

# **DISTRICT DISASTER MANAGEMENT PLAN OF EAST CHAMPARAN**

Prepared by District Administration,  
East Champaran

Supported by Bihar State Disaster Management  
Authority

# **District Disaster Management Plan of East Champaran**

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## Abbreviations

BRGF :	Backward Regions Grant Fund
BSNL :	Bharat Sanchar Nigam Limited
CBO :	Community Based Organizations
CE :	Chief Engineer
CEO :	Chief Executive Officer
CMC :	Crisis Management Committee
CMO :	Chief Medical Officer
CMRF :	Chief Minister Relief Fund
CSO :	Civil Society Organization
DDMA :	District Disaster Management Plan
DDMP :	District Disaster Management Plan
DDRF :	District Disaster Response Force
DM :	District Magistrate
DMT :	Disaster Management Team
DRR :	Disaster Risk Reduction
EOC :	Emergency Operation Center
ESF :	Essential Service Functions
EWS :	Early Warning System
FRT :	First Response Team
GIS :	Geographic Information System
GP :	Gram Panchayat
GPS :	Global Position System
HFA :	Hyogo Framework for Action
HRVCA :	Hazard Risk Vulnerability Capacity Analysis
HVCA :	Hazard Vulnerability Capacity Analysis
IAF :	Indian Armed Force
IAG :	Inter-Agency Group
IAP :	Immediate Action Plan
ICDS :	Integrated Child Development Services
IMT :	Incident Management Teams
IRS :	Incident Response System
IRT :	Incident Response Team
IYA :	Indira Awas Yojna
LSG :	Lower Selection Grade
MGNREGS :	Mahatma Gandhi National Rural Employment Guarantee Scheme
MLA :	Member of Legislative Assembly
MNREGA :	Mahatma Gandhi National Rural and Education Guarantee Action
MP :	Member of Parliament
MPLADS :	Member of Parliament Local Area Development Schemes
MAMSI :	Meters above mean sea level
NABARD :	National Bank for Agriculture and Rural Development
NCC :	National Cadet Corps
NDMA :	National Disaster Management Plan
NDRF :	National Disaster Response Force/Relief Fund
NGOs :	Non- Government Organizations
NREGA :	National Rural Employment Guarantee Act
NREGS :	National Rural Employment Guarantee Scheme

NRHM :	National Rural Health Mission
NSV :	National Service Volunteer
NYK :	Nehru Yuva Kendra
OEOC :	Onsite Emergency Operational Center
PDS :	Public Distribution Shop
PHC :	Primary Health Center
PHED :	Public Health Engineering Department
PMRF :	Prime Minister Relief Fund
Q&A :	Quality and Accountability
QRT :	Quick Response Team
SDMA :	State Disaster Management Plan
SDRF :	State Disaster Response Force/Relief Fund
SHG :	Self Help Group SME Small and Medium Enterprise
SOP :	Standard Operating Procedure
SP :	Superintendent of Police
SSA :	Sarva Shiksha Abhiyan
UN :	United Nations
UNISDR:	United Nations International Strategy for Disaster Reduction
WASH :	Water Sanitation and Hygiene

## Terminologies

### **Disaster**

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

### **Disaster management**

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

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

### **Vulnerability**

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

### **Capacity**

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

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

### **Disaster risk**

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

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

### **Disaster risk reduction**

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

### **Early warning system**

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

### **Evacuation**

Moving people and assets temporarily to safer places before, during or after the occurrence of a hazardous event in order to protect them.

### **Hazard**

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

### **Mitigation**

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

### **Preparedness**

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

**Prevention**

Activities and measures to avoid existing and new disaster risks.

**Reconstruction**

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

**Recovery**

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

**Rehabilitation**

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

**Resilience**

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

**Response**

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

**Retrofitting**

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

**Structural and non-structural measures**

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

## Executive Summary

On 23 December 2005, the Government of India took a defining step by piloting the enactment of the Disaster Management Act 2005, which envisaged the creation of the National Disaster Management Authority (NDMA) headed by the Prime Minister of India, State Disaster Management Authorities (SDMAs) headed by the Chief Ministers and District Disaster Management Authorities (DDMAs) headed by the District Collector/Deputy Commissioners and co-chaired by the elected representatives of local authorities to spearhead and implement a holistic and integrated approach to Disaster Management.

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

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

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

East Champaran District, Bihar being situated in Seismic Zone - V is highly vulnerable to earthquakes. During 1934 the state was severely affected by an 8.0 magnitude earthquake which resulted in untold miseries. The earthquake of 7.8 magnitude which occurred in 2015 also caused loss of human lives and properties. The district experiences several low to medium intensity earthquakes regularly. Apart from earthquakes, the district is affected by a number of floods, fire accidents, road accidents and other kinds of hazards. The topography of the area is fairly even and has fertile alluvial plains. These alluvial plains are divided into two tracts by the river Burhi Gandak (Little Gandak) with both the plains having remarkably different characteristics. The river Sikarahnna (Burhi Gandak) divides the tract from North West to South East. Other rivers reported from the district are Tilawe, Kachhna, Motia and Tiur.

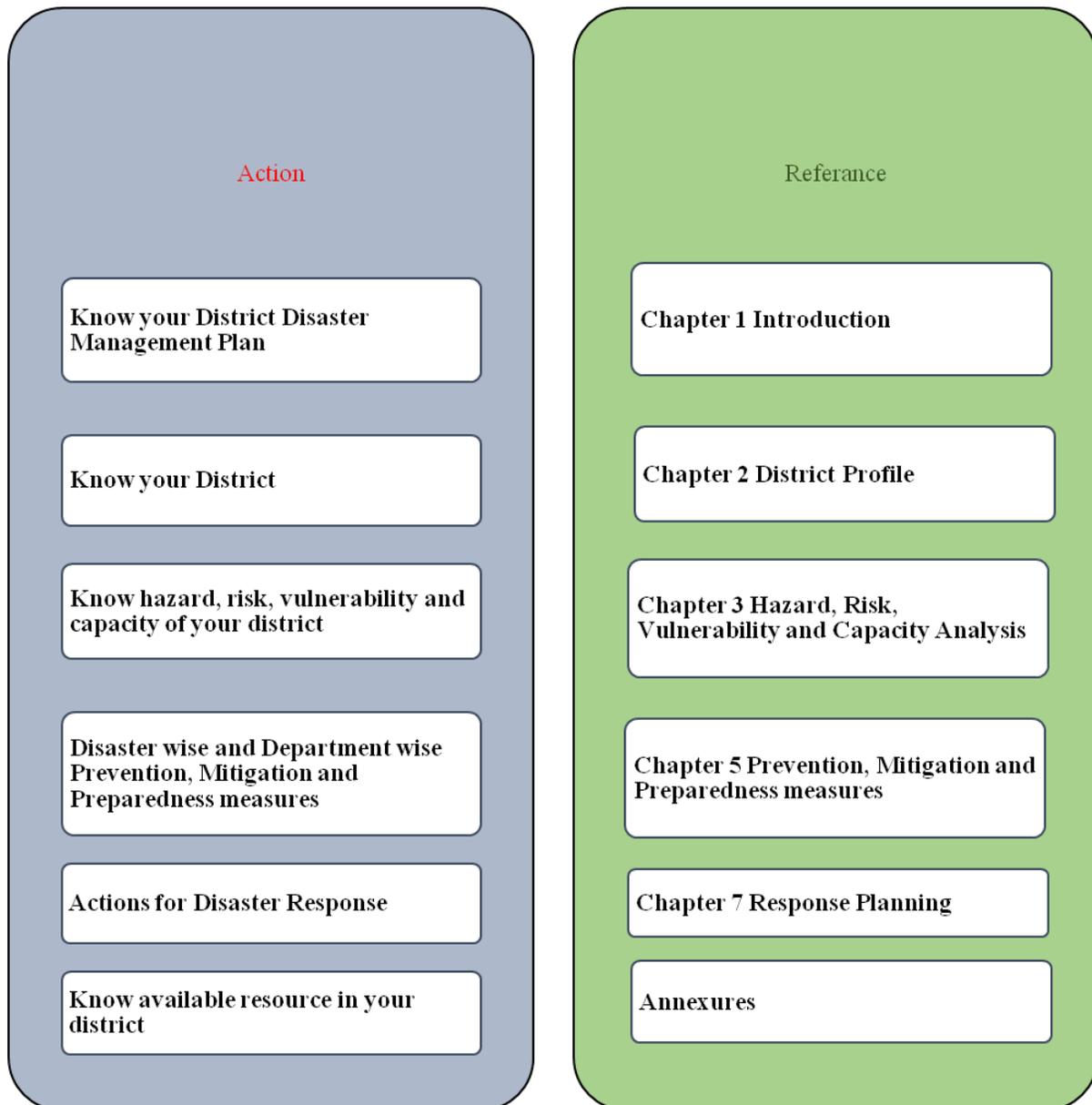
Heavy rains in the hilly terrains of Nepal flashes down, as river streams into the plains of East Champaran of Bihar causing flash floods in Northern blocks of the district that are closer to Nepal and floods in blocks towards the centre and south of the district.

Soil erosion is observed in all blocks of the district that face floods problem. It leads to loss of land to river. This is an even bigger problem as it quickly swallows land where villages' exists and resultantly, several households and their belonging are lost to it. The problem is observed more in bends of the river course. Clearly, all these points lead to the need to prepare plan for effective response of any emergencies and as mandated by the National Disaster Management Act, 2005. With this mandate, the DDMA has the responsibility for preparation of the District Disaster Management Plan by involving all stakeholders.

This document comprises of 10 (ten) chapters namely- Introduction; District Profile; Hazard, Vulnerability, Capacity & Risk Assessment; Institutional Arrangements; prevention, mitigation and preparedness measures; Capacity Building and Training Measure; Response & Relief Measures;

Reconstruction, Rehabilitation & Recovery Measures, Budget and financial resources; Monitoring, evaluation and updation of DDMP, appendix and maps.

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



## Chapter 1: Introduction

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

It was important to put a plan in place for dealing with disasters in an organized way with all the stakeholders well-aware of their role in responding to or preparing for disasters, as the district management is responsible for responding to disasters through its Incident Response Team in the disaster site, while the State and the Centre is responsible for providing extended support, guidance, external resources or additional help as required in case of any major disasters and upon the request of support from the district. Under the DM Act 2005, it is mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters. These processes are to be incorporated in the developmental plans of the different departments and preparedness to meet the disaster and relief, rescue and rehabilitation thereafter, so as to minimize the loss to be suffered by the communities and are to be documented so that it is handy and accessible to the general public.

The vision of District Disaster Management Plan is to enable disaster resilient development in East Champaran district and continuity of services essential for life and dignity of citizens during disaster and non-disaster situations.

### 1.1. Objectives:

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

- Identify areas in the district that are prone to natural and manmade disasters;
- Understand the existing vulnerabilities and coping mechanisms of the community by conducting Panchayat level assessment exercise;
- Identify the measures that ought to be taken by the district administration for prevention and mitigation of disasters;
- Build awareness among different stakeholders both at the administrative as well as the community level by directly engaging them in the process of district disaster management planning;
- Identify various existing development schemes that could be implemented for mainstreaming Disaster Risk Reduction (DRR) in development;
- Specify key areas for improving disaster resilience by awareness, training and capacity-building of the stakeholders;
- Highlight preparedness measures required to be undertaken by the district administration so as to be able to better respond to any threatening disaster situation;
- Prepare the response plan for quick and effective response; and
- Establish the reconstruction, rehabilitation and recovery plan in order to restore the vital life support systems to minimum operating standards at a first moment and work towards rehabilitating them to at least the original standards.

