh a Village: Ghat- kusumbh a	Block: Sheikhp ura GP: Kare Village: Kare	Block:Shekh o-pur Sarai GP: Paachi Village: Paachi	Block: Ariyari GP: Sanaiya Village: Belchhi	Remarks
Distance from Block HQ	9 km	4 km	100 meters	5 km	5 km	4 km	All villages under survey are close to block HQ.
Village population	700	6000	7000	10000	10000	6000	
Schools	HS-1	HS-1, MS-1, Primary-1	HS-1, MS-1, Primary-1	Primary + Middle - 1	Primary-1 (near village)	HS-2, MS-1, Primary-1	
Anganwari	1	2	1	2	2	1	Interacted with ANM and ASHA workers
Primary	1;	1	1	0	2	1	

Health Centre	distance-2 km						
Irrigation and water resource (Sarkari Chapakal)	Information not available	100 (50% not functional)	Not available	50, of which 10 non-functional	50	10	
Connectivity with road/roadways	2 km from block	7 km from block	14 km from district	1 km	5 km from block	4 km from block	
PDS Shop	Yes-1	Yes-1	Yes-1	Yes-2	Yes-1	Yes-1	
Community Center	1	1	1	1	1	2	
Tractor	No	20	7	50	No	7	
JCB	No	No	No	No	No	No	
Market	1- Brebigha (9 KM from village)	1- Chewara (4 km from village)	Nil- nearest market is 14 km from village at Sheikhpura	1- Sheikhpura (4 km from village)	1- Sheikhopur Sarai (6 km from village)	1- Hussainabad (4 km from village)	
Hospital	No; people go to Distt HQ	No; people go to Distt HQ	No; people go to Distt HQ	No; people go to Distt HQ	No; people go to Distt HQ	No; people go to Distt HQ	
Post office	No	1	No; 13 km away	No	1		
Police Station	No	1- Karende	No	No			
Boats	Not necessary	Not necessary	100	Not necessary	Not necessary	Not necessary	Except, Ghat Kusumbha, flood is not a frequent occurrence
Divers	Not necessary	Not necessary	14	Not necessary	Not necessary	Not necessary	Except Ghat Kusumbha, drowning incidents are rare

Despite the fact that that, except Village Dumri in GP Pinjari in Block Barbigha, all other villages surveyed are fairly big villages with population ranging from 6,000 to 10,000, the capacities available are limited. Capacities like veterinarian hospital (available only at Chewara), Banks, nearby markets or hospital at least one in each block are not available. While some basic infrastructure is in place, it needs to be developed significantly. Lack of adequate capacity also tends to enhance risk. A major handicap observed was that there was no significant awareness about the do's and don'ts of main disasters; Disaster Management (DM) training has not been adequately imparted to community. Mock drills are held in schools for earthquakes, but it is not being taken very seriously by the community since earthquakes are not perceived as a major risk, whereas the risk is very real.

3.5.2 Capacity Assessment for Urban Areas

3.5.2 Urban Risk Vulnerability Assessment

For urban areas HRVCA was carried out in one hospital (Sadar Hospital), two schools (Madhya Vidyalaya, Karcha, Sheikhpura and DM Uchha MadhyamicVidyalaya, Sheikhpura) and Nagar Parishad, Sheikhpura. The vulnerabilities of urban areas in Sheikhpura are slightly different from the rural areas. These are primarily earthquakes, particularly structural and non-structural safety; Water logging; fire; road accidents; and epidemics.

Table 11: Capacity Assessment in Urban area of Sheikhpura

Hazard	Vulnerability					Remarks
	VH	H	M	L	N	
Earthquake		H				The district falls in Seismic Zone IV and therefore the risk of earthquake is high. Both the structural and non-structural vulnerability are major issues for government buildings as also private housing.
Water logging			M			There are stretches where water logging during monsoon does occur. However, the problem is more acute in slum areas such as wards 2, 5, 16 and 25 where about 65000 people live.
Fire Incidents			M			Fire incidents occur occasionally due to short circuits, fire incidents in slum areas due to use of firewood, festivals etc. Fire Department is not adequately equipped or prepared to meet the major fire emergencies.
Road Accidents			M			There have been incidences of minor road accidents in the district including few fatal cases. The main reasons are proximity of main roads, lack of awareness about road regulations among the drivers.
Epidemics			M			There are incidents of epidemics but the Health Department was not in a position to provide the

						detailed data for analysis.
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Table 12: Capacity Assessment of selected places in District Sheikhpura

Capacity	Nagar Parishad	Madhya Vidyalaya, Karcha	DM Uchha Madhyamic Vidyalaya	Sadar Hospital	Remarks
Building Bye Laws Amended	Yes; in 2014	Yes; in 2014	Yes in 2014	Yes; in 2014	These were amended in 2014 but the compliance regime is quite weak
Structural safety issue addressed?	Not fully	No	No	No information	This will be major issue in case of earthquake
Mock drills carried out?	No	Occasionally	Occasionally	No	
Is a DMP in place	No	No	No	No	
Fire Service adequacy	No	No	No	No	Fire Services Department is short of both manpower and equipment
Drainage System	Inadequate	Inadequate	Inadequate	Inadequate	Water logging occurs due to inadequate egress of water
Awareness	Very less	Through Drills for earthquake	Through Drills for earthquake	Very less	
Training	No	Yes	Yes	No	There are no dedicated disaster mgmt. specific Task Forces at the ward level

Urban Risk Mitigation has not been paid adequate attention. This aspect needs to be looked into carefully at the level of Nagar Parishad. There is little disaster awareness about the role of local authority, required as per Disaster management Act, 2005. Therefore, the risk gets multiplied.

3.5.4 Capacities at district level

Interactions were also held with key district level departments and allied agencies, to assess the support being provided to the community in case of major hazards and the capacities available at district level. These are briefly indicated below:

District Disaster Management Branch (coordination with line depts, resource mgt, planning & response)

DM Department is the core department to coordinate and manage the disasters, caused by hazards. The department is assisted by concerned line depts/ agencies to fulfill assigned responsibilities. Pre, during

and post action plans in coordination with line depts, including disaster preparedness, mitigation, conducting relief, rescue & rehabilitation work are main activities of DM Department.

DM Department has identified total 72 elevated places as the safe shelters of the disaster victims in 6 blocks of District Sheikhpura. These relief shelters are mainly Schools, Colleges, Panchayat Bhawans and Community Centers. The detailed list is enclosed as separate Annexure in the end.

Further the 49 private boat owners in flood prone area of the District (mainly Ghatkusumbha) and 13 divers have been identified and documented with complete details, as the separate Annexures. Apart from it, dedicated task forces and monitoring centers have been formed at the District level. The Revenue Officers, Vikas Mitra, Panchayat Mukhiyas, Panchayat Secretaries, Tola Sewaks, Indira Awaas Assistants, and designated Watchmen etc are being trained at the District level. The selected community representatives have also been trained to deal with any type of disaster. However there is a long way to go to adequately address the applicable hazards & associated risks.

Health Department (capturing the status of medical facilities and preparedness)

There is only one hospital in the district, 6 Primary Health Centers and 85 Sub Centers. The department did not have any actual data about adequate stock of medicine in a disaster situation. The health facilities for people as also for livestock are required to be more in terms of doctors or Vets or paramedics. However, no data could be made available about the incidences of epidemics or when the last epidemic occurred. As for preventive measures, it was stated that these are taken but there was no specific information as such about what and when preventive measures are taken.

It is a fact that there are private doctors at block/ village level but again no details could be made available. It also came to notice that the ambulance service “102” was available up to village level however the timely availability of such facilities during the emergencies needs to be checked. Further, there are several schemes for health sector but these are required to be tested & verified on the ground at regular intervals.

The dedicated medical teams have been formed in all 6 blocks of District Sheikhpura, to deal with any disaster like situation such as flood, drought or epidemics etc. The details have been provided in separate annexure (including Nodal person, designations, contact numbers etc) covered in the end.

Agriculture Department (pertaining to water management, cropping and livelihood)

Drought is the pre-dominant disaster in the district, occurring almost every year in some parts of the district. The main crops grown are paddy, Maize, wheat, khesari Dal and Onions. The department makes arrangements to provide seeds for alternate crops. Based on damage assessment, subsidy is given to affected farmers. There are no agricultural extension workers. However there is a provision of

Kisan Salahkar to give right and timely advice to the farmers at the time of need. Drought proofing ponds are being maintained by the department to ensure water conservation during the monsoon season.

Alternate means of livelihood are provided, under MGNREGA, to drought affected population. However, overall there is need of adequate long term measures to mitigate the impact of drought.

Education Department (thrust on structural, non-structural safety and capacity building)

It has been observed that Disaster Management has yet to be embedded and mainstreamed in most of the streams of education sector, mainly from structural and nonstructural safety point of view. The structural safety of schools has yet to be certified and verified by concerned agencies and the non-structural measures are also required to be periodically checked and inspected regularly. However, during the interaction with schools, it was brought out that disaster specific information is being provided as part of the school curriculum, e.g. earthquake and lightning protection as a part of the class 8th Science syllabus. Besides, mock drills are held occasionally for earthquake. Thrust is required to cover the other potential hazards, keeping in view of the local vulnerabilities.

Rural Development Department (Nishchaya programmes, infrastructure, water & sanitation etc)

The District Administration is currently running the several flagship programmes for rural development such as Seven Nishchayas (including infrastructure, connectivity, communication, WASH, skill development, inclusion) Jeevika, MGNREGA, IAY, ICDS, SSA, Immunization etc. However, each initiative/ programme is being run as a stand-alone programme and therefore the need is need to mainstream the DRR comprehensively in these programmes and provide the lateral support from one programme to other for Disaster Risk Reduction (DRR).

Urban Development Department (including city planning, techno legal regime etc)

No City Development Plan has been prepared for Sheikhpura as it is not covered under JNNURM. However, the department is conscious of the need to address key issues such as improvement in drainage system, solid waste management, aggressive implementation of techno legal regime, reducing road accidents etc. A Roadmap for addressing the major issues is required to be prepared for the local authorities, on the lines of DM Act 2005, NDMA Guidelines and DRR Framework. Integration with PM Housing Yojana is been done.

Fire Services Department (status of resources including trained staff, vehicles, ladders etc)

There are incidents of outbreak of fire. However, it may be difficult to put them in different categories.

The strength of the fire services is not adequate. It requires to be augmented both in terms of human resources and equipments. The existing fire safety equipments too are in poor condition. The resources are not disbursed across the blocks on the basis of pre-determined norms. It is difficult to indicate the definite time frame for responding to outbreak of fire in rural and urban areas separately. However, there are no forest fires since district has no significant forests.

Currently the department has total manpower strength is twenty two, including all technical staff. As regards the resources, department has 9 fire tenders (3 large and 4 small) and 2 ladders (of 35 feet) available in working condition. Further, the department also has provision of water storage. Total 47 incidences of fire due to Harvester Furnace Burning, have been recorded so far in year 2018, from March to May, and December to January. .

The department is required to provide the training to community or school children about immediate action to be taken in case of outbreak of fire. It has been felt that this should be included in the functions of the department in order to provide additional strength and resources. Department should have fully equipped dedicated rescue teams for responding to disaster situation although saving people from fires is one of their functions and it is being discharged whenever there is outbreak of fire and people are trapped in it. Further it has been observed that there is need for the dedicated Disaster Management Plan or Standard Operating Procedures for the department.

Police Department (with number of thanas, total strength and capacities)

Department perceives its role in disaster management, especially during & post disaster situation. During disasters, police is required to ensure maintenance of law and order, search and rescue, rescue of livestock, distribution of relief materials etc. There are total 7 police stations in District, based at Sheikhpura, Barbeegha, Korma, Ariyari, Sirari, Mehuns, Chewara and Sheikhpursarai. There is no specific SOP or Action Plan for the actions to be taken during disasters. It has come to know that few personnel have received the disaster management training. Further, the Department is required to be trained in the Incident Response System (IRS). The coordination with other line departments is also very vital for the Police, to effectively address any emergency situation.

Transport Department (availability of vehicles such as bus, truck, tractor etc during emergency)

The main role of Transport department is to provide safe transport for taking the personnel from disaster sites to safer place and also transport the relief materials to the needy one during disaster. The efforts have been made to collect latest status of available transport vehicles in Sheikhpura district including bus, truck, tractor etc. The department perceives its role in post-disaster situation mainly, which came out after the interaction during the earlier interface with the department. There is no

standard operating procedure laid down for the department with reference to disaster management. Department is required to maintain sufficient inventory of vehicles, manpower etc.

Food and Supplies Deptt (addressing needs of storing food and other relief items during disaster)

The main role of department is to provide food grain and other items to the people during disaster. In Sheikhpura District there are total 10 storage godowns (spread in four blocks, 4 in Sheikhpura, 2 in Barbeegha, 2 in Chewada and 2 in Ariyari) so far, 1 godown with highest capacity of 5000 Metric Tonnes (MT), 2 with the capacity of 1000 MT and 7 with the capacity of 500 MT. However there is a network of PDS for distribution purpose at sub district level, but as a matter of fact the department has no specific standard operating procedure to function in a disaster situation. And the department doesn't have any dedicated captive transport facility; they largely depend on the Transport Department or local transport for this purpose. As for the additional supplies in case of a major disaster, usually there is dependence on the supplies from state and central government. No specific training has been provided to Department personnel to meet additional requirement in disaster. They primarily depend on their past experience and directions of District Administration. However roaster is being maintained for transport purpose for regular monitoring.

Telecommunication Department (for early warning, communication, timely dissemination and coordination with agencies)

The role of Telecommunication is primarily in dissemination of warnings in the disaster situation. At present it is being done through SMS to persons designated for this purpose. As an additional role, it can also help in generating awareness through SMSs/ mobile phones since these are available with almost each household in the district. It has been suggested that the dissemination of warnings or any other information at any stage of disaster can be easily made directly to people through general SMSs and, if necessary, recorded phone calls. It has been observed that the resources of Telecom service providers can be utilized better and more efficiently.

Animal Husbandry & Fisheries Deptt (providing veterinary health care, animal shelter, relief etc)

The Department of Animal Husbandry and Fisheries have important role to play in providing the veterinary health care, animal shelter, relief measures required for animals and poultry in State, and to take it forward to Sheikhpura District and Sub District level. Deptt is expected to provide preventive and curative health care to livestock by keeping a check on disease outbreaks, rendering preventive vaccinations, deworming and treatment of the ailing animals. So far, the department has identified, developed and maintained 18 Animal Shelters for take the disaster relief measures to livestock during

natural calamities. The list of Animal Shelters is also annexed.

Analysis

The hazard, risk, vulnerability and capacity analysis in Sheikhpura has been carried out in detail, involving villages in rural areas, selected institutions in urban areas and district level interaction with different concerned departments. It has brought out that vulnerability is more due to poverty, social and economic disparities, structural and non-structural gaps, inadequate compliance with techno legal regime, gender inequity and lack of adequate education. The capacity at different level is grossly inadequate. There is by and large insignificant capacity at almost all levels-government departments, urban local bodies, urban institutions, rural bodies including community. NGOs and SHGs are at present not playing useful role to enhance capacity. Therefore vulnerability is more and capacity is minimal. Since disaster risk is directly proportional to vulnerability and inversely proportional to capacity, risk has enhanced considerably. In case of any major disaster, impact of enhanced risk is going to be enormous. Recently it has been observed that in case of drought, these factors contribute to enhanced risk and thereby more economic losses, which could be reduced by taking mitigation measures for reducing vulnerability and enhancing capacity.

Water logging becomes a problem, both in urban and rural areas due to kuchha roads and lack of adequate drainage system. The adequate measures are required to be taken in vital zones like Ghatkusumbha and surrounding low lying areas.

Fire incidents occur due to short circuits, overloading, use of firewood etc. Fire Department lacks adequate manpower as also sufficient number of fire engines and the other allied equipments. In city area, the small lanes and dense population create yet another impediment.

Lightning cases occur some times during rainy season. It results in few deaths almost every year. Basic precautions to be taken in such case of lightning have to be popularized in the community. At present, awareness is being created among school children by adding elementary precautions in the Text Book of Class 8 (Science).

Snake bites occur sometimes, mainly during rainy seasons when snakes come out over the ground. It is more dangerous for women when they go for defecation during dark. The community uses their traditional practices in such cases. However, primary health centers/ sub-centers also keep anti venom medicines/ injections. WHO Team also extends required assistance.

District is also prone to the drought, and specific measures may be taken to deal with the same. The State Government and District Administration have also notified the same to work on this pertinent issue.