### 1.2. Scope of the Plan:

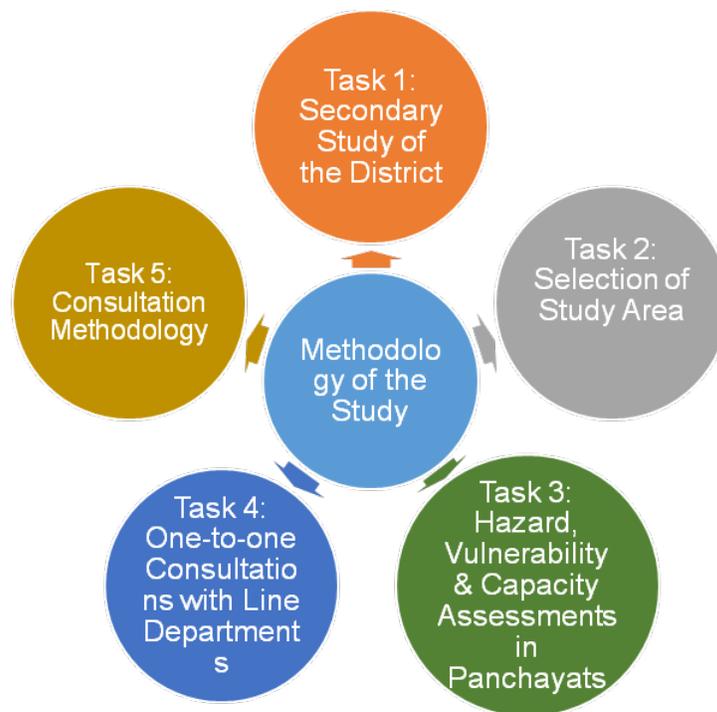
The scope of district disaster management plan is very wide, and it is applicable in all the stages of disasters (before, during, after & non disaster time). The DDMPs can help officials in taking important decisions and also provide guidance to direct subordinates in emergency. The DDMP helps in saving the precious time, which might be lost in the consultations, and getting approval from authorities. It will be the responsibility of the District Disaster Management Authority members to look after the district and sub district level institutionalization activities pertaining to the disaster management, including the periodic review of district disaster management plan and allied functions. DDMP is an operational module for district administration (owned by the DDMA) and it helps to effectively mitigate the different types of disasters with locally available persons and resources. It also

ensures a checklist for all the stakeholders for an action oriented response structure and to study their preparedness level.

### 1.3. Plan Development Methodology

The District Disaster Management Authority (DDMA) of East Champaran in partnership with AIDMI has worked to make this plan more inclusive. The term inclusive points to a wider community outreach, a greater ownership by district's administrative officers and an institution-based focus to address safety issues.

In view of this, the process was divided in two phases. The first phase mainly comprised of consultations with various stakeholders such as line departments, Block Development Officers (BDOs), members of Panchayati Raj Institutions (PRI), and vulnerable communities in order to collect the necessary information and data and understand the particularities and matters related to risk reduction in the district. It was also comprised of meetings between AIDMI and the DDMA to discuss and improve the framework of the DDMP.



### 1.4. Implementing DDMP: Main Stakeholders and their responsibilities

The DDMA will be responsible for the overall planning, coordination and implementation of plan. As per the National Disaster Management Act, 2005, The DDMA shall be responsible and accountable to:

- Coordinate and monitor the implementation of National and State policies, National, State and District Disaster Management Plans.
- Identification of areas in the district vulnerable to disasters and preventive measures against disasters are undertaken by the departments of the Government at the district level as well as by the local authorities.
- Ensure that the guidelines and response measures laid down by the National Authority and State Authority are followed by all the line departments at the district level, local authorities and other concerned authorities for prevention of disaster, mitigation of its effect.

- Review the preparedness, respond measures to any disaster or threatening disaster, and give direction to the departments or the concerned authorities for the upgradation of the measures.
- Give direction to the district authorities and local authorities to take measures for the prevention and mitigation of disaster on need.
- Monitor the implementation of DDMP and the plans prepared by the district government departments.
- Lay down guidelines to mainstream the DRR measures in the Developmental work to be followed by the government departments at district level.
- Organize and coordinate specialized training programme for different levels of officers, employees and voluntary rescue workers in the district.
- Lay down guidelines for the preparation of departmental Response Plan as per the District Response plan and ensure that each District departments prepare their own departmental response plan.
- Set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public.
- Lay down guidelines to the government departments at district level and for other district authorities to response effectively to any threatening disaster or disaster.
- Coordinate response to any life threatening hazardous situation or disaster.
- Advice, assist and coordinate government, non-government and other stakeholders engaged in disaster management.
- Coordinate, lay down guidelines and provide technical and non-technical support to the local authorities to take preventive measures and mitigation of other functions effectively.
- Identify safe evacuation sites and arrange for the basic evacuation protocol on those sites.
- Establish stockpiles of relief, rescue materials, and ensure communication systems are in order.
- Provide information to the State Authority relating to different aspects of disaster management.
- Review and update the district level response plan.

## 1.6 Plan review and updation

### Monitoring and evaluation

The monitoring and evaluation of the DDMP is an essential component for making the plan action-oriented and holistic in its approach. The purpose of the monitoring and evaluation of DDMP is as follow:

- Ensure a year-round implementation of measures and projects for disaster risk reduction;
- Check the level of preparedness of line departments and other stakeholders;
- Assess the trainings imparted for capacity building of the officers;
- Determine the adequacy of resources; and
- Verify if the coordination between departments and agencies, NGOs, and community is in place and functional.

The process is not necessarily successful if flaws are not found, but rather if the appropriate measures are undertaken in face of the necessary improvements. In view of this, the role and responsibilities of the DDMA are as follows:

- Monitor the functioning and adequacy of the resources present in the district every six months;
- Based on the analysis, the DDMA has to procure/purchase/borrow resources from the concerned authorities and replace the dilapidated and non-functioning resources using the developmental funds;
- Ensure that all the departmental plans are operational and checked by the respective nodal officers;
- Monitor that all the officers of the frontline departments are trained as per guidelines/requirements;
- Monitor that all mitigation, preparedness and response measures are properly implemented within the district; and

- Identify and ensure implementation of disaster risk reduction into developmental projects and schemes. Additionally, all heads of departments at the district level must identify suitable and relevant schemes (centrally sponsored or state-funded) which can be used for and/or linked with disaster management.

Another practical way of understanding if the plan is being followed is by conducting audits, like electrical and fire safety audits in critical buildings or audit reports about disaster risk reduction operations of various departments.

The DDMA can do the follow up with the line departments by regular meetings and the filling of certain formats.

The reasons for the review and further update of the DDMP can be categorized in two major groups: a) domestic changes, i.e. changes within the district itself, whether related to operational activities, geo-characteristics of the environment, physical resources or knowledge enhancement; b) external changes, i.e. those related to changes in regulatory requirements.

Among the internal grounds for the DDMA to review and update the DDMP, there are:

- Changes in disaster profile or district vulnerability;
- Major change in the set operational activities;
- Acquisition of new resources;
- Lessons learned from disasters faced;
- Inputs from training, mock drills/ simulation exercises;
- Names and contact details of the officers/officials who are the nodal officers or in-charge of resources that are to be updated on regular basis.

When it comes to the external changes, the plan has to be updated once every year and preferably within the first month of the new financial year in order to incorporate:

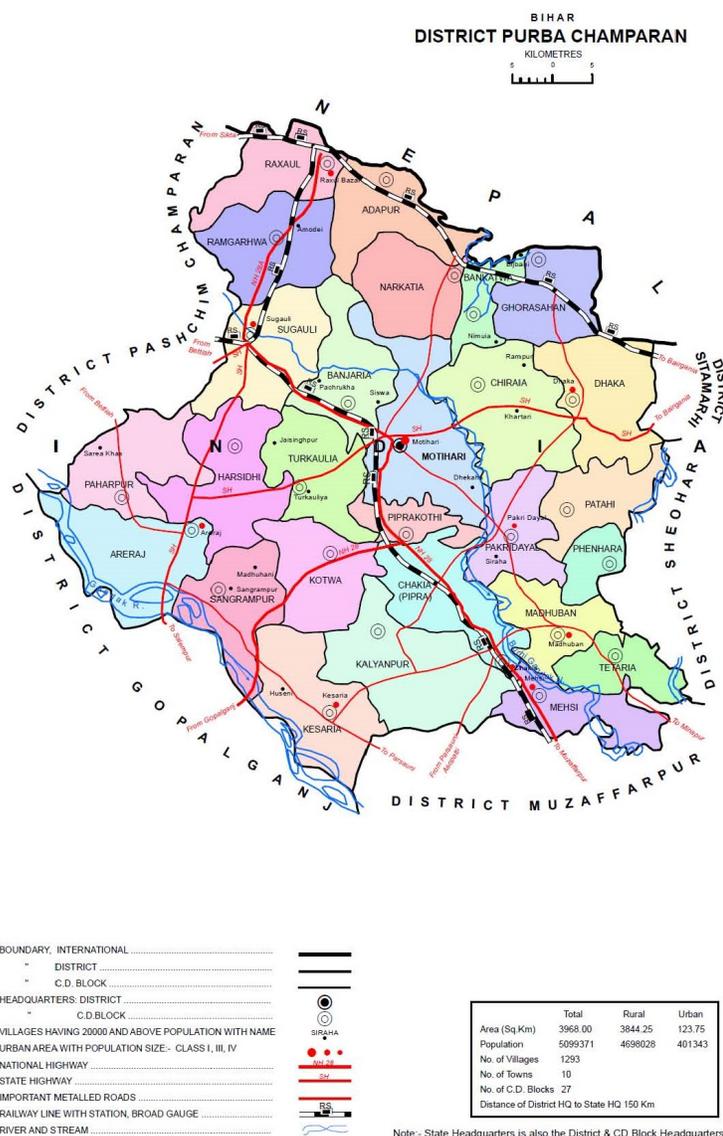
- Changes made to existing centrally and state-sponsored schemes;
- Introduction of new schemes by the central or state governments that are relevant for disaster risk reduction;
- Passing of the new acts in the parliament that have any bearing on the DDMP irrespective of any prior reference to the functions of the act;
- Change of directions by the state or any updates to the State Disaster Management Plan;
- Installation of new technology by the NDMA/BSDMA related to communication networks, knowledge management systems, early warning, etc.;
- Opening up of any relevant state/national institution or mechanism for training etc.;

Every time the DDMP is reviewed and updated, it has to be uploaded on the website of the Bihar State Disaster Management Authority (BSDMA) and the updated version should distinctly mention the major changes and newly added components so that any block or district official, community-based organisation, NDMA, can easily study the plan etc. Additionally, the updated DDMP has to be circulated to all stakeholder departments, agencies and organizations.

## Chapter 2: District Profile

### 2.1. Geographical Features

East Champaran is located at 26°16'-27°01' North Latitude and 84°30''-85°16'' East Longitude. East Champaran is surrounded by Nepal in the north, Muzaffarpur and Gopalganj in the south, Sitamarhi and Sheohar district in the east and Gopalganj and West Champaran in the west. It is situated in the plains of river gandak, burhi gandak and baghmata. East Champaran district occupies an area of 3968 square kilometer or 1532 square miles. The primary occupation of the people of the district is agriculture. In general the district exhibits a high to low land with few gentle undulations. The drainage system of the district is controlled by the river Gandak, Burhi Gandak & Baghmata & its tributaries.<sup>1</sup>



### 2.2. Climate Weather Profile

In summer the climate of the district is hot and dry but winter months are quite cool and pleasant. Winter comes towards the middle of October after the rains are over. The temperature begins falling and January is the coldest month of the year with mercury falling to about 0°C. The blowing of westerly wind accompanied by dust storms about the middle of March marks the beginning of hot weather. The mercury starts shooting upward and May is the hottest month of the year when the maximum temperature goes up to 46°C. The summer continues till the end of June when the onset of rains brings the much awaited relief and the temperature falls, though the humidity is still high the rise in humidity often makes the heat only more oppressive during the rainy season which lasts till the end of September. From November onwards to February the

<sup>1</sup>Brief Industrial Profile of EAST CHAMPARAN District

district has a pleasant climate. The district also gets some rain in winter season.<sup>2</sup>

The district receives a normal rainfall of 1241.6 mm. The economy of the district mainly depends upon agriculture. It has seen several ups and downs perpetuated by Baghmati in the form of flood, famine and drought. Flood and drought has remained the regular feature of the area.<sup>3</sup>

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	15.9	17.8	23.4	28	30.5	30.2	28.9	28.9	28.4	26.3	21	17
Min. Temperature (°C)	9	10.3	15.2	20.2	24.3	25.7	25.3	25.8	25	21.3	13.9	9.7
Max. Temperature (°C)	22.9	25.4	31.6	35.8	36.7	34.7	32.6	32.1	31.9	31.4	28.2	24.3
Avg. Temperature (°F)	60.6	64.0	74.1	82.4	86.9	86.4	84.0	84.0	83.1	79.3	69.8	62.6
Min. Temperature (°F)	48.2	50.5	59.4	68.4	75.7	78.3	77.5	78.4	77.0	70.3	57.0	49.5
Max. Temperature (°F)	73.2	77.7	88.9	96.4	98.1	94.5	90.7	89.8	89.4	88.5	82.8	75.7
Precipitation / Rainfall (mm)	18	11	13	18	46	203	350	287	201	46	5	2

Between the driest and wettest months, the difference in precipitation is 348 mm. The average temperatures vary during the year by 14.6 °C.