The nearest NDRF Battalion is based in Danapur Patna and further SDRF/dedicated specialized teams can also be called upon, in case of emergency situation arising in the Sheikhpura District.

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.

Table 9: Capacities of Departments at District level

S.N.	Resources	Description
1.	Canal	Enough in numbers
2.	Communication	BSNL/Telecom, Mobile & Internet
3.	T.V/ Radio Stations	Enough cable connections in district
4.	Electric Extension Grid	Sheikhpura
5.	Road Connectivity	Nalanda-Barbigha, Mokama- Barbigha, Sheikhopursarai- Shahpur, Sirari-Lakhisarai, Chewada-Sikandra-Jamui
6.	Railway	Sheikhpura
7.	Agriculture	1 Block Agriculture Officer (Ghatkusumbha), 23 Agriculture Coordinators, 52 Kisan Salahkar/Consultant
8.	Education Department	454 Primary School, 44 Secondary School, 22 Middle High School, 2 Government College
9.	State Disaster Response Force	Begusarai
10.	Nearest regional IMD Centre	Patna
11.	District EOC	EOC in Disaster Management Dept. Sheikhpura
12.	Firefighting	2 Big Vehicle, 1 Medium Vehicle and 6 Small Vehicle, 6 Grih Rakshawahini, 16 Firefighters, Water source- 13 Hydrant, 8 Pond
13.	Trained Human Resource	4 Divers (Master Trainers), 10 Divers, 48 boat owners.
14.	Health Facilities	65 Regular Medical Officer, 150 approx. Supporting staff, 178 ANM, 60 GNM, 7 District level officers, 1 District hospital, 0 Sub Divisional Hospital, 1 Referral Hospital (Barbigha), 1 CHC, 6 PHC, 17 APHC, 104 HSC, Ambulance- 10
15.	Relief & Rescue	6 Teams, 6 Relief Shelters,
16.	Rainfall Measuring Device	Available in all blocks

17.	Veterinary Doctors Team and Animal Shelters	4 Teams,
18.	Tent Shop	Present in all blocks
19.	Child Development Institution	705 Anganwadi Centers, 678 Sewika, 614 Sahayika, 33 Anganwadi Officer
20.	Jan Witran Shop	292
Source: District Emergency Operation Centre Sheikhpura, 2022		

Table 9.1: Capacities of Early warning system

Flood	IMD information
Lightning	Number of arrestors – 6 in Sheikhpura a. Supply office, Sheikhpura - 1 b. Excise office Sheikhpura - 1 c. Government Engineering college, Sheikhpura – 2 d. Government Polytechnic Shekopursarai –1 e. Government Mahila ITI Sheikhpura – 1
Rain gauge:	Automatic rain gauge – 54 Oral rain gauge – 6 Automatic weather system – 5

Source: District Emergency Operation Centre, Sheikhpura, 2022

Table 10: Capacities at panchayat level

S.N.	Human Resource	Total Number
1.	Mukhiya	49
2.	Ward Members	631
3.	Packs Adhyaksh	49
4.	Gram Kachehri	49
5.	Gram Kachehri Sachiv	38
6.	Panchayat Sachiv	22
7.	Rojgar Sewak	42
8.	Indira Awaas Sahayak	34

Source: District Emergency Operation Centre Sheikhpura, 2022

3.6 Overall HRVC Analysis

The hazard, risk, vulnerability, and capacity analysis in Sheikhpura brought out that vulnerability is more due to poverty, social and economic disparities, structural and non- structural inadequacies of the building stocks, inadequate compliance with techno legal regime, gender inequity, and lack of adequate community awareness. The capacity at different levels is inadequate to some extent. There is a need for further capacity enhancement at the different levels such as government departments, Panchayati Raj Institutions and Urban Local Bodies including the community. NGOs and SHGs are at present, however, they need to play a proactive role to enhance capacity of the communities.

Overall the district administration has taken significant proactive measures to deal with disaster

situations, including flood control measures, earthquake awareness, and drought mitigation steps in selected domains. However, still there is a long way to go.

The NGOs, which are active in the district, include Red Cross and Nehru Yuva Kendra Sangathan (NYKS). Red Cross is particularly very vibrant and gets actively involved in disasterrelief, response, and awareness generation activities in the district. However, the GO-NGO and civil society coordination is an area which needs to be further strengthened.

CHAPTER 4

INSTITUTIONAL ARRANGEMENT

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 Sheikhpura 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) 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 Sheikhpura 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. However, at district

there are still gaps which need to be bridged. For instance, there are no dedicated District Training Centers 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 Block Level

At the block the Circle Officer the co ordinating officer for any kind of disaster related work. Some small groups 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 block level, there is a long way to go in terms of local level coordination. Further, there is a need for 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 a need for institutionalizing disaster management through the formation of DM Committees. However, the villagers need to go through capacity-building training 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 Sheikhpura adequate initiatives have yet to be taken up. In villages of Sheikhpura

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 other family members at home. As per this Plan, to begin with, the local NGOs, CBOs will be identified and exposed to training programs inclusive of all social problems along with inputs related to disaster management, health, and hygiene so that they could adopt an integrated approach to disaster management on the ground affecting vulnerable communities.

4.6 District Emergency Operations Center (EOC)

The District EOC is located at Sheikhpura DM/DC office. District EOC is fully activated during disasters. There is a constant need for up-gradation of DEOC staff and equipment from time to time with the latest technology. The activation comes 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.

The disaster/emergency situation would be communicated to DM, SP, CMO, SDM, Commandant Home Guard, and 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

In order to achieve set milestones of disaster risk reduction, it is necessary to reduce the vulnerability of the community and improve its capacity. Besides community, the capacity of all other stakeholders also has to be built in order to enable them to discharge their functions before, during and after disasters in a manner that 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 as follows.

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. Sheikhpura is also not an exception to this problem.

PRI bodies such as Nagar Parishad and Nagar Panchayat play a critical role pre, during and post disaster. Their support and participation is vital for eliciting support and engaging the community disaster management planning and recovery processes. In Sheikhpura, the District Administration elicits the support of the district PRI bodies in emergency response particularly during flood and waterlogging and evacuation of affected community at the Municipal Ward level. Further, the inputs of the Nagar Parishad would ensure whether the DM plan is in accordance with Building Bye-Laws, 2014.

Interactions with the Nagar Parishad and Nagar Panchayat revealed that there is still a greater scope

for interaction and engagement of these PRI bodies with the District Administration for effective disaster management planning process at the district level

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:

1. 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.
2. 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.
3. 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 of the structure/building and its related risk assessment.
4. Adequate training may be imparted to engineers, architects and masons for disaster resilient constructions.
5. Engineers/ architects in private sector may be certified for the purpose of making maps/plans initially and ensure that disaster resilient features are incorporated during constructions.
6. With *pucca* constructions gradually coming up in rural areas, a techno legal regime for such constructions may be introduced.
7. 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 Sheikhpura 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 are going to get flooded; the dissemination is through conventional means using phone lines. The last mile connectivity of dissemination of warnings to the community is still a problem. There are no EOCs at the 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 Flood/ Water Logging

S.N	Department	Preparedness	Prevention	Mitigation
1.	DDMA	<p>To review/follow-up with departments about the flood preparedness/repair/maintenance activities and compile data for flood response</p> <p>Repair of rain gauge at blockheadquarters.</p> <p>Sending rainfall data to SDM and DM</p> <p>Identification of flood vulnerable panchayats</p> <p>Ensure availability of government and private boats</p> <p>Ensure availability of Generators, Tents and pump set</p> <p>Ensure sufficient storage of</p>	<p>Strengthening and sensitization of Zonal Flood Committees.</p> <p>Removal of encroachment along the riverbanks/tributaries</p>	<p>Recognizing the importance of human resource development and capacity building for effective disaster mitigation.</p> <p>Strengthening and Upgradation of the existing flood forecasting system</p>