### 2.3. Culture and Historical Perspective

From epic time till today, the history of Champaran has been glorious and important. It is mentioned in the Purana that the devotee Dhruv, son of King Uttanapada, here had done terrible penance for attaining knowledge at the place called Tapovan. On the one hand, the land of Champaran is sacred due to the Goddess of Sita, on the other hand, the Satyagraha of Gandhiji in modern India is an invaluable page in the history of Indian independence. At the time of King Janak, this was part of the Tirahut kingdom. People believe that Jankigharh, also known as Chanchigarh, was the capital of King Janak's Veeveda state. Which later became part of the Vaishali empire in the 6th century BC. Lord Buddha had given his sermons here, in memory of which in the 3rd century BC, Priyadarshi Ashok made pillars and constructed stupas. After the decline of the Gupta Dynasty and the Pala Dynasty, the entire Champaran region, including Mithila, became subject to the Karnat dynasty. Local satraps were directly ruled by Muslims until and after this. Mahatma Gandhi came to Motihari in April 1917 on the call of Prince Shukla, a rayat of freedom and freedom fighter of India during the freedom struggle, and successfully used the first successful experiment of Satyagraha in protest of the three acrimonious cultivation of the Nil crop. This was the beginning of the new phase in the fight for independence. Later, Bapu came here many times. The British had made Champaran an independent unit in 1866, but in 1971 it was divided into Eastern and Western Champaran.<sup>4</sup>

#### a) Food Habits

In the morning breakfast people use to have Dahi Chura, Poha, Chana Ghugni, Sattu parathas are served with aloo bhujia. The most common food habits in the district East Champaran include rice, Dal, Chapaties, vegetables, non-vegetarian items, items of gram flour.

#### b) Dressing Style

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

#### c) Major Festivals

The majority of people in Bihar are Hindu, so the traditional Hindu festivals are observed in the region, as Holi, Saraswati Puja, Durga Puja or Dusserah, Deepavali, Bhaiya Dooj, etc. Despite that,

<sup>2</sup> Ibid.

<sup>3</sup> <https://en.climate-data.org/asia/india/bihar/motihari-52315/>

<sup>4</sup> <https://eastchamparan.nic.in/history/>

East Champaran has a peculiar place in the culture of Bihar; it is a meeting place of Hindu and Islamic culture and thoughts. Therefore, with the major festivals of Hindu's like Chhath Puja, Makar Sankranti, Holi, Month of Ramadan and Eid has also been celebrated across the district. Apart from this Sarwani mela is held in the month of Sarwan (August) in Areraj also one of the key attraction of people.

#### List of Prominent Heritage sites and Hazard Risk

Serial No.	Description	Places/Centres/ Spots	Hazard Risk
1.	Kesaria Baudh Stup , Kesaria	Rising to a height of 104 feet and much reduced than its original height, it is one foot taller than the famous Borobodur Stupa in Java, a world heritage monument. The Kesaria Stupa was 123 feet tall before the 1934 earthquake in Bihar. In the halcyon days when Buddhism thrived in India , the Kesaria Stupa was 150 feet and Borobodur stupa 138 feet tall according to A.S.I. report. At present the height of Kesaria in reduced to 104 feet and Borobodur to 103 feet.	Stampede (Buddh Purnima)
2.	Someshwar Shiv Mandir, Areraj	Areraj is a holy city of North Bihar which is 28 Km. south West from Motihari linked with pucca road. The famous Someshwar Nath Mahadev Temple is age old which attracts lakhs of pilgrims from other districts as well as Nepal on the occasion of Shrawani Mela (During July-August). Areraj a village has developed up to town and now it is the Headquarter of Areraj Subdivision. Also at Areraj lies an Ashokan pillar attracting tourists throughout the year.	Stampede and Fire (Shravan month and Shiv Ratri)

Table 1 Showing heritage site in East Champaran district

#### 2.4. Demography

Description <sup>5</sup>	Number and %
Number of Villages	1293
Number of Towns	10
Number of Households	979230
Institutional	1939
Houseless	347
Population	5099371
Males	2681209
Females	2418162
Child Population (0-6 Age)	
Area (in sq. Km.)	3968
Density of Population (Persons per sq. Km.)	1285
Sex Ratio	902
Literates	2276957 (55.79%)

<sup>5</sup>Government of India. Ministry of MSME. Brief Industrial Profile of East Champaran district

Scheduled Castes	649726 (12.69%)
Scheduled Tribes	12461 (0.24%)
Workers	1737539 (34.07%)
Main Workers	1132789
Marginal Workers	604750
Non-Workers	3361832
Cultivators	349032
Agricultural Labourers	1057417
Workers in household industry	46164
Other Workers	284926

Table 2 Showing demography of East Champaran District

### Houseless Population

In 2011, total 347 families live on footpath or without any roof cover in Purbi Champaran district of Bihar. Total Population of all who lived without roof at the time of Census 2011 numbers to 1,647. This approx 0.03% of total population of Purbi Champaran district.

### Disabled Population by type of Disability, Age and Sex<sup>6</sup>:

Age-group	Total number of disabled persons	In seeing	In Hearing	In Speech	In Movement	Mental Retardation	Mental Illness	Any Other	Multiple Disability
<b>Total</b>	111705	34696	27231	8099	13044	3912	1259	18746	4718
<b>0-4</b>	11219	4120	2928	253	691	292	44	2511	380
<b>5-9</b>	14745	4947	3858	1295	1040	514	115	2310	666
<b>10-19</b>	23123	7086	5433	1895	2619	1069	279	3606	1136
<b>20-29</b>	15378	4468	3746	1303	1868	653	234	2594	512
<b>30-39</b>	14463	4357	3614	1187	1524	515	223	2600	443
<b>40-49</b>	10969	3127	2783	801	1400	371	157	1931	399
<b>50-59</b>	8177	2451	1889	630	1280	235	95	1273	324
<b>60-69</b>	8357	2610	1825	505	1557	177	73	1186	424
<b>70-79</b>	3585	1115	755	144	790	60	27	427	267
<b>80-89</b>	956	282	209	29	203	20	6	90	117
<b>90+</b>	342	88	81	20	48	3	4	57	41
<b>Age Not Stated</b>	391	45	110	37	24	3	2	161	9

Table 3 Table showing Disabled Population in East Champaran District

## 2.5. Administrative Structure

The district headquarter is Motihari which is well connected to different parts of the state by all weather roads and rail. It is about 170 Km from Patna by road. Location of the district is of strategic and historical importance. The district has been the centre of communication for the border areas of Nepal. It has six sub-divisions with 27 blocks.

<sup>6</sup>District Census Handbook East Champaran district 2011.

Particulars	Unit	Statistics
<b>Geographical Data</b>		
Latitude	Degree( <sup>o</sup> ), Minutes( <sup>''</sup> )	26°16' and 27°1' North
Longitude	Degree (O), Minutes( <sup>''</sup> )	84°30' and 85°16'' East
Geographical Area	Sq Km	3968
<b>Administrative Units</b>		
Sub divisions	Nos.	6
Tehsils	Nos.	27
Police Stations	Nos.	42
Panchayat Samitis/ Blocks	Nos.	27
Nagar Parishad	Nos.	2
Nagar Panchayat	Nos.	7
Gram Panchayats	Nos.	405
Villages	Nos.	1293
Towns	Nos.	10
Assembly Constituencies	Nos.	12
Population	Nos.	5099371
<b>Roads</b>		
National Highway	Km	94.00
State Highway	Km	131.20
Main District Highway	Km	408.53
<b>Public Health</b>		
District Hospitals	Nos.	1
Referral Hospitals	Nos.	1
Sub-divisional Hospitals	Nos.	3
Community Health Centers	Nos.	1
Primary Health Centers	Nos.	27
Additional Primary Health Centre	Nos.	54
Sub Health Centers/ Health Sub Centre	Nos.	327
<b>Banking</b>		
Commercial Bank Branches	Nos.	141
Regional Rural Bank Branches	Nos.	86
Co-Operative Bank Branches	Nos.	11
PLDB Branches/ Land Development Bank Branches	Nos.	0
<b>Education</b>		
Primary Schools (Class I to V)	Nos.	1972
Middle Schools along with Primary Classes (Class I to VIII)	Nos.	1439
Middle Schools (Class VI to VIII)	Nos.	8
Secondary & Senior Secondary Schools (Class I to X/XII, VI to X/XII)	Nos.	143
Colleges (Arts Fine Arts, Social Work, Science & Commerce)	Nos.	8
Engineering Colleges	Nos.	1

Table 4 Table Showing Administrative Structure in East Champaran District

## 2.6. Natural Resources

The topography of the area is fairly even and has fertile alluvial plains. These alluvial plains are divided into two tracts by the river Burhi Gandak (Little Gandak) with both the plains having remarkably different characteristics. The river Sikrahna (Burhi Gandak) divides the tract from North West to South East. The northern portion of the tract is of older alluvium and has low land area which is suited for cultivation of kharif but is unsuitable for rabi crops. The southern portion of the tract has recent alluvium deposits of the river Gandak which has changed its course moving further west. This southern portion is suited for cultivation of both Kharif and Rabi crops. The area of this region is characterized by stretches of upland varying in places by large marshy depressions known as 'Chaur'. The major slope of the area is due south-east.

The river Gandak or Sikrahna (Burhi Gandak) is the most important river in the district from North West to South East. In the northern part of its course in the district, the river Gandak is known as Sikrahna and in the southern part of its course it is known as Burhi Gandak. The river Gandak has often changed its course in the past causing floods in many parts of the district. An abandoned channel of this river, called Dhanauti, has stopped to flow because of silting up of its off-take. Presently, this channel is a sluggish drainage channel with many loops before joining with river Sikrahna at Pakridayal.

The other important rivers in the district are Lal Bakeya and Bagmati. The river Lal Bakeya originates in the foot hills of Nepal and flows through the district in southern direction forming the eastern boundary of the district with Muzaffarpur before meeting river Bagmati near the village Khori Pakur.

Other rivers reported from the district are Tilawe, Kachhna, Motia and Tiur.

## 2.7. Occupation

### Agriculture and Livestock

The economy of the district mainly depends upon agriculture. The major crops of the district are Paddy (Basmati Rice), Mustard, Sugarcane, Jute, Lentils and Vegetables. The irrigation in the district is mostly influenced by the presence of canal system in the northern and eastern parts. This has greatly improved the irrigation facilities in the district.

Livestock is very important in a district like East Champaran with a predominantly agricultural economy. The statistics of livestock of the district indicate that the number of cattle is high in the district. The people of the area have not taken to poultry farming on large scale.<sup>7</sup>

Land utilisation		
Total Area	Thousand Hectare	431.70
Forest cover	Thousand Hectare	0.10
Barren and Uncultivable Land	Thousand Hectare	8.10
Land put to Nonagricultural Use (Land Area & Water Area)	Thousand Hectare	77.30
Cultivable Waste	Thousand Hectare	0.30
Permanent Pastures	Thousand Hectare	0.40
Land under Tree Crops	Thousand Hectare	27.10
Fallow Land (excluding Current Fallow)	Thousand Hectare	3.00

<sup>7</sup> Ibid.

Current Fallow	Thousand Hectare	43.30
Total Uncultivable Land	Thousand Hectare	159.60
Net Sown Area	Thousand Hectare	272.10
<b>Livestock &amp; Poultry</b>		
<b>Cattle</b>		
Cows	Nos. (in ,,000)	360
Buffaloes	Nos. (in ,,000)	340
<b>Other Livestock</b>		
Goats	Nos. (in ,,000)	725
Pigs	Nos. (in ,,000)	16
Sheep	Nos. (in ,,000)	2
Poultry	<b>Nos. (in ,,000)</b>	684

Table 5 Table Showing Agriculture and Livestock Details in East Champaran District

### **Fishery**

Fishery development scheme has been undertaken by the Fisheries Department. The demand for fish is increasing and a number of nursery tanks are in use.

### **Industry**

East Champaran has a strong agricultural background. The pearl button Industry at Mehsi, only one of its kind in the whole of the country. Which had earned fame in the world. East Champaran has a large potential for fishery development. It has a large number of tanks and mans (lakes). An ambitious plan for fish development started in 1995 by the central Government. The world Bank financed Rs. 19 crore for fisheries development schemes in Motijheel and Kararia Jheel in Motihari town and its adjoining area to make the lakes suitable for fish production.

### Chapter 3 Hazard, Risk, Vulnerability and Capacity Analysis

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

HVCA of the district has been done to do a comprehensive analysis of various hazards for all 27 blocks of the district that are having disastrous effect because of prevailing vulnerabilities. The study is done to understand the type of hazards the district is prone to, their history and impact on the area, people and infrastructure that are exposed to these hazards. The vulnerabilities cover various aspects which include social, infrastructural, economic, environmental, attitudinal/behavioural and political, only increases the effect of these hazards, while the capacity assessment highlights the capability and availability of resources with the district administration and the community to reduce disaster risks and to organize effective response.

#### Hazard Assessment Based on Community/Field Consultations

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

Hazards Timeline (HVCA)													Blocks
Hazard	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Flood	L	L	L	L	M	H	H	H	H	M	L	L	Areraj, Harsiddhi Sangrampur Madhuban, Piprakothi, Adapur, Banjaria, Bankatwa, Chauradano, Chiraiya Dhaka, Kesariya, Mehsi, Motihari, Ghorasahan, Phenara Pakri Dayal, Patahi Ramgarhwa, Raxaul Sugauli, Turkauliya Tetaria
Earthquake	H	H	H	H	H	H	H	H	H	H	H	H	All Blocks
Drought	M	M	M	H	H	M	L	L	L	M	M	M	Totally Rained District depends on rainfall
Fire	H	H	H	H	H	H	H	M	M	M	H	H	Hypersensitive-

													Dhaka, Patahi, Areraj, Kalyanpur, Raxaul, Sugauli
Heat wave	L	L	L	M	H	H	H	H	H	M	L	L	All Blocks
lightning	L	L	L	L	L	M	M	H	H	M	L	L	Hypersensitive- Madhuban, Mehsi, Chauradano, Paharpur, Pakridyal
Drowning	L	L	M	M	M	H	H	H	H	H	M	L	Hypersensitive- Banjaria, Chiraiya, Sugauli, Sangrampur, Areraj, Pakridyal, Patahi, Motihari
Road Accident	H	H	H	H	H	H	H	H	H	H	H	H	Hypersensitive- Chakia, Piprakothi, Sugauli, Banjaria, Motihari
Legend	H	High probability			M	Moderate probability			L	Low probability			

### 3.1 Hazard Profile

#### 3.1.1. Floods:

Occurrences	Reasons	Damages
Every year during monsoon months, i.e., June to September. However, the coverage and extent of damage varies every year depending on the intensity of Rain in North Bihar and Nepal.	The topography of the area is fairly even and has fertile alluvial plains. These alluvial plains are divided into two tracts by the river Burhi Gandak (Little Gandak) with both the plains having remarkably different characteristics. The river Sikarahna (Burhi Gandak) divides the tract from North West to South East. Other rivers reported from the district are Tilawe, Kachhna, Motia and Tiur.	Floods: Floods/flash floods are observed in varying intensity almost every year. Depending on that, the coverage area of the floods also changes. Year 2007 saw the most number of blocks getting affected, i.e., 27. It affected over 37 lac in which as many as 1195 villages were surrounded by water.
	Heavy rains in the hilly terrains of Nepal flashes down, as river streams into the plains of East Champaran of Bihar causing flash floods in Northern blocks of the district that are closer to Nepal and floods in blocks towards the centre and south of the district.	<b>Soil Erosion and Displacement:</b> It is observed in case of either floods (not flash floods) or soil erosion cutting land of village settlements. However, soil erosion does not always lead to major displacement unless settlements right next to the river course see major erosion. The displacement observed is generally within the panchayat, generally by re-establishing villages on agricultural lands.
	This overflow of water out of its river course into the agricultural fields or into the villages is also	<b>Agricultural Productivity:</b> Loss in productivity is observed due to two factors. One, waterlogged fields that

<p>attributed to another factor, i.e., deposition of silt on the river bed. Silt - mud or small rocks - that river carries is created by rubbing of river with the hill stones and as it flows downstream, it continues depositing it into the plains.</p>	<p>rather prevents farmers from doing agriculture. This has also become a major cause of migration in East Champaran during monsoon months. Second, mud on the fields after the deposition of water hampers farmland productivity and often turns land useless.</p>
<p>This over the years has decreased the depth of the riverbed and as a result, lot of river bed almost level with the land. This becomes the cause of floods even with marginal river water rise.</p>	<p><b>Road Infrastructure:</b> Several roads are affected every year due to floods. Brick soling roads constructed under MNREGA scheme gets easily damaged by floods.</p>
<p>Soil erosion is observed in all blocks of the district that face floods problem. It leads to loss of land to river.</p>	
<p>This is an even bigger problem as it quickly swallows land where villages' exists. Several households and their belonging are lost in it and the problem is observed more in bends of the river course.</p>	

Table 6 Table Showing Floods Detail of East Champaran District

Please refer Annexure 1 for block wise flood vulnerability Maps

### 3.1.2. Drought



## DEPTH TO WATER LEVEL (MAY - 2011)

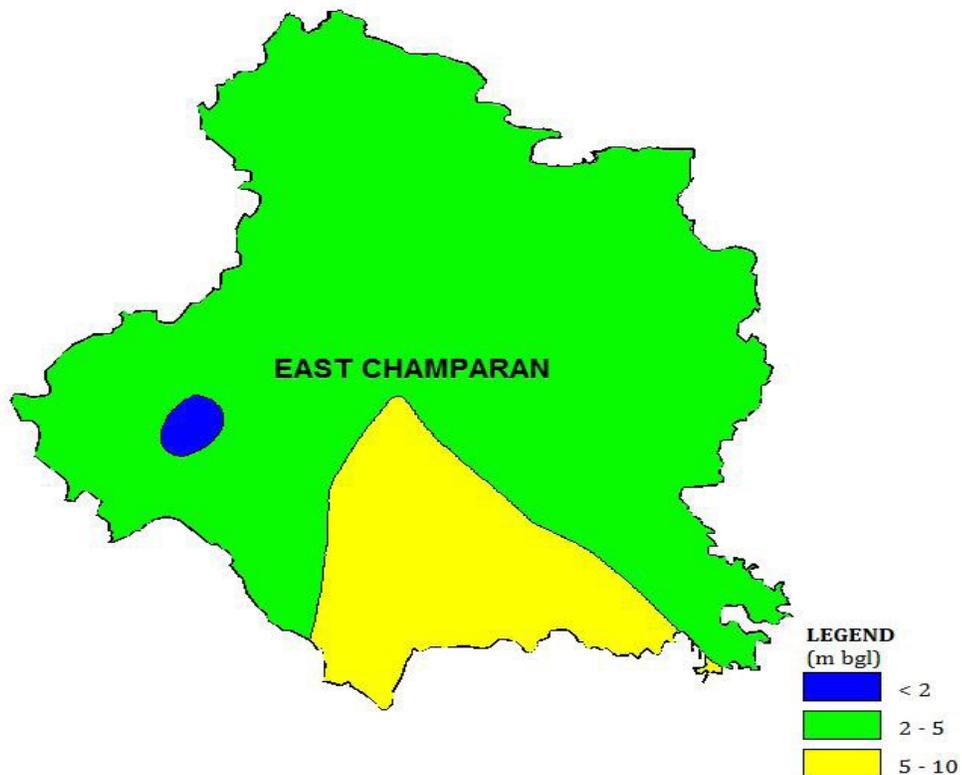


Figure 1Pre- monsoon 2011 depth to water level contours in East Champaran district, Bihar

Occurrences	Reasons	Damages
Droughts are not sudden disaster but a gradual phenomenon. So far, it is unusual in this part of Bihar. However, the affects can be felt particularly between February to May when water table dips below. The affects are felt in both Kharif and Rabi season in case of a failed monsoon.	In this part, droughts are mostly meteorological in nature owing to where kharif crop does not receive sufficient rainfall for good production during monsoon season.	Crop failures have been observed that increases need for immediate finances and that has often-lead people to sell cattle.
	Meteorological droughts are declared when total rainfall in the monsoon months of June to September is less by more than 25% of the long-term average. In later months, ground water is seen to dip to levels where even drinking water becomes available in several hand pumps at varying depth, apart from unavailability or less availability of water for irrigation purposes while cropping in rest of the year.	<b>Animal health</b> is particularly seen to dip due to insufficient fodder availability or high market prices of in times of crop failure.
	In addition, insufficient reach of irrigation channels reduces the irrigation potential and only increases dependency on rain fed agriculture.	<b>Diminished animal productivity:</b> Diminishing health coupled with insufficient availability of fodder is also seen to reduce milk production.
		<b>Impact on agro-based industries:</b> Decrease in agricultural output affects the industry mainstay of East Champaran, agro-based industries such as Rice and Sugar mills.

Table 7 Table Showing Drought Detail of East Champaran District

**Please refer Annexure 1 for block wise Drought vulnerability Maps**

### 3.1.3. Fire:

Occurrences	Reasons	Damages
A man-made disaster, it happens every year mostly in the months of March to May.	Houses made of Thatch are very common in the district that makes houses vulnerable to fire. While it is difficult to predict and prevent natural hazards, manmade hazards can be avoided or mitigated through preventive actions	Every year there are many houses burnt in various parts of the district. In October 2017, approx. 20 houses were burned due to unidentified reason in Pokhra Tola.
	According to the National Fire Advisory Committee (NFAC), 1 fire station is required per 50,000 persons. As per which there is 1 fire stations in East Champaran presently, but as the population in urban area is growing rapidly, one more fire station is necessity. The scenario in East Champaran is far below the standard. The present system needs to be augmented with more manpower and fire tenders.	On November 2018, a fire breakout at SFC godown in Patahi. Around 1000 begs of wheat were burned.
	The National Fire Advisory Committee recommends a water hydrant every 3 km. However, the reason for catching fire is often the carelessness on part of the community because of:	On April 2014, a fire breakout in Goriya Gaon under sikarganj police station and around 19 house were got burned.
	<ul style="list-style-type: none"> <li>a) Not ensuring firewood is completely extinguished after cooking.</li> <li>b) Not ensuring cigarette or bidi stubs are completely extinguished while throwing.</li> <li>c) Extreme heat generated by Threshing machine.</li> <li>d) Blowing of heavy winds, particularly in the months of February to May. Often, this is the catalyst behind catching of fire and the extent of damage.</li> </ul>	
	Moreover, owing to high population density, houses are constructed close to each other and dry fodder and dung cakes are stored near the huts. As a result, an outbreak in one house quickly spreads to other houses.	

Table 8 Table Showing Fire Detail of East Champaran District

#### Cases in year 2021-2022:

Total Case Reported	Death/Injured	Most Affected Block
72	Human- 04 (death) Animal- 23 (death) Human- 08 (Injured)	Dhaka- 06 case, Patahi- 06 case, Areraj- 06 case, Kalyanpur- 08 case, Raxaul- 06 case, Sugauli- 05 case

*Please refer Annexure 1 for block wise Fire vulnerability Maps*

### 3.1.4. Earthquake

Occurrences	Reasons	Damages
Unlike several other hazards, there is no pattern of occurrence of Earthquakes. The last time any major earthquake struck this region was in the year 2015 at around 7.8 on Richter scale.	Movement of plates beneath the earth's surface near Indo - Nepal border on the Nepal side.	There is no specific record of damages and deaths in this region; however, communities are ever of consequences of earthquake.