		<p>foodstorage houses</p> <p>Ensure sufficient storage ofpolythene</p> <p>Formation of panchayat wisearch and rescue team</p> <p>Identification of safe shelter forcommunity.</p>		
2.	Animal and Fisheries Resources	<p>Establish and practice protocols for Early Warning approval anddissemination.</p> <p>Check animal vaccination before seasonal disasters such asfloods.</p> <p>Build awareness among the departmental staff, communities, and the key stakeholders engaged with the department on potential disasterisks and measures to reduce therisk.</p> <p>Check supply of life-saving vaccines in advance and storethem safely.</p> <p>Identification of safe place inPanchayat with help of community and field staff of thedepartment.</p>	<p>Preparation of emergency animal evacuation plan</p> <p>Development of flood safe ponds andrestoration of ponds in vulnerable areas</p>	<p>Awareness generationand capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work.</p> <p>Awareness generationand capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work.</p> <p>Bring awareness among the departmental staff, communities, and thekey stakeholders engaged with the department on</p>

				potential disaster risks and measures to reduce the risk.
3.	Bharat Sanchar Nigam Limited	<p>Standby arrangements for temporary electric supply or generators</p> <p>Establish Mass Messaging services and inform the society on the weather forecast and early warning. Sending alert messages during emergencies.</p> <p>Location of equipment, wires at safe places to rectify the technical problems in time.</p> <p>Monitoring and safeguarding the line department's telecom infrastructure in flood vulnerable locations/areas</p>	Strengthening early warning and dissemination system area wise and disaster wise	<p>Establish an emergency restoration mechanism and a contingency fund for emergencies</p> <p>Prepare an action plan for the emergency electric supply</p>
4.	Education Department	Open space for emergency construction of sheds etc. shall be left to the extent possible.	Selection of site for the construction of school building shall be done with the level of flooding water in mind.	<p>Conduct Safety audits including school safety, electrical safety, and food safety awareness generation and developing School DM Plans.</p> <p>Implementation of Safe Saturday programme in all schools.</p>

5.	Electricity Department	<p>Establish and practice protocols for Early Warning approval and dissemination.</p> <p>Identification and assessment of power generating units at the panchayat level block level and district level.</p> <p>To promote the schemes on non-conventional energy sources.</p> <p>Location of such units away from the water logging areas.</p> <p>Installation of biogas units or windmills at safe places in the villages.</p> <p>The department must identify the power units, which are located in disaster-prone areas, arrange proper route connectivity for relief, emergency logistics, and provide alternate connectivity to reduce damage.</p>	Installation of high-raised polls and good-quality wires in vulnerable areas.	Establish underground wire installation in new developing areas
6.	Fire and Emergency services	<p>Assess the vulnerable points in the infrastructure, especially in fire and hazardous prone industries, and take measures like timely repairs, etc.</p> <p>Maintenance of firefighting equipment etc. and installation of fire alarm and water pumps like hydraulics, sprinklers, etc.</p> <p>Scope the budget for the maintenance of firefighting equipment and structural measures etc. under different categories.</p> <p>Protect the life and</p>	Based on recent or past emergencies the department should frame an outline of the future action plans including disaster risk reduction preventive measurements.	<p>Organize awareness campaigns regarding safety measures for incidents.</p> <p>Conduct regular drills.</p> <p>Enhance firefighting capabilities</p>

		<p>property from firebreak and other disasters like floods.</p> <p>Promotion of fire safety standards</p>		
7.	Health Department	<p>Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene, and nutrition.</p> <p>Define standards/ benchmarks to measure the department's performance on risk reduction activities and emergency response capacities.</p> <p>Build awareness among the departmental staff, communities, and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.</p> <p>Ensure sufficient preparedness is there for emergency response.</p>	<p>There should be an arrangement of proper mess for the preparation of food from health & safety point of view</p>	<p>Provision of functional isolation wards in all tertiary hospitals.</p> <p>Provision of a machine that could diagnose all the rare pathogen and their Characteristics including bioterrorism agents.</p>

8.	Civil Defense	Organizing sensitization programmes and disaster management training in District.	Establish the District-based training center for training of civil defense volunteers	Awareness generation and capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
9.	Water Resources Department	<p>Assess the vulnerable points in the infrastructure, especially the river embankments, and take measures like timely repairs</p> <p>Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.</p> <p>Scope the budget for the maintenance of embankments, sluice gates, lock gates, etc. under different categories.</p> <p>Build awareness among the departmental staff, communities, and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.</p> <p>Periodically inspect the embankments for cracks, holes, and other potential wear and tear.</p>	<p>Emergency floodways and river diversions</p> <p>Construction of flood protection walls, flood diverting channels, etc.</p> <p>Construction of barrages on the banks of rivers.</p>	Awareness generation and capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work

10.	Public Health Engineering Department	<p>Floods in this district need to be taken care of at the same time we also need to look at poverty and illiteracy, which is prevailing in this District.</p> <p>Establish and practice protocols for Early Warning approval and dissemination.</p> <p>Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching powder in the relief camps/shelters in disaster probable areas.</p> <p>Establish a contingency fund in the department.</p> <p>The Department must try to construct hazard-specific sanitation so that the available services can be utilized properly.</p>	<p>Improvement of drinking water supply system and sanitation structures.</p> <p>Strengthening the public health institutes, surveillance system, and epidemiology department.</p>	<p>Improvement of design for water sources and water supply protective structures.</p> <p>Ensure water supply Channel improvement.</p> <p>Ensure flood proofing</p>
11.	Building Construction Department (PWD)	<p>Identify the areas, which get water inundated, flood-affected most of the time.</p> <p>There is a need to make build the infrastructure that would improve access to these areas easy especially during disasters, like Floods.</p>	<p>Strict implementation of work regulations.</p> <p>Strict adherence to fire safety standards in all buildings.</p>	<p>Carry out structural safety inspection/audit</p>

12.	District Rural Development Agency(DRDA)	<p>The use of flood-resistant techniques/ structures in the construction of roads, community center, rural building, etc.</p> <p>Guidance and helping the DM committees in developing the disaster management plan.</p> <p>Capacity building of community in the rural areas regarding DRR.</p> <p>Allocation of separate funds for disaster management, so that the essential reconstruction work can be started early after an emergency.</p> <p>Define standards/ benchmarks to measure the department's performance on risk reduction activities and emergency response capacities.</p> <p>Ensure that food supplies are safe from any adulteration, secure from damage, and poisoning.</p>	<p>Restriction of construction near/along the waterway</p> <p>Mainstreaming MGNREGA with DRR in vulnerable areas</p>	<p>Spatial planning (flood risk-adapted land use); building regulation and improvement of building flood resistance (wet- proofing and dry-proofing)</p>
13.	Food and Consumer Protection	<p>Coordination with Supply Department to ensure that all safety measures are in place for proper storage, transportation, and distribution of supplies.</p> <p>Build awareness among the departmental staff, communities, and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.</p> <p>Coordinate with the</p>	<p>Systematically plan to deal with the food requirements well in advance to avoid situations at the district, sub-district level</p>	<p>Procurement in advance at various micro-zones in sufficient quantity before the onset of monsoon.</p>

		<p>Supply Department to ensure enough food and other necessary supplies are available in disaster-prone areas.</p> <p>Ensure availability of at least one spacious go down in each block to keep enough food and necessary supplies.</p>		
14.	Municipal Corporation	<p>Maintain proper solid water management</p> <p>Maintain and clean proper Drainage System</p> <p>Provide clean drinking water</p>	<p>Removal of encroachment along the riverbanks and tributaries</p> <p>Establish infrastructure for flood warning and dissemination</p>	<p>Awareness generation and capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work</p>
15.	Water Resources Department	<p>Assess the vulnerable points in the infrastructure, especially the river embankments, and take measures like timely repairs</p> <p>Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.</p> <p>Scope the budget for the maintenance of embankments, sluice gates, lock gates, etc. under different categories.</p> <p>Build awareness among the departmental staff, communities, and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.</p>	<p>Emergency floodways and river diversions</p> <p>Construction of flood protection walls, flood diverting channels, etc.</p> <p>Construction of barrages on the banks of rivers.</p>	<p>Awareness generation and capacity building training of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work</p>

		Periodically inspect the embankments for cracks, holes, and other potential wear and tear.		
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5.3.2 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, Mitigation, Response and Preparedness at all GP level schemes	<p>Adaptation and mitigation programmes in District Disaster Management, and earthquake zone wise monitoring of constructions.</p> <p>Block and GP level risk reduction monitoring and review.</p> <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 Panchayat 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>Analysis and risk assessment of civil construction and structures.</p> <p>Distribution of the responsibilities to various participants after analysis</p> <p>Initiative to prepare 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	Retrofitting of identified dilapidated buildings after rapid visual screening Rapid visual screening and assessment of earthquake resistant capacity of all pre-constructed buildings specially government, hospitals, schools and administrative office buildings	Rapid visual screening and assessment of earthquake resistant capacity of all pre-constructed buildings specially government, hospitals, schools and administrative office buildings Promotion of earthquake resistant building construction techniques and training of all engineers, masons and barbinders working in the district
3	Civic Bodies	Passing the map in compliance with the provisions of the Building Act Identifying dilapidated buildings and banning its residential use Keeping in view the seismic zones-iv, registrations under RERA Act has to be allowed before construction of buildings	Retrofitting of identified dilapidated buildings	Keeping heavy vehicles like bulldozers, dumpers and cranes etc. available by proper repair and maintenance to deal any unavoidable situation / circumstances