Table 9 Table Showing Earthquake Detail of East Champaran District

**Please refer Annexure 1 for block wise Earthquake vulnerability Maps**

### 3.1.5. Road Accidents

Occurrences	Reasons	Damages
Unlike several other hazards, there is no pattern of occurrence of Road Accidents. The last major accident took place on May, 2018 which killed 20 people and injured 13 on NH 28 under Kotwa Police station. The occurrences are more likely in the morning, evening and night time specially in winter and rainy seasons.	The common reasons and causes behind the accidents in East Champaran districts are; <ol style="list-style-type: none"> <li>1. Not following traffic rules;</li> <li>2. Sharp and Blind curves;</li> <li>3. Bridges lacking of protective measures;</li> <li>4. Direct Connection of Rural roads to NH without speed breakers;</li> <li>5. Excess loading of good in vehicles;</li> <li>6. Uneven and broken roads and bridges in rural areas;</li> </ol>	July 2018 Three people were killed and one other was injured in a road mishap near Gangapipar-Partapur village under Chiraiya police station area in East Champaran. June 2018 Least six passengers were injured, one of them seriously, after a Muzaffarpur-bound bus from New Delhi skidded off the road and fell into a ditch in East Champaran. June 2011 Five people were killed and 12 others injured when a bus carrying them overturned near Baryarpur village under Turkoliya police station in East Champaran district

Table 10 Showing details of Road accidents

**Data of Last two year (2020-2022):**

No. of Incident Reported	Death/Injured	Black Spot (Police Station)
82	Death- 67 Injured- 71	<ol style="list-style-type: none"> <li>1. Pucca from Banarjhula Chowk to Public Public School (Chakia)</li> <li>2. Mithbanbari Chowk (Peeprakothi)</li> <li>3. Jeevdhara Chowk (NH-28) (Peeprakothi)</li> <li>4. Chhaprabahas Petrol Pump(NH-28) (Sugauli)</li> <li>5. Vanaspati Mai Sthan (NH-28A) (Sugauli)</li> <li>6. Near Rimjhim Hotel (NH-28A) (Sugauli)</li> <li>7. Tajbabu Chowk (NH-28) (Sugauli)</li> <li>8. Khairwa Bridge (NH-28) (Banjariya)</li> <li>9. Bankat (NH-28) (Mufsil)</li> <li>10. Chandrahiya (Mufsil)</li> </ol>

		11. Opposite Harsh Hospital (Mufsil) 12. Bairiya Devi Mai Sthan (Mufsil)
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### 3.1.6. Boat Capsizing

Occurrences	Reasons	Damages
Every year during monsoon months, i.e., June to September. The accident does take place because few roads gets cut off and people need to use the water transportation.	The common reasons and causes behind the boat capsizing in East Champaran districts are; <ol style="list-style-type: none"> <li>1. Not following rules suggested by district administration;</li> <li>2. Loading passengers beyond capacity of Boats;</li> <li>3. Weak and damaged boats in use;</li> <li>4. Unavailability of life saving equipments on boats;</li> <li>5. Carelessness of boat drivers and passengers;</li> </ol>	August 2007 six persons including three women drowned in the Gandak River. October 2011 Three persons drowned when a small boat sank in Machowaman lake. June 2018 Three women were drowned and two others went missing after a boat capsized in Gandak river near Narayanghat. September 2011 At least 40 people were feared drowned today when a boat carrying them capsized midstream in the river Burhi Gandak near Semra Ghat in East Champaran district.

Table 11 Showing details of Boat Capsizing

### 3.1.7. Snake Bite

Occurrences	Reasons	Damages
<b>Snake bite are of unusual occurrence.</b>	Specific reasons can't be unearthed properly. Snake bite usually occurs when they are threatened, provoked or in search of rodents or lesser green habitat. Regular pest control in specific or probable areas can play a vital role in saving human lives. Because of reduction in the size of green areas, the snakes have less place to stay safe and secure. Unawareness of people towards treatment of snakebites, few people still believes in magic for treating snake bites.	In July'16 student died due to snake bite in Bevarai Khas village under turkauliya PS.  Aug'17 child died due to snake bite in Persauna village.

Table 12 Showing details of snake bite

### 3.1.8. Drowning

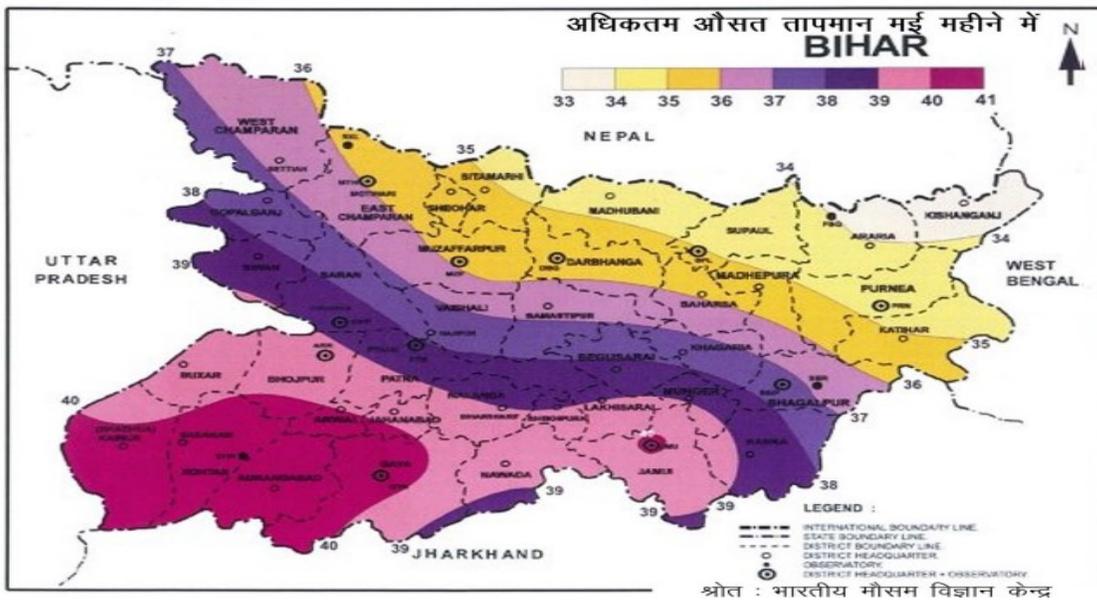
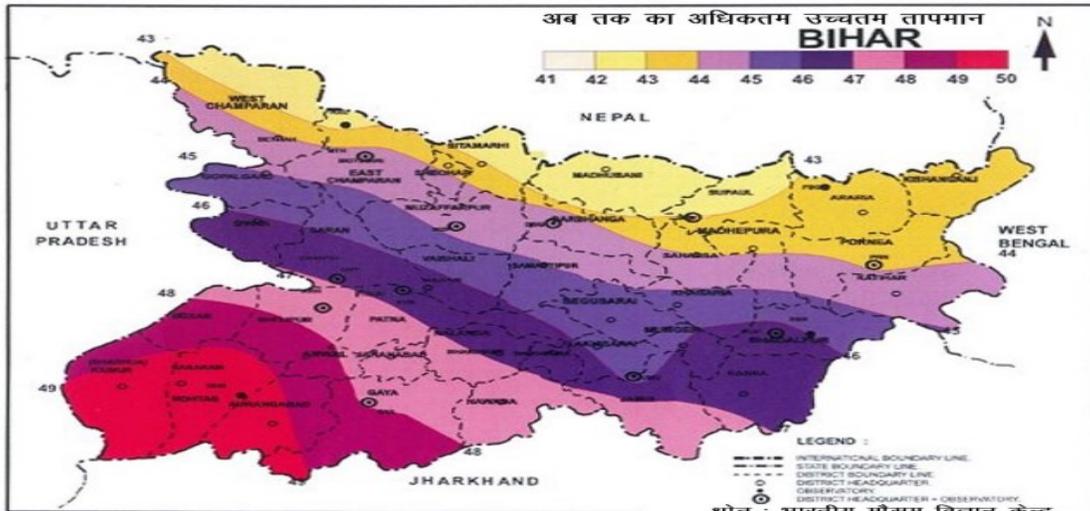
Occurrences	Reasons	Damages
It has been seen that drowning case is increasing robustly in east champaran in compared to few years. mostly it comes in light in between june and september. most of the cases are reported due to drowning in pond and river.	<ol style="list-style-type: none"> <li>1. To be careless near a canal, pond, river or waterfall.</li> <li>2. Accessible access to places of danger without any hindrance, without any information and security.</li> <li>3. Lack of monitoring and supervision.</li> <li>4. Lack of knowledge of rescue skills such as swimming etc. or other methods of rescue.</li> <li>5. The inability of the group/persons present there to protect the person during drowning/distress.</li> <li>6. Not to swim.</li> <li>7. Not paying attention to children.</li> <li>8. Lack of inspection in the course of boat operations.</li> </ol>	On 24/08/2021, Ramgarhwa block, five girls died due to Drowning while choosing snails.

#### Data of last three year (2019-2022)

No. of death	Most vulnerable block	Victims Age
514	Banjaria, Chiraiya, Sugauli, Motihari, Areraj, Sangrampur	Below 10 year- 60% Between 10-25 year- 30% Above 25 year- 10%

### 3.1.9. Heat wave

The district-wise temperature map of Bihar published by the India Meteorological Centre shows that the maximum temperature compiled so far in east champaran district has been found to be 45 to 46 degrees Centigrade, and the maximum average temperature has been found to be between 37 and 38 degrees Centigrade (in the month of May). The temperature records indicate the intensity of heat wave and heat hazards of this district, which is the highest in Bihar.



Under the provision of the 14th Finance Commission, the state government has declared heat wave as a local calamity along with some other calamities to facilitate preparation of special action plan and special assistance on such occasions. It is natural for the atmosphere to change heat and humidity during the summer season, so the Indian Meteorological Centre has defined severe heat or heat stroke. According to the definition of the Central Government, if the temperature is 4.5 - 6.4 degrees above the normal temperature at any time, then It is called severe heat or heat. In the plains, when the temperature is consistently above 40 degrees centigrade, we call it severe heat or heat wave conditions. If the above situation persists for two-three days, then the process of

preparation will have to be started by considering the forecast of the Meteorological Department as the basis under an action plan.

Effects of heatwave :

1. Heat Rash
2. Twitch
3. Unconscious
4. Restlessness
5. Heatstroke
6. Dehydration

The person at this stage is in emergency/critical condition and needs utmost care with proper medical aid.