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>	<p>Always keep trained workforce ready along with firefighting equipment and vehicles to deal with fire during earthquakes.</p>
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 Department	To ensure earthquake resistant construction of school buildings to be	<p>Ensure active participation in mukhyamantri School Safety program.</p> <p>Organize earthquake</p>	<p>Marking the school playground for setting up relief camps and deputation of teachers for the education of</p>

		constructed by Bihar State Educational Infrastructure Development Corporation Limited and other institutions.	safety week every year inschools Ensure to prepare schooldisaster management plan	refugeechildren in these camps. Making knowledge of prohibitive obligations through public awareness Conducting mock drills inevery school from time totime to protect oneself during earthquake Formation of earthquakedisaster response teams like first aid team, reliefand shelter surveillance team, emergency alarm team, evacuation team, search and rescue team etc. in each school and their regular training
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5.3.3 Road/ Rail Accidents

S.N.	Department / Division Name	Prevention	Reduction / Mitigation	Response/Recovery
1	District Administration / District Disaster Management Authority	Awareness Programes	Identification of Black Spots Organize Road Safety Program (9-15 Jan) every Year. Ensure participation ofSchool kids, children from NCC. Establish Driving TrainingCenters	Formation of District Level RoadSafety Committee and ensure regular meetings. Promote Community Policing Publish guidelines before anyfestivals regarding the road safety.

2	Transport Department	<p>Strict implantation of motor vehicle act 1988</p> <p>Follow Strict licensing mechanism.</p> <p>Ensure no under-age drivers.</p>	<p>Organize awareness programme.</p> <p>Organize Road safety week</p>	<p>First Aid Box in every Private and Government Vehicle.</p>
3	Police	<p>Ensure Traffic Rules regulation</p>		<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		<p>Depute Paramedic Teams totake victims to hospital on time.</p> <p>Detailed information of Trauma Centre, ReferralHospital</p>	<p>Formulation of Quick ResponseTeam</p> <p>Training of community regardingFirst-Aid</p> <p>Depute teams near Black Spots.</p> <p>Avail Medicines, Bandage, and stature in the hospital in the rightquantity.</p> <p>Detailed info of blood bank,MRI, X-Ray Centre, Blood Donor, Specialist.</p>
5	Education Department		<p>Celebrate Road Safety Programmed</p> <p>Create awareness amongst students</p>	

5.3.4 Epidemic (COVID-19)

Department	Preparedness	Prevention	Mitigation
DDMA	<p>Issue alert on spread of epidemic on Short / Medium / Long range duration and disseminate information received from NDMA/BSDMA and Ministry of Health & 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 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>Social Distancing measures, use of masks and other safety measures should be popularized and people should be persuaded 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>Build awareness among the departmental staff, communities and schools on potential disaster risks and measures to reduce the risk.</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>DDMA/DM in tandem with SDMA/Relief Commissioner coordinate with the local industries/corporate, under CSR activities, to mobilize emergency health relief and other relevant medical logistics.</p> <p>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</p>

			and COVID-19 infected persons not considered as stigma.
Public Health Department	<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. 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>

5.3.5 Lightning

Department	Preparedness	Prevention	Mitigation
DDMA	<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 compulsorily download Damini app.</p> <p>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.</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 criticalities in the district and evaluate their preparedness plans accordingly to address the gaps and revitalize the mitigation strategies.</p> <p>Installing lightning conductor or arrestor in old, existing and new buildings and it should be strictly followed.</p>

5.3.6 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</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</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</p>

		<p>as a fire disaster prone village.</p> <p>Capacity building related to fire related techniques and preventive measures</p> <p>To organize activities like celebrating fire safety week regularly by Panchayat 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>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>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 Building Code 2005.</p> <p>To give wide publicity regarding preventive action.</p>
2.	fire services	<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.	Education	Organizing fire safety	Design a proper public	To make

	Department	<p>week in all schools.</p> <p>To do other work of community awareness.</p>	relations system to ensure rumor control.	<p>arrangements for fire safety in school buildings.</p> <p>School Safety Capacity building at the institutional level should be promoted by carrying out various activities under the program (SSP).</p>
4.	Animal Husbandry	<p>To make the villagers aware to keep the pet animals safe from fire.</p> <p>Proper storage of medicines etc. for the animals affected by fire.</p>		
5.	RTO	<p>Provision of training to drivers, conductors and employees in first aid and basic life saving techniques.</p> <p>To ensure adequate stock of first aid kits and maintenance of fire extinguishers in all vehicles and depots in the district.</p>	<p>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.</p>	<p>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</p>
6.	Health	<p>Training arrangements for Mobile Medical Groups, Psychological First Aid Groups, Psycho-Social Care Groups and Paramedics Quick Response Medical Groups (QRMTs).</p> <p>Various activities related to capacity building and training measures By completing thus increasing capacity building at the institutional level.</p>	<p>Damage and need assessment training and formation of groups in the department.</p> <p>Arrange for timely procurement of portable equipment for field and hospital diagnostics etc.</p> <p>Ensuring the training of members.</p>	<p>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,</p>

				portable ultrasound machines, triage tags, etc
7.	Police	<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.	Civil defence and municipal	<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.	Building Construction Department	<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.	Panchayati Raj departments	<p>There must be space between the construction of village buildings/huts so that it can be easily accessed in case of fire.</p> <p>To maintain water</p>	<p>To focus on the use of fire fighting techniques in the construction of rural buildings/huts.</p> <p>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>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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5.3.7 Heat wave / Cold wave / Lightning

S.N	Department Name	Preparedness	Prevention	Mitigation
1	DDMA	<p>(a) Heat Wave 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) cold wave 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 the patients.</p> <p>(c) Lightning</p>	<p>(a) heat-wave 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) cold wave Keeping the body warm from external sources, consuming sunlight when the sun shines.</p> <p>To make arrangements for lighting bonfires for people without homes, sleeping in public places and people</p>	<p>a) heat-wave 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) cold wave To change the opening and closing times of the children's schools.</p>

		<p>To publicize suggestions related to do's and don'ts to avoid thunderstorm.</p>	<p>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>(c) Lightning 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>Instructing to keep the school closed in case of severe cold wave.</p> <p>(c) Lightning Installation of lightning conductors in tall buildings.</p>
2	Health Department	<p>a) Heat-wave 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) cold wave Cold wave disease like numbness in human limbs, temporary discoloration of skin to bluish white, frost rash - due to touch of cold metal/storage of</p>	<p>(a) heat-wave To issue necessary advisories from time to time for the community to avoid heatstroke.</p> <p>(b) cold wave To issue necessary advisories from time to time to avoid cold wave for the community.</p>	

		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.	

CHAPTER 6

CAPACITY BUILDING THROUGH TRAINING AND AWARENESS GENERATION

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 approaches to build upon the existing capacity of the district.

6.1 Awareness Generation

In Sheikhpura 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 needs to be enhanced, particularly in view of the local traditional practices and experiences. There is an obvious need to improve the level of awareness amongst government officers and employees at the district and sub-district levels.

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 Sheikhpura, 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 Sheikhpura 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 have to be undertaken on priority and in the right earnest. The institutional capacity building covers not only the disaster management training of officials of various departments policymakers, police, fire services, SDRF, and the other professionals including Doctors, Engineers, Architects, Masons, Nurses, 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 the 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 Sheikhpura, 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 Sheikhpura 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 other downstream 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

Table 11: People to Be Trained

S.N.	Indicative List of District Officers/Personnel to be Trained
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

1. List of Masons / engineers / architect/ swimmers (Master Trainer)/ 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: list of masons trained on earthquake

S.N.	Name of Mason (Shri/Md.)	Father's Name (Shri/Md.)	Name of Village	Age	Experience	Qualification	Mobile No.
1	Pankaj Mahto	Ramdrit Mahto	Panapur	24	10	Literate	9709992008
2	Dinesh Paswan	Raso Paswan	Panapur	36	6	12 th	6206429108
3	Parmanand Mahto	Barwari Mahto	Bamghat	3	36	10 th	9162039463
4	Nageshwar Saw	Natho Saw	Koila	54	10	8 th	8083449945
5	Rabish Kumar	Nokhi Mahto	Bamghat	20	2	BA	6201274632

Table: list of engineers trained on earthquake resistant building

Sr. no.	Name (Er.)	Designation	Department	Place of Posting	Mobile No.
1	Saket Kumar Raushan	AE	Road Construction Deptt.	Sheikhpura	8862982202
2	Panday Ravi Bhushan	JE	Minor Irrigation Deptt.	Sheikhpura	9304530992
3	Santosh Prasad	JE	Minor Irrigation Deptt.	Sheikhpura	9431483876
4	Akhilesh Kumar	JE	Minor Irrigation Deptt.	Sheikhpura	8292776383
5	Shashi Shekhar	JE	Water Resources Department	Sheikhpura	6200438572

Master trainer's list

S.N.	Name of Mason (Shri/Md.)	Father's Name (Shri/Md.)	Name of Village	Mobile No.
1	Achelal Sahni	Late Puna Sahni	Ghatkusumba	8271102724
2	Sudhir Sehni	Late Virendra Sahni	Ghatkusumba	7479459523
3	Rajo Sahni	Late Babulal Sahni	Ghatkusumba	7870831186
4	Sulo Sahani	Late Yodu Sahni	Ghatkusumba	8936883259

CHAPTER 7

RESPONSE PLANNING

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 Sheikhpura 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 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 ESF Plan. District EOC shall activate the ESF 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 2005, 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 her/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's 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 and 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 offices 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) Monitor, 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 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: 12 Agency for Each Emergency Support Functions and Roles to be performed

1. Communication		
Primary Agency : Telecom	Secondary Agency : Police Units and Armed forces in the area	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
Coordination of national action to ensure telecommunication support to the state and district. Coordinate the requirement of temporary telecommunications in the affected areas.	Make available police wireless networks at the affected locations. Coordinate with other networks available such as HAM radios etc. Units of armed forces can provide communication networks at the request of a competent authority.	Coordination of national action to ensure telecommunication support to the state and district. Coordinate the requirement of temporary telecommunications in the affected areas. Coordination of national action to ensure telecommunication support to the state and district. Coordinate the requirement of temporary telecommunications in the affected areas.
2. Public Health		
Primary Agency : Dept. of Health and Family Welfare	Secondary Agency : Department of Ayurveda/AYUSH	Activities for Response

Responsibility of Primary Agency	Responsibility of Secondary Agency	
<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>To network with private health service providers</p> <p>To provide for mass decontamination.</p> <p>Check stocks of equipment and drugs.</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 to the primary agency wherever needed and available.</p>	<p>Provide a systematic approach to patient care;</p> <p>Perform medical evaluation and treatment as needed;</p> <p>Maintain patient tracking system to keep a record of all patients treated;</p> <p>Mobilization of the private health services providers for emergency response.</p> <p>In the event of CNBR disaster to provide for mass decontamination of the affected population;</p> <p>Maintain a record of death and arrange for their post mortem.</p>
3. Sanitation/Sewerage Disposal		
Primary Agency : Urban Development and Rural Development	Secondary Agency: Irrigation and Public Health	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
<p>Arrange for proposal disposal of waste in their respective areas;</p> <p>Arrange adequate material and manpower to maintain cleanliness and hygiene.</p>	<p>Repair the sewer leakages immediately.</p> <p>Provide bleaching powder to the primary agencies to check & maintain sanitation.</p>	<p>Ensure cleanliness and hygiene in their respective areas;</p> <p>To arrange for the disposal of unclaimed bodies and keeping record thereof;</p> <p>Hygiene Promotion with the availability of mobile toilets</p> <p>To dispose of the carcass.</p>
4. Power		

Primary Agency : L BSPHC	Secondary Agency : CL SBPD	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
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 setsetc. ; Assess damage for national assistance.	Arrange for and to provide alternative sources of lighting and heating to the affected populations and for the relief camps.	
5. Transport		
Primary Agency : Department of Transport	Secondary Agency : BSRTC, Civil Aviation	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
Overall coordination of the requirement of transport; Make an Inventory of Vehicles available For various purposes; Coordinate and implement emergency-related response and recovery functions, search and rescue and damage assessment.	Make available its fleet for SAR, transportation of supplies, victims, etc. ; Act as stocking place for fuel oremergency operations; Making available cranes to To coordinate for helicopter Servicesetc. required for transportation of injured, SAR team, relief, and emergency Supplies.	Coordinate arrangement of vehicles for transportation of relief supplies from helipads/airports to the designated places; Coordinate arrangement of vehicles for transportation of SAR related activities.
6. Search and Rescue		
Primary Agency : Civil Defence, Home Guards, Fire and Emergency Services (Commandant HG)	Secondary Agency : SDRF, Armed, and Paramilitary forces, Police, Red Cross, VOs, Volunteers	Activities for Response

Responsibility of Primary Agency	Responsibility of Secondary Agency	
<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>108 and Red Cross to make available ambulances as per Requirement.</p> <p>SDRF and Volunteers to assist the primary agency in SAR;</p> <p>Armed and Paramilitary forces to assist civil authorities on demand;</p> <p>Police to arrange for the transportation on and post-mortem of the dead.</p>	<p>Discharge all ambulatory patients for first aid which has the least danger to health and others transported to safer areas.</p>
7. Public Works & Engineering		
Primary Agency : BIHAR PWD	Secondary Agency : CPWD, National Highways Authority of India, MES, BRO	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	

<p>Emergency clearing of debris to enable reconnaissance- clearing of roads; , Assemble casual labor;</p> <p>Provide a team carrying emergency tool kits, depending on the nature of the disaster, essential equipment such as- towing vehicles, earthmoving equipment, cranes etc.</p> <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 earthmoving equipment etc.</p>	<p>Making machinery and manpower available to the PWD and keeping national highways and other facilities in functional State.</p>	<p>Establish a priority list of roads that will be opened first;</p> <p>Constructing major temporary shelters;</p> <p>Connecting locations</p> <p>Adequate road signs should be installed to guide and assist the reliefwork;</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>
8. Information and Communication		
<p>Primary Agency : District Collectorate(AC/ADM)</p>	<p>Secondary Agency : Department of IT/NIC (DIO, NIC)</p>	<p>Activities for Response</p>
<p>Responsibility of Primary Agency</p>	<p>Responsibility of Secondary Agency</p>	
<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 the district, the state, and the Centre; Provide ready formats</p>	<p>Render necessary assistance in terms of resources, expertise to the primary agency in performing the assigned task.</p>	<p>Documentation of response/ relief and recovery measures;</p> <p>Situation reports are prepared and completed every 3-4 hours.</p>
<p>for all reporting procedures as a standby.</p>		

9. Relief Supplies		
Primary Agency : Collectorate (AC/ADM)	Secondary Agency: Department of Food and Civil Supplies	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
<p>To collect, process and disseminate information about an actual or potential disaster situation to facilitate the overall activities of all responders in assisting in an affected area in consultation;</p> <p>Coordinate activities involved with the emergency provisions-temporary shelters; emergency massfeeding;</p> <p>To coordinate bulk distribution of emergency supplies;</p> <p>To provide Logistically and resource support to local entities;</p> <p>In some instances, services also may be provided to disaster workers;</p> <p>To coordinate damage assessment and post-disaster needs assessment.</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>	<p>Support to local administration</p> <p>Allocate and specify the type of requirements depending on need;</p> <p>Organize donation (material) for easy distribution before entering the Disaster site.</p>

10. Food and Supplies		
Primary Agency : Department of Food and Public Distribution	Secondary Agency: Co-operatives Department	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	