**Temperature of last year (2021):**

Month	AVG TEMPERATURE	MAX TEMPERATURE
MAY	35.11 DEGREE	42 DEGREE
JUNE	33.31 DEGREE	40 DEGREE
JULY	33.91 DEGREE	37 DEGREE

### 3.2 Vulnerability and risk analysis

<b>Flood: -</b>	Almost every calendar year, flood plays a havoc role here impacting almost 0.5 million population resulting in deep human losses/cattle loss/financial loss/cropping up of potholes/loss of infrastructure & other public property losses, thus making human life almost problematic. Prima facie, it occurs mainly due to the extreme rainfall & heavy water discharge from our neighbouring country Nepal. Mainly rural population like women, children, elderly are worst affected.
<b>Earthquake: -</b>	As per the sensitivity, this district falls under ' <b>seismic zone-IV.</b> ' However according to the relevant information and records collected from different primary and secondary sources defines that the district faces vibration, but on assessment, human loss, infrastructure damage is almost negligible. Elderly citizens, women & children & physically disabled people are at high risk.
<b>Cyclone: -</b>	It occurs during the early period of the cyclone/thunder storm/hailstrom. Heavy loss or damage of crops like wheat, vegetable, fruits etc/loss of house or property, human loss/cattle

	death, moreover even basic services like transportation, infrastructure and communication services are impacted too. People living in high rise buildings/hut/ walkers, laborer's/farmer working in open area are at high risk zone.
<b>lightning: -</b>	Lightning is a such a natural disaster which not only impacts human and cattle loss but in fact it results in its death too. It occurs mainly in the calendar period from June to September. It occurs suddenly and impacts upon farmers, laborer's, people working in open field/living in huts come under their direct impact. In this type of incidents people living in open areas or with low socio-economic sized community come under their direct purview. Due to its heavy impact more human loss/cattle loss or financial loss are bound to happen.
<b>Road Accident: -</b>	In the current scenario, we need to have a deep dive so as to study the root cause from different perspectives and to conclude more, there should be a complete program in place with 360 approach. Post assessment of the accidents, we would like to highlight some key aspects  1.Reckless driving 2.Lack of civic sense 3.Ignorance/Violation of traffic guidelines 4. Worst condition of roads 5.Over speeding/Over taking 6.Unavailabilty of street lights/traffic signals/traffic signs 7.Overloading on two/three/four wheelers/public transport 8.Single lane roads  Walkers, passenger, teenagers, kaccha road are more prone.
<b>Drowning: -</b>	In last few years, cases of drowning are cropping up primarily in rural belt. As per the year 2021 trends, totality of 76 incidents have occurred and 84 deaths have been seen. Most of the cases have come up by drowning due to pond. Apart from this deaths have been reported by drowning due to rivers, drains, borewell, safety tank. These are high risk zones which needs to be addressed asap so as to minimize the human loss from all perspectives.
<b>Heat wave: -</b>	There is a constant change in temperature in the plains of the district. Local climatic conditions and the occurrence of heat wave depends on the geographical location of the region. It is generally understood by the excess of heat during the day or the restless heat in the presence of high percentage of humidity. A heat wave can traditionally last from several days to several weeks.

	<p>These are most likely to be affected</p> <ol style="list-style-type: none"> <li>1. Economically weaker section</li> <li>2. High risk age groups (Elderly, women, children, chronic patients)</li> <li>3. Pregnant women</li> </ol> <p>It is quite evident that due to the heat stroke various kinds of health related issues rise up, mainly affecting school goers, elderly people, poor class working in open fields. Aside to this, even people using public transport or else are affected due to the heat wave.</p>
<b>Fire: -</b>	<p>It has already been primarily observed that fire is caused due to the high voltage electric wires, which are in proximity to the surface &amp; connected to the fields/lands. Apart from this, cases with human carelessness have been seen eg ; burning of crop residues by setting fire &amp; short circuit. Likewise incidents have also been reported due to coal and wood chulhas Loss of crops is worse affected due to this.</p>

Vulnerability Type	Elements at Risk	Vulnerability	Findings and Root Causes
Infrastructural	School	Poor Construction	<ul style="list-style-type: none"> <li>• A few schools visited do not have appropriately constructed classrooms</li> </ul>
		Inadequate Infrastructure	<ul style="list-style-type: none"> <li>• The number of students registered in a school is always found to be manifold more than the seating capacity of the schools. It can be attributed to large population density.</li> </ul>
		Unsafe location	<ul style="list-style-type: none"> <li>• Schools are found to be constructed in unsafe location on the river bank in the outskirts of the village on the government land.</li> </ul>
	Houses	Unsafe Location	<ul style="list-style-type: none"> <li>• In some of the cases, it was found that even the pacca houses built were taken off by the flood waters.</li> <li>• Many villages are found to be situated on the river banks prone to land erosion by river during monsoon.</li> </ul>

			<ul style="list-style-type: none"> <li>Several households are placed in low lying areas prone to water logging even if not directly in course of river.</li> </ul>
		Thatched houses	<ul style="list-style-type: none"> <li>Because of frequent floods, people make Thatched houses. It then puts them at risk to fire.</li> </ul>
	Drainage Systems	Encroachment and blockage of drains and Chours (Wetlands)	<ul style="list-style-type: none"> <li>Community accepts that insufficient care and encroachment of drainages has only scaled up the problem of flooding and water logging.</li> </ul>
	Boats	<ol style="list-style-type: none"> <li>1. Insufficient Numbers</li> <li>2. Size</li> <li>3. Overloading</li> </ol>	<ul style="list-style-type: none"> <li>Insufficient number of boats even for basic purposes and water logging for days make the people most vulnerable for access to even basic amenities.</li> </ul>
	Anganwaadis	Poor Construction / No building	<ul style="list-style-type: none"> <li>Building-less anganwaadis.</li> <li>Various agencies are involved - PRIs, Line Departments, etc. – in construction resulting in non uniformity of quality and increased vulnerability to floods and earthquakes.</li> <li>Many centers don't have their own buildings and are being run in structures made of mud making them susceptible to floods; those who have their own buildings are with low plinths and are not properly maintained.</li> </ul>
	Anganwaadis	Unsafe Location	<ul style="list-style-type: none"> <li>In every panchayat, it has come out that a lot of these anganwaadis are constructed in unsafe locations that are prone to flooding. Since these are designated for children that are 2 to 6 years old, it puts them at much greater risk.</li> </ul>

		Inadequate Infrastructure	<ul style="list-style-type: none"> <li>• These centres are where a lot of children get together to take up studies and be fed. Absence of Hand Pumps as a part of the infrastructure provided to anganwaadis puts the children at risk and anganwaadi sevika robbed of basic necessity for cooking of food and drinking water.</li> </ul>
	PHC/APHC/ Health Subcentre	Difficulty to reach during floods/ Unsafe location	<ul style="list-style-type: none"> <li>• Health centers often become beyond reach of villagers during floods either because of absence of bridge to cross the river or mud roads that gets washed away by flood waters, restricting the mobility of people.</li> </ul>
		Poor Construction	<ul style="list-style-type: none"> <li>• Some of the Health centres are found to be in poor construction vulnerable to earthquake and heavy floods.</li> </ul>
		Absence of ANMs	<ul style="list-style-type: none"> <li>• ANMs are generally seen to be staying in far-off places from the Panchayats with no or little mode to commute and as a result, their visits to the panchayats are irregular.</li> </ul>
	Water Security (Clean drinking water in sufficient supply)	Unclean Water	<ul style="list-style-type: none"> <li>• Most personal hand pumps are found to be at the depth of 15 to 40 feet, generally. At this depth, the quality of water is poor for drinking purposes and often visibly so. In discussion with community in different blocks, it was found that the clean drinking water is generally found at the depth of 150 feet. However, this is out of the economic capacity of individual households who generally go to the depth of 15 to 40 feet for their individual hand pumps.</li> </ul>
		Dysfunctional Hand Pumps	<ul style="list-style-type: none"> <li>• Mostly, it's the government installed hand pumps which are at the depth of 150 to 200 feet and thereby a source of clean drinking water. However, it's found that at least half the installations are dysfunctional in almost every panchayat visited. Moreover, their numbers to population served ratio is heavily skewed.</li> </ul>

	Water Security (Clean drinking water in sufficient supply)	Abandoning use of Wells	<ul style="list-style-type: none"> <li>With hand pumps being an easier and quicker way of extracting water, people in villages are discontinuing use of wells as a source of drinking water. As a result, most wells are non-operational.</li> </ul>
	Irrigation	Government boring pumps (State Boring)	<ul style="list-style-type: none"> <li>These are either seen not to be installed or otherwise dysfunctional since many years. As a result, floods are followed by dry lands for irrigating fields.</li> </ul>
Social	Community	Resettlement and Rehabilitation	<ul style="list-style-type: none"> <li>With rivers cutting land into the villages with soil erosion, they are forced to evacuate and relocate their houses.</li> </ul>
		Dependency on Government	<ul style="list-style-type: none"> <li>Community do not collectively maintain common resources like well, community hand pumps, drainages and thus severely affect everyday living.</li> </ul>
		Caste favours in implementation-on of government schemes	<ul style="list-style-type: none"> <li>It was observed that some particular sections of the villages were more developed than others seemingly just because that section is in majority of which Mukhiya is a member.</li> </ul>
	Women Participation	Women are not seen in meetings and decision making	<ul style="list-style-type: none"> <li>Owing to male orientation and dominance, women are elected only for meeting government policy of women empowerment by ensuring a certain proportion of elected mukhiyas to women. However, in reality, it is the commonly known 'Mukhiyan patis' and not mukhiyas who play the lead role.</li> </ul>
	Vulnerable Caste Groups	Greater susceptibility to floods and fire	<ul style="list-style-type: none"> <li>The communities like Mahadalits or other vulnerable social groups are more often economically weaker and often live in low lands making their lives, material and resources more susceptible to floods.</li> <li>Houses are also virtually knitted with one another making them susceptible to greater loss due to fire.</li> </ul>

Attitudinal	Drainage System	Water logging	<ul style="list-style-type: none"> <li>• Due to the wrong attitude of encroachment of land, traditional drainage streams have ceased to exist today and several chauras (Wetlands) doesn't exist anymore leading to prolonged water logging and worsened after floods scenario.</li> </ul>
	Land Erosion	Embankments	<ul style="list-style-type: none"> <li>• Demand by community for construction of embankments in their villages on the river banks irrespective of understanding its' possible impact on panchayats y river downstream.</li> <li>• Most people showed willingness to do bamboo plantation even on private lands through MGNREGA to prevent land erosion.</li> </ul>
	Sustainability	Common pool of resources	<ul style="list-style-type: none"> <li>• Maintenance of local resources like wells, hand pumps are left entirely to government even while they themselves face all the inconvenience. This brings in unsustainability in the installed government infrastructure.</li> </ul>
	Cooperation and Emergency Interventions	There's no community initiative/ effort for preparedness	<ul style="list-style-type: none"> <li>• Lack of interest and awareness along with benefit seeking attitude for taking relief.</li> </ul>
	Community	Attitude towards government	<ul style="list-style-type: none"> <li>• People see government as a provider and not as an enabler. As a result, they shun their duties while demanding their rights.</li> </ul>
Environmental	Agricultural Land	Reduced Agricultural Productivity	<ul style="list-style-type: none"> <li>• Water overflows river course along with sand on to the agricultural land, thereby reducing productivity or making the land barren.</li> </ul>
		Reduction in Land Holding	<ul style="list-style-type: none"> <li>• The land holding of the farmer having fields near the river basin are vulnerable to land erosion.</li> </ul>

	River Banks	Land erosion	<ul style="list-style-type: none"> <li>Massive soil erosion is seen on the river banks every year cutting villages and reducing land for agriculture.</li> </ul>
	Sanitation	Very few households has sanitation facilities	<ul style="list-style-type: none"> <li>Improper utilization of funds, poor construction by NGOs, lack of interest and awareness among masses.</li> </ul>
Economic	Crops	Crop failure	<ul style="list-style-type: none"> <li>Due to flooding of fields, the crop output is diminished or completely destroyed, particularly when water stagnates for longer periods. Sometimes, with the rush of water, crops are even washed away.</li> <li>Floods also brings with it sand (balu mitti) which severely damages the fertile agricultural land and leaving it barren.</li> </ul>
	Poverty	Low per capita income, savings and emergency preparedness	<ul style="list-style-type: none"> <li>Destruction of crops and lands by annual flooding and lack of sufficient livelihood opportunities.</li> </ul>
	Domestic Animals	Animal deaths during floods and fire	<ul style="list-style-type: none"> <li>Often, it's the animals that are washed away, especially in flash flood areas leading to loss of lives of animals and livelihoods for households.</li> <li>Fire situations often lead to burning down of animals since they are tied.</li> </ul>
	Manual Labour	Closure/Reduction of MGNREGA labour work during floods	<ul style="list-style-type: none"> <li>The number of people getting jobs as labourers within the panchayats gets reduced during monsoon season.</li> </ul>

Table 13 Showing Vulnerability Analysis of East Champaran

### 3.3 Capacity analysis

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

#### **Following detailed list are attached in the Annexures**

1. Annexure 2 Health Profile of the East Champaran District
2. Annexure 3: List of trained divers
3. Annexure 4: List of available equipment for Disaster Management
4. Annexure 5: Department wise list of equipment available
5. Annexure 6: List of vulnerable villages along with list of safe shelters
6. Annexure 7: Detailed power and functions of District Disaster Management Authority
7. Annexure 8: List of trained PRIs including Sarpanch and Mukhiyas on Disaster Risk Reduction
8. Annexure 9: Bihar state disaster relief norms

## Chapter- 4 Institutional Arrangement

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

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

### 4.1. District Disaster Management Authority

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

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

#### District Disaster Management Authority Members, East Champaran

Sr. No	Officer	Designation
1	District Magistrate	Chairman
2	Superintendent of Police	Members
3	Civil Surgeon	Members
4	Executive Engineer (PHE)	Members
5	Executive Engineer (PWD)	Members
6	Executive Engineer (Power)	Members
7	Chairman Zilla Parishad	Members
8	Additional District Magistrate	Members

Table 14 Showing District Disaster Management Authority

#### Powers of District Disaster Management Authority:

The roles and responsibilities of the DDMA have been elaborated in Section 30 of the DM Act, 2005. The DDMA will act as the planning, coordinating and implementing body for DM at the District level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA. It will, prepare the District DM plan for the District and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan and the District Plan.