Requirement of food and clothing for affected population; Control the quality and quantity of food, clothing, and basic medicines; Ensure the timely distribution of food and clothing to the people; Ensure that all food that is distributed is fit for human consumption	Ensuring the distribution of food supplies to the affected population through the PDS network etc.	Make Emergency food And clothingsupplies available to the population; Ensure the Provision of specific nutrients and supplementary diet for the lactating, pregnant women, and Infants.
11. Drinking water		
Primary Agency : PHED	Secondary Agency: Department of Urban Development	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
Procurement of clean drinking water; Transportation of water with minimum wastage. Special care for Women with Infants and pregnant women; Ensure that sewer pipes and drainage are kept separate from drinking water Facilities.	To assist the primary agency wherever ULB is associated in the distribution of potable water.	Support to local Administration; Water purification installation withhalogen Tablets etc.
12. Shelter		
Primary Agency : Collectorate	Secondary Agency: PWD andPanchayat Raj Dept.	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
Provide adequate and appropriateshelter to all populations;	PWD would assist the primaryagency in establishing temporary shelters of larger dimensions;	Support to local administration; Locate adequate relief camps basedon a survey of damaged houses;

<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 support in their place and need not be shifted/reallocated;</p> <p>Locate relief camps close to open traffic and transport links.</p>	<p>Department of Panchayati Raj through local Panchayats would assist the primary agency in establishing shelters of smaller dimensions.</p>	<p>Develop alternative arrangements for the</p>
13. Media		
<p>Primary Agency: Information and public relations dept.</p>	<p>Secondary Agency: Local DD and AIR</p>	<p>Activities for Response</p>
<p>Responsibility of Primary Agency</p>	<p>Responsibility of Secondary Agency</p>	
<p>To Provide and collect reliable information on the status of the disaster and disaster victims for effective coordination of relief work at the state level;</p> <p>Not to intrude on the privacy of individuals and families while collecting information;</p> <p>Coordinate with DOCs at the airport and railways for required information for international and national relief workers;</p>	<p>To assist the primary agency in the discharge of its role.</p>	<p>Use and place geographical information to guide people towards relief operation;</p> <p>Use appropriate means of disseminating information to victims of the affected area;</p> <p>Curb the spread of rumors;</p> <p>Disseminate Instructions to all stakeholders.</p>

14. Helplines		
Primary Agency : Collectorate	Secondary Agency: Department of Public Relations	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
<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 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>To assist the primary agency in performing its job effectively and provide its manpower and resources For the purpose.</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 centres.</p> <p>Setting up of the Helplines at the nodal points in the state, and providing the people the information about the Numbers.</p>
15. Animal Care		
Primary Agency : Department of Animal Husbandry	Secondary Agency: Department Of Panchayati Raj	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
<p>Treatment of animals;</p> <p>Provision of vaccination;</p> <p>Disposal of Dead Animals.</p>	<p>To assist the primary agency in performing Its role.</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>
16. Law and order		
Primary Agency : Police	Secondary Agency: Home Guards (Commandant Home Guards)	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	

Having sound communication and security plan in place to coordinate law and order issues;	To assist the primary agency by making available Manpower.	To maintain law and order; To take measure against looting and rioting;
Training to security personnel in handling disaster situations and issues related to them.		To ensure the safety and security of relief workers and material; To take specific Measures for the protection of weaker and vulnerable sections of the society; To provide safety and security at relief camps and temporary Shelters.
17. Removal of trees and fuelwood		
Primary Agency : Environment and Forest Department	Secondary Agency: Forest Corporation	Activities for Response
Responsibility of Primary Agency	Responsibility of Secondary Agency	
Removal of fallen trees; To provide fuelwood for the relief camps and public; Have adequate storage of fuelwood and arrange distribution thereof; To provide fuelwood for cremation.	To support and supplement the efforts of the primary Agency.	Arrange for timely removal of trees obstructing the movement of traffic; Arrangement of fuelwood for the relief camps and for the general public; Provide fuelwood for mass cremation etc.

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. The immediate and long term recovery plan includes the following broad activities:

Table 13: Immediate and Long Term recovery plan Activities

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

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

Table 14: Sectors specific approach and processes for Reconstruction, Rehabilitation and Recovery

Sector	Approach	Process
Public assets: • Roads and bridges	Multi-hazard resistant construction to be followed while reconstruction of public assets. For example	Detailed damages and needs assessment: Multi-sectoral/multidisciplinary teams are to be made which can do detailed damage and need assessment of the entire area.

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

		<p>Arrange for funds from the Central government, state government, and multi-lateral.</p> <p>Multi-sectoral Project Management Unit to be made.</p> <p>Monitoring and evaluation: The process of monitoring and manipulation is to be done by DDMA.</p>
Housing	<p>Multi-hazard resistant construction to be followed. Risk sensitive development will be ensured.</p> <p>Owner driven approach will be preferred.</p> <p>For example: National and State schemes like Pradhan Mantri Awas Yojna (rural/urban) and Mukhya Mantri Awas Yojna can be included in the construction of the individual houses.</p>	<p>Detailed damages and needs assessment: Multi-sectoral/multidisciplinary teams are to be made which can do detailed damage and need assessment of the entire area.</p> <p>Develop a detailed recovery plan through multi-departmental participation: Specific recovery plans through the consultative processes of different line departments are to be made.</p> <p>Arrange for funds from Central government, state government, and multi-lateral.</p> <p>Multi-sectoral Project Management Unit to be made.</p> <p>Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</p>
Economic restoration • Agriculture	<p>Multi-sectoral assessment Assess direct and indirect</p>	<p>Detailed damages and needs assessment: Multi-sectoral/multidisciplinary teams are to be made which can do detailed damage and need assessment of the entire area.</p>

	<p>losses.</p> <p>Develop sectoral strategies for thesectors that affected the poorest.</p> <p>Risk sensitive development will be ensured</p> <p>Owner driven approach v</p> <p>Provision of single window insuranceclaim system</p> <p>Promote insurance facility for all sectors through government and privateinstitutions</p>	<p>Develop a detailed recovery plan through multi-departmental participation: Specific recovery plans through the consultative processes of different line departments are to be made.</p> <p>Arrange for funds from Central government, state government, and multi-lateral</p> <p>Multi-sectoral Project Management Unit tobe made.</p> <p>Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</p>
<p>Livelihood restoration</p>		<p>Detailed damages and needs assessment: Multi-sectoral/multidisciplinary teams are to be made which can do detailed damage and need assessment of the entire area.</p> <p>Develop a detailed recovery plan through multi-departmental participation: Specific recovery plans through the consultative processes of different line departments are to be made.</p> <p>Arrange for funds from Central government, state government, and multi- lateral.</p> <p>Multi-sectoral Project Management Unit tobe made.</p> <p>Monitoring and evaluation: The process of monitoring and manipulation is to be done by SDMA.</p>

Psychosocial restoration	Provisions like training from institutes like NIMHANS, Mental hospitals, and other specialized institutes. Spiritual leaders can help the community to cope with the trauma	Arrange for funds from the Central government, state government, multilateral.
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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 as before or in fact better, following the Build Back Better (BBB) approach. This involves debris removal, restoration of public services, and provision of temporary housing. Reconstruction is 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 program may be outlined and implemented as per the requirements.

8.3 Restoration, Reconstruction and Recovery Programmed

- 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, volunteer organizations, and 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

This chapter focuses 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

The State Disaster Response Fund (SDRF), constituted under Section 48 (1) (a) of the Disaster Management Act, 2005, is the primary fund available with State Governments for responses to notified disasters. It 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

The State Disaster Mitigation Fund (SDMF) is set up at the State level. As per recommendations of the 15th Finance Commission, and as accepted by the Government of India, the SDMF consists of 20 percent of the State Disaster Risk Management Fund (SDRMF). The balance 80 percent will go to the State Disaster Response Fund (SDRF). It will 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.

9.3 Schemes and programmes supporting DRR:

(a) National Schemes for Disaster Risk Reduction

Following are a few national schemes that can be useful for Sheikhpura district in strengthening the concerned departments for the disaster risk reduction.