The DDMA will also ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all the Departments of the State Government at the District level and the local authorities in the District. The DDMA will further ensure that the areas in the district vulnerable to disasters are identified and measures for the

prevention of disasters and the mitigation of its effects are taken, ensure that the guidelines for prevention of disasters, mitigation of its effects, preparedness and response measures as laid down by the National Authority and the State Authority are followed by all departments, lay down guidelines for prevention of disaster management plans by the department of the Government at the districts level and local authorities in the district, monitor the implementation of disaster management plans prepared by the Departments of the Government at the district level, lay down guidelines to be followed by the Departments of the Government at the district level for purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and monitor the implementation of the same, review the state of capabilities and preparedness level for responding to any disaster or threatening disaster situation at the district level and take steps for their upgradation as may be necessary, organise and coordinate specialised training programmes for different levels of officers, employees and voluntary rescue workers in the district, facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, governmental and nongovernmental organisations, set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public, prepare, review and update district level response plan and guidelines.

The DDMA will also coordinate response to any threatening disaster situation or disaster, coordinate with, and provide necessary technical assistance or give advice to the local authorities in the district for carrying out their functions, examine the construction in any area in the district and issue direction the concerned authority to take such action as may be necessary to secure compliance of such standards as may be required for the area, and identify buildings and places which could, in the event of any threatening disaster situation or disaster, be used as relief centers or camps and make arrangements for water supply and sanitation in such buildings or places, establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice. The DDMA will encourage the involvement of nongovernmental organisations and voluntary social-welfare institutions working at the grassroots level in the district for disaster management ensure communication systems are in order, and disaster management drills are carried out periodically. *(Please refer annexure 7 for detailed power and functions of District Disaster Management Authority)*

#### **4.2. Panchayati Raj Institution**

Panchayat Raj Institution is the organization of elected panchas by the members of Gram Sabha of the village. It is a self-government organization. The number of members in a Gram Panchayat depends upon the population of the village. Generally, the number of elected panchas in a Gram Panchayat varies between seven and seventeen members. However, it may vary from state to state. There is provision for reservation of Scheduled Castes, Scheduled Tribes and Women candidates. The head of the Panchayat is known as "Sarpanch". Working of Panchayat at community level will go a long way in getting people prepared for countering natural disasters as well as involve them in all possible preventive and protective activities so that the impact of the disasters are mitigated and the people are able to save their lives and property.

In East Champaran District, total 405 Gram Panchayats exist. As per the 73rd and 74th Amendment Act, 1992:- Granted constitutional status and protection to the panchayat raj institutions and urban local bodies as well as intended to make Panchayat raj Institutions / Local Body as institution of Local self-government and to bring a third tier to our democracy.

BSDMA is also providing training to Mukhya and Sarpanchs on Disaster Management and Disaster Risk Reduction with objective of involving local panchayat in local level disaster management planning and risk reduction.

*Please refer annexure 8 for List of trained PRIs including Sarpanch and Mukhiyas on Disaster Risk Reduction*

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

Table 15 Showing Role of Panchayat Raj Institution

### 4.3. Organisations

➤ District officials will also keep getting information regarding monsoon rains and floods from the following website. For this, the District Informatics Officer of NIC will be entrusted with the responsibility:

Meteorological Forecasting Division- Govt. of Nepal	<a href="http://www.mfd.gov.np">http://www.mfd.gov.np</a>
Central Water Commission of India	<a href="http://www.india-water.com">http://www.india-water.com</a>
Water Resources Department, Govt. of Bihar	<a href="http://wrd.bih.nic.in">http://wrd.bih.nic.in</a>
Indian Meteorological Department	<a href="http://www.imd.gov.in">http://www.imd.gov.in</a> <a href="http://www.mousam.gov.in">http://www.mousam.gov.in</a>
Disaster Management Department, Govt. of Bihar	<a href="https://state.bihar.gov.in/disastermgmt/CitizenHome.html">https://state.bihar.gov.in/disastermgmt/CitizenHome.html</a>
Ganga Flood Control Commission,	<a href="http://gfcc.bih.nic.in">http://gfcc.bih.nic.in</a>

Patna,Ministry of Water Resources, Govt. Of India	
Flood Management Information System,Bihar	<a href="http://www.fmis.bih.nic.in">http://www.fmis.bih.nic.in</a> <a href="http://www.ffs.india-water.gov.in">http://www.ffs.india-water.gov.in</a>
<a href="http://www.EarthNetworks.com">www.EarthNetworks.com</a>	This website gives accurate forecast of the occurrence of lightning. The specialty of this website is that you can enter your mobile number and email-id in it so that you can easily get the forecast of thunderstorm in your mobile.
Damini App	The Meteorological Department and IITM Pune have jointly established a lightning location network with about 48 sensors across the country. Based on this, the Damini app has been developed, which gives information about the possible location of lightning within a radius of 40 km.
Indravajra App	Indravajra app will alert people 30-40 days before lightning strikes. The special thing is that your smartphone's ringtone will play as an alert.

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

Following are the key local CBOs in East Champaran.

Name	Address	Aim and Working area
Videnulami Educational Social Welfare Society, Dhaka	City/ Town : Dhaka Add : AT- Bisrahiya, PO and PS- Dhaka City/ District : East Champaran Zip/Pin Code : 845418 State : Bihar Mobile No. : 8873318332, 8539908088, 9801948582 Email : videnulamiesws@gmail.com Contact Person : Dinesh Mishra, Secretary	Purpose : Development (General), Education Aim/Objective/Mission : Videnulami Educational Social Welfare Society is Champaran NGO based in Dhaka of Champaran District of Bihar. The society has been working for all kind of development programmes of rural, urban, minorities, poor, helpless, deprived, old age people, women, widows, handicapped people in the field of education, health, art & culture, economic upliftment, science & technology, industries, environment, employment, social evils, awareness, agriculture, relief & rehabilitation etc. Now, Devraj Central School, Bisrahiya Chowk, Dhaka [Approved by Govt. of Bihar, Code : EC-DHA/ 052] and so many approved & registered educational institutions are running in rural, urban, minorities, slum etc. areas in the district of East Champaran to achieve the goals in the field of education under a managing committee with devoted volunteers of Videnulami Educational Social Welfare Society (VESWS).
TwitterGoogle+Share Sravodaya Navyuvak Gram Vikash Sanstha, East Champran	Add: Station Road, Motihari Bihar East Champran Pin: 845401 Bihar Contact Person: Vishwabandhu	Purpose: Aim/Objective/Mission: To educate every child and handicapped persons and try to make him a better citizen.
Swabhimam Jagriti Mission, Champaran	Add: Benkuth, Champaran Champaran Pin: 845401 Bihar Contact Person: Shakeel	Purpose: To educate and help the poor. Aim/Objective/Mission: To change the life of each and every individual, falling in below poverty line.
Bashirul Hoda Islahul Muslemin Welfare Society, Motihari	Add: Bashirul Hoda Islahul Muslemin Welfare Society, Nackchhed Tola Motihari Pin: 845401 Bihar Contact Person: Mohammad Sanaullah Ansari	Purpose: Aim/Objective/Mission: To help the weaker section of the society especially those who are below the poverty line. Our aim is to establish educational environment among the weaker persons and improve skill training for income generation purpose in order to improve the financial activities of rural and urban female and children.
ADHAR – Association for Awareness	Add: Rajguru Chowk, East Champaran Bettiah	Purpose: Aim/Objective/Mission: Upliftment of people from SC/ST, backward communities

Development & Human Rights,	Pin: 845438 Bihar Contact Person: Nand Lal	and those groups blow the poverty line through a process of participatory development based on social awareness and community organization.
Sarvodaya Navyuvak Gram Vikas Sanstha, Champran	Add: Sattion Road, Motihari East Champran Pin: 845401 Bihar Contact Person: Amrit Sagar	Purpose: Education, health, rural development, micro finance. Aim/Objective/Mission: To make India developed country alongwith developed villages.
<b>Dr. Kalam Educational Foundation, Champaran</b>	Add: Gandhi Chowk, Ghorasahan East Champaran Pin: 845303 Bihar Contact Person: Dharmendra Singh	Purpose: Education, health, rural development, women awarness, & child development. Aim/Objective/Mission: To sever the nation by the social service and to promet the tradistional art and culture.

Table 16 Showing Community Based Organisations Aim and Working Area

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

Table 17 Showing Major Roles of Community based Organisations

#### 4.4. Emergency Operation Centres;

Immediate first response to any disaster has to be from the district administration. Hence, it is necessary to ensure that District EOCs are strengthened / constructed with state of the art emergency communication equipment to communicate with State EOC as well as other local level functionaries. A full equipped emergency operation centre is available at district headquarter of East Champaran.

In case of activation of the EOC, the Incident Commander needs to come to the EOC. The emergency Support Function coordinators also need to come to the EOC for proper response. Special emphasis needs to be given to communication and database equipment. The EOCs may be equipped to make reverse emergency calls and send SMS messages on the cell phones in the district. It was recommended that the district alternative EOC should have at least basic minimum functionality for responding to disasters. The district alternate EOC for district and the state as a whole was suggested for setting up at the Centre for Disaster Management.

#### Role of EOC during Emergency Response

1. On receiving information (either from National or State Emergency Operation Centres, early warning agencies, or field functionaries of sub-divisions or blocks), the District Emergency Operation Centre has to be activated fully as per laid down protocol.

2. The District Emergency Operation Centre issues then alerts/warnings to all designated authorities at district, sub-division and block level and elected representatives at the panchayat level as per Information Dissemination previously described. Communicate to depending on severity; the information may also be communicated to following actors: Individuals/agencies.
a) District Magistrate
b) Incidence Response Team
c) Line departments
d) Members of the District Disaster Management Authority
e) Health centers at the disaster site
f) District Emergency Operation Centre in nearby districts
g) State Emergency Operation Centre and State Disaster Management Authority
h) Member of Legislative Assembly and Member of Parliament of affected areas
3. The District Emergency Operation Centre send the FIR (as previously detailed) to the State and National Emergency Operation Centres. Thereafter, daily reports are sent until situation normalizes. Daily situation Report
4. The District Emergency Operation Centre collects all relevant information and appraise the status to designated decision-making authorities.
5. The District Emergency Operation Centre is responsible to maintain all records and documents such as call log, maintain records of information received from field as well as various authorities related to the response.
6. Finally, the District Emergency Operation Centre constantly communicates with any Mobile Emergency Operation Centre or similar and the Incident Commander as per Incidence Response System.