Table 15: National Schemes for Disaster Risk Reduction

S.N.	Name of the schemes	Actions	DRR	Activities for DRR
1.	Member of Parliament Local Area Development Scheme (MPLADS)	Each MP has the choice to suggest to the District Collectorfor, works to the tuneof Rs.5 Crores per annum to be taken upin his/her constituency. The Rajya Sabha Member of Parliament can recommend worksin one or more districts in the State from where he/she hasbeen elected.	Mitigation and prevention through creation of durable community assets based on the locallyfelt needs As per Para 2.8 of theguidelines on MPLADS, Hon'ble MPs can recommend up to a maximum of Rs. 1 crore for rehabilitation work forthe affected areas anywhere in the country in the event of calamity of severe nature.	Construction of flood control embankments Construction of common shelters for wind cyclones, Floods and handicapped Purchase of motor boats for flood and cyclone prone areas Fire tenders for Government organization Retrofitting of essential lifeline buildings, viz Govt. hospitals, Govt. Schools andpublic buildings to be used asselters in an emergency. Strengthen Early Warning Systems for effective disastermitigation. Construction of roads, approach roads, link roads, Pathways. Drinking water facility
2.	Pradhan Mantri Awas Yojna (PMAY)	Provides financial assistance to rural poor for	Providing disaster resilient housing in	Construction of disaster-resilient houses

		constructing their houses themselves	areas prone to natural calamities to reducing risk of vulnerable population in Pre-disaster situation	
3.	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Legal guarantee for one hundred days of employment in every financial year to adult members of any rural household willing to do public work-related unskilled manual work	To minimize economic vulnerability of the people Pre-disaster situation Useful for livelihood generation in Post- disaster situation	Construction of river embankments Construction of roads in remote areas Construction of multi-hazard shelters

4.	Swarnjayanti GramSwarojgar Yojna (SGSY)	Bring the assisted poor families above the poverty line by organizing them into Self Help Groups through the process of social mobilization, their training and capacity building and provision of income generating assets through a mix of bank credit and government subsidy.	To minimize economic vulnerability of the people Pre-disaster situation Useful for livelihood generation in Post- disaster situation	Creation of SHGs
5.	Pradhan Mantri Gram Sadak Yojna (PMGSY)	Good all-weather road connectivity to unconnected villages	Useful in pre as well as post disaster situation for road connectivity	Construction of roads in remote areas
6.	National Health Mission (NHM) (NRHM and NUHM)	To provide accessible, affordable and quality health care to the urban and rural	One of the most important component in Pre as well as post disaster situation to	Rapid Action Force for Emergency Medical Response Emergency ambulances Preparedness for mobile Field Hospitals

		population, especially the vulnerable groups.	provide universal access to health care facilities	
7.	Scheme for Animal Health Care in the State	Schemes under Department of Animal Husbandry	To control Animal epidemics	Vaccination drives
8.	JNURM	To improve the quality of life and infrastructure in the cities	To develop and strengthen urban infrastructure to minimize urban risk	Development of river embankments Construction of roads Storm water drainage
9.	Rashtriya Swasthya Bima Yojna	To provide health insurance coverage for Below Poverty Line (BPL) families.	Insurance and Risk Transfer	Insurance (Disaster Insurance)
10.	Pradhan Mantri Awas Yojna (PMAY)	To enable better living and drive economic growth stressing on the need for people centric urban planning and development.	Minimizing risk by constructing Disaster Resistant housing in Urban areas	Construction of disaster resistant houses
11.	Pradhan Mantri	An accidental Death and	Insurance and Risk Transfer	Insurance

	Suraksha Bima Yojna (PMSBY)	Disability insurance scheme		
12.	The Pradhan Mantri Jeevan Jyoti Bima Yojna (PMJJBY)	A term life insurance policy and it will provide life insurance coverage on the death of the policyholder.	Insurance and Risk Transfer	Insurance

(b) State Schemes for Disaster Risk Reduction

Various schemes are going on in the state of Bihar, which can be useful for Sheikhpura district in strengthening the concerned departments in disaster risk reduction.

Table 16: State Schemes for Disaster Risk Reduction

S.N .	Name of the Schemes	Actions	DR R	Activities for DRR
1.	Mukhya Mantri Seven Nischay Scheme	Ensure piped drinking water, youth and women empowerment, electrification, road and drainage, and toilet to household	Capacity building and awareness generation of youth and disaster-resilient infrastructure development	Capacity building and awareness generation
2.	Mukhya Mantri Gram Sadak Yojna (MMGSY)	Good all-weather road connectivity to unconnected villages	Useful in pre as well as post-disaster situations for road connectivity	Construction of all-weather roads in remote areas
3.	Mukhya Mantri Nishakt jan Swarojgar Yojna	The scheme extends loans for self-employment to persons with disabilities.	Livelihood generation for most vulnerable group	Livelihood generation

4.	Flood Protection Works	Construction and repair of the river and canal embankments, Providing storm water drainage system	Important in flood-prone areas to minimize flood risk	Construction and strengthening of the river and canal embankments Anti-Erosion work Village protection work
5.	Foot and Mouth Disease Control Programme	To prevent, control and contain Foot and Mouth Disease	To prevent animal epidemics during and after a disaster	Organize HS BQ (Hemorrhagic Septicemia and Black Quarter Combined) vaccination drives
6.	Samarthya Scheme	The scheme aims at physical, social, economic, and psychological rehabilitation of Persons with disabilities.	Provision of aids and appliances such as tricycles, hearing aid, calipers, etc.	Providing aids and appliances such as tricycles, hearing aid, calipers, etc. to vulnerable and disaster-affected population.
7.	Assistance to Disabled Persons for Purchase/Fitting of Aids and Appliances (ADIP Scheme)	To assist the needy disabled persons in procuring durable, sophisticated, and scientifically manufactured, modern, standard aids and appliances that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhancing their economic potential.	Provision of assistance to the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances	Providing assistance to the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances
8.	Janani Evam Bal Suraksha Yojana	Reduce maternal and neonatal mortality by promoting institutional deliveries.	To provide better health care facilities	Provide assistance to disaster-affected families

9.	National Vector-borne Disease Control Programme	Prevention and control of vector-borne diseases i.e. Malaria, Dengue, Kala-azar, Japanese Encephalitis, and Chikungunya	To prevent an epidemic	Organize community awareness Programmes and vaccination drives
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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

10.1 Monitoring/ checking through Drill

For monitoring and checking the actual preparedness and execution of Sheikhpura 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. The efficacy of the plan is checked in a comprehensive manner, especially after the 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 also when shortcomings are observed in organizational structures; technological changes, response mechanisms following reports on periodic exercises. The District Disaster Management Plan is an ongoing document and DDMA Sheikhpura along with all the line departments, nodal officials will update it every year taking into consideration the following Framework.

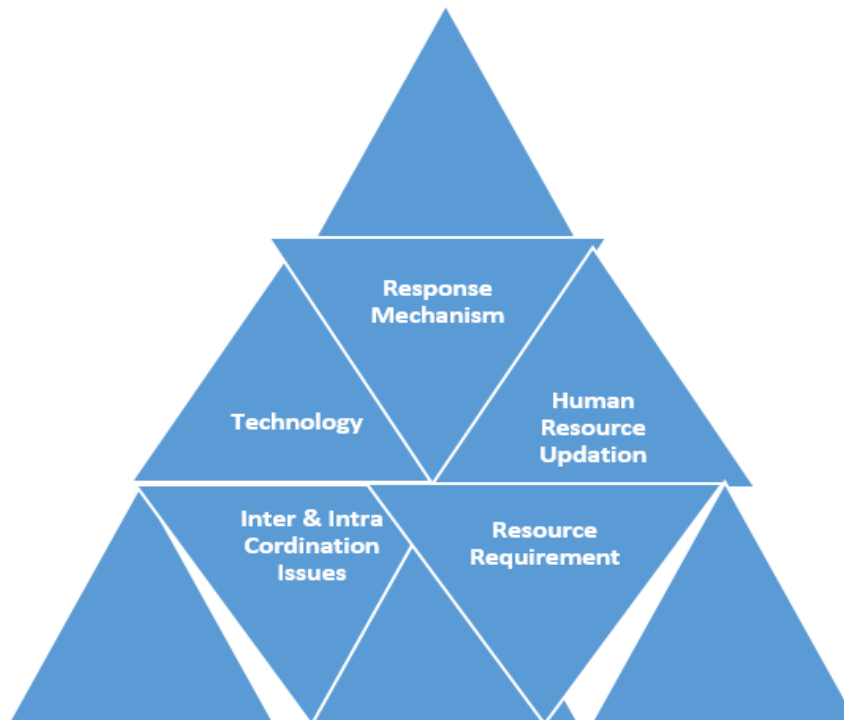


Figure 5: Framework in updating the plan

An annual review meeting for DDMP update will be organized by DM Sheikhpura. All the concerned departments and agencies would participate and give recommendations on specific issues. All concerned stakeholders, 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 Bihar State Disaster Management Authority. The whole DDMP with contact details will also be made available on the Sheikhpura District website. It will be called the District Disaster Management E-Plan.