Table 18 Table Showing Role of Emergency Operation Centres during Emergency Response

### Scope of work of the District Control Room

Time	Activities Frame
Normal Time	<ul style="list-style-type: none"> <li>• Ensure that all warning and communication systems, instructions are in working condition;</li> <li>• Receive information on a routine and regular basis from the departments on the vulnerability of the various Gram panchayats and Villages to disaster</li> <li>• Receive reports on preparedness from the relevant district level departments and other departments, as per as the formats. Based on these reports, the DEOC will forward the Preparedness Measures details on behalf of the Collector to the State Control Room, Relief Commissioner</li> <li>• Upgrade and update District Control Room system according to changing scenarios in the district update data bank and maintain an inventory of resources.</li> <li>• Update all information on the SDRN / IDRN Inform State Control Room, Relief Commissioner of any changes, including updating of data bank.</li> <li>• Monitor preparedness measures including simulation exercises undertaken by various departments.</li> <li>• Ensure proper dissemination of information about District Control Room System at the district level, local level and disaster prone areas.</li> <li>• Identify appropriate NGOs/Private Sector Organizations, which can be assigned the task of community level preparedness.</li> <li>• Organize post-disaster evaluation and update District Control Room System accordingly Prepare reports and documents on district level disaster events and submit the same to State Control Room, Relief Commissioner</li> </ul>
Disaster Time	<ul style="list-style-type: none"> <li>• Weather tracking and early warning dissemination.</li> <li>• To collect and transmit information regarding matter relating to natural calamity.</li> <li>• Mapping of vulnerable areas.</li> <li>• Database on civil society organizations and their activities Database on volunteers.</li> <li>• Facilitate regular meetings of civil society organizations and issue updates Flow of</li> </ul>

- |  |   |
|--|---|
|  | <p>information to State control room in Relief Commissioner's office</p> <ul style="list-style-type: none"> <li>• District level training of officials and NGOs in emergency response Men and material management in emergencies with proper facilitation.</li> </ul> |
|--|---|

Table 19 Table Showing Scope or Work in District Control Room

#### 4.5. Coordination mechanism

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

##### **Interdepartmental Coordination;**

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

##### **Sub division level coordination mechanism:**

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

##### **Circle level coordination mechanism:-**

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

##### **Arrangements at local level**

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

##### **Coordination system with inter departments and at district level**

The District Magistrate is the head of the District administrative set up and chairperson of the DDMA as per the DM Act, 2005. She / He has been designated as the responsible officer in the District. The heads of different departments in the District will have separate roles to play depending on the nature and kind of disaster. The roles and responsibilities of the members of the DDMA will be decided in advance in consultation with the concerned members.

- **Pre Disaster coordination:** Minimum Annual meetings for review of preparedness and discussing the roles and responsibilities of the line departments, Block and Sub Divisions. The meeting agenda would be discussing the capacity of each department in terms of SAR equipment's and manpower and regular updation of the same.

- **Disaster phase coordination:** Coordination through phone or any other mode of communication in a disaster phase is not possible hence, all the line departments and training institutes in the district should report to the DEOC as soon as the disaster strikes. After loss/damage assessment at the DEOC, the RO(D.C) would direct various stakeholders to deploy their resources and task forces in the affected areas. Relief camps would be setup at a pre-defined location.
- **Post disaster coordination:** In the post disaster phase, the responsible officer would take updates on the conditions of basic amenities like water, food, roads, law etc. from the respective departments. An assessment of relief given and need of rehabilitation would also be taken in the post disaster phase.

#### **Coordination mechanism with NGOs, CBOs, Self Help Groups (SHGs)**

The strong linkages which NGOs, CBOs have with grassroots communities can be effectively harnessed for creating greater public awareness on disaster risk and vulnerability, initiating appropriate strategies for strengthening the capacity of stakeholder groups to improve disaster preparedness, mitigation and improving the emergency response capacities of the stakeholders. Indian Red Cross society is nodal agency to coordinate with district administration.

In addressing the emerging concerns of climate change adaptation and mitigation, NGOs can play a very significant role in working with local communities and introducing innovative approaches based on the good practices followed in other countries.

NGOs can bring in the financial resources from bi-lateral and multilateral donors for implementing pragmatic and innovative approaches to deal with disaster risk and vulnerability, by effectively integrating and converging the various government programs, schemes and projects to create the required synergy in transforming the lives of at-risk communities.

The DDMA will maintain a proper record of the NGO's and CBO is working in the district and map the available resources for them. The DDMA will appoint a Nodal officer for coordination with NGO's, CBO's and SHG's. The DDMA will call annual meeting of NGO's, CBO's & SHG's for mapping their resources. The designated Nodal officer will coordinate the meeting.

#### **Coordination with other districts and state:**

The DDMA will call annual meeting with neighbouring district authorities pertaining to Disaster risk reduction and capacity building by reducing the existing gaps through regular coordination. The DDMA will participate in the meetings called by SDMA or other State level authorities to promote coordination with other districts and state authorities.

## Chapter 5 Prevention, Mitigation and Preparedness Measures

Prevention and mitigation strategies should work towards reducing the financial and social costs to communities over time, improving the built environment, and reducing the impact on, and damage to, the environment.

Investment in disaster risk prevention and reduction enhances the economic, social, health and cultural resilience of people, communities, countries and their assets, as well as the environment.

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

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

### a. Key functions of departments/ agencies

Department	Preparedness	Prevention	Mitigation
DDMA	Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments	Bringing the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation;	Ensure implementation of guidelines for prevention of disasters, mitigation of its effects
Education	Incorporation of disaster management education in the curriculum of students	Construction of disaster resilient schools	Support DDMA for educating PRIs and local communities on disaster management
Health	Identifying community resources applicable to the physical, social, and psychosocial effects of a disaster and educating/ training community on emergency and medical	Preventing disease by providing health advisories on injury prevention, food and water safety, and vector control	Developing and advocating public policies designed to reduce the public health impact of potential disasters
Police	Conducting and planning of Emergency Traffic, Detail communication, Identification of campsites, Security Plan, Resource Mapping, and Training of volunteers.	Restoration of communication system/ Liaoning with rescue teams	Ensure on time execution of preparedness activities
Public works department	Maintain the departmental equipment, position of approach roads and other road of all the villages and inspect periodically the buildings, residences, high-rise buildings under their control.	Strictly observe and implementation of building byelaws and the rules during the constructions regarding disaster resilient construction.	Identification of disaster vulnerable locations and enforcement of disaster resilient constructions
Municipal administration	Extensive data collection, maintaining directories of resources, developing action	Examine construction in the area and if hazard safety standards have not been followed, direct the	Promote and support research, development of new technologies

	plans, capacity building, training and community awareness Activities and Articulating Command Structure for effectively managing activities that immediately follow disaster.	relevant entities to secure compliance of such standards and include maintenance of early warning system, identification of buildings to be used as evacuation sites, stockpiling relief and rescue materials and identifying alternative means for emergency communication	and the use of local knowledge in measures that are aimed at supporting risk reduction.
Fire and emergency services	Orientation and training of village-wise volunteers and communities and Fire departments in search and rescue, providing security in emergencies and being available where support services are required e.g. carrying of the injured, identification of the dead, keeping record of the same and handing over of the dead bodies to relatives etc.	Organizing inspection of the building and sending inspection report with recommendations to the party concerned and with a copy to BSDMA & DMD	Enforcement of fire related measures in the existing buildings, Specifically Govt., multi-storeyed and other strategic ones.
Community Based Organisation	Awareness and Information campaigns Training of Volunteers Advocacy and planning	Conduct and implement projects and activities of disaster prevention	Strengthening non-structural elements of all disaster through training and capacity building

Table 20 Showing Departments/ Agencies of East Champaran District

### b. Disaster wise functions of departments /agencies

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

	<ul style="list-style-type: none"> <li>- Formation of panchayat wise search and rescue team</li> <li>- Identification of safe shelter for community</li> </ul>		
<b>Animal Husbandry Department</b>	Establish and practice protocols for Early Warning approval and dissemination.	Preparation of emergency animal evacuation plan	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Check vaccination before the seasonal disasters such as floods		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Check supply of life saving vaccines in advance and store them safely.		
	Identification of the safe place in the Panchayat with the help of community and field staff of the department.		
	Fodder storage at safe places.		
	Awareness to the officials for the safety of life, material, equipments and for this placement of the items at safe places.		
<b>Fisheries Department</b>	Renovation of the fishponds	Development of flood safe ponds and restoration of ponds in vulnerable areas	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work Bring awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.
	Ensuring that the protection has been provided to the fish ponds.		
	Stockpile and preposition other necessary repairing material at vulnerable locations for the immediate repairs.		
	Setting up of model farms in the districts and the exposure visit of the Panchayats so that they gain knowledge		
	Ensure sufficient preparedness is there for emergency response.		
<b>Bharat Sanchar Nigam Limited</b>	Standby arrangements for temporary electric supply or generators	Strengthening early warning and dissemination system area wise and disaster wise	Establish emergency restoration mechanism and contingency fund for emergencies  Prepare action plan for emergency electric supply
	Establish Mass Messaging services and inform the society on weather forecast and early warning		
	Sending alert messages during emergencies.		
	Location of equipments, wires at safe places to rectify the technical problems in time.		
	Monitoring and safe guarding the line department's telecom infrastructure in flood vulnerable locations/ area		

<b>Public Works Dept. (PWD)</b>	Arrangement of extra vehicles/ heavy equipments, such as frontend loaders, towing vehicles, earth moving equipments, cranes etc.	Installation of rain gauge at block headquarters	Spatial planning (flood risk adapted land use); building regulation and improvement of building flood resistance (wet-proofing and dry-proofing)
	Ensuring there is sufficient stock of construction material in disaster prone areas. Also there is availability of preventive measures	Strengthening/ repair of existing roads and bridges and other critical infrastructure in flood plains	
	Inspection and emergency repair for roads, road bridges, underwater inspection /piers/concrete and steel work.		
	Identifying the buildings that are vulnerable to flood, earthquake, water logging and developing the plan to avoid any damage to the building.		
	Identification of the safe building (govt.) in the panchayat and block. The safe places must be identified as per the disasters (flood, earthquake).		
<b>Education Department</b>	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.	Conduct of Safety audits including school safety, electrical safety and food safety Awareness generation and developing School DM Plans. Implementation of Safe Saturday programme in all school
<b>Electricity Department</b>	Establish and practice protocols for Early Warning approval and dissemination.	Installation of high raised polls and good quality wires in vulnerable areas	Establish underground wire installation in new developing areas
	Identification and assessment of power generating units at the panchayat level block level and district level.		
	To promote the schemes on non-conventional energy sources.		
	Location of such units away from the water logging areas.		
	Installation of biogas units or windmill at safe places in the villages.		
	The department must identify the power units, which are located in disaster prone areas, arrange proper route connectivity for relief, emergency logistic, and provide alternate connectivity to reduce damage.		
	Based on recent or past emergencies the		

	department should frame an outline of future action plan including disaster risk reduction preventive measurements.		
<b>Fire and Emergency services</b>	Prior information by Road Construction Department to Fire Department on road diversions and maintenance of the roads before hand.		Organize awareness campaign regarding safety measures for incidents. Conduct regular drills. Enhance firefighting capabilities
	Assess the vulnerable points in the infrastructure, especially in hazardous prone industries and take measures like timely repairs etc.		
	Maintenance of firefighting equipments etc. and installation of fire alarm and water pumps like hydraulics, sprinklers etc.		
	Scope the budget for the maintenance of firefighting equipments and structural measures etc. under different categories.		
	Protect the life and property from firebreak and other disasters like flood.		
	Promotion of fire safety standards		
	Organizing awareness and training		
<b>Health Department</b>	Establish and practice protocols for Early Warning approval and dissemination.  <ul style="list-style-type: none"> <li>- Prepare Block-wise risk-profile of epidemic prone diseases.</li> <li>- Map the areas with emergence of multi-drug resistant bacteria.</li> </ul>		Provision of functional isolation wards in all tertiary hospitals.Provision of labs which could diagnose all the rare pathogens and their Characteristics including bio-terrorism agents.
	Ensure effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through the district health plan.		
	Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene and nutrition.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensure sufficient preparedness is there for emergency response.		

<b>Civil Defense</b>	District based training center for the training of the civil defense volunteers		Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	There should be arrangement of proper mess for the preparation of food		
<b>Water resources Department</b>	Improvement in the tube well facilities so that people overdependence on the monsoon can be reduced.	Fortification of weak embankments and vulnerable points in canals/ rivers during free flood monsoon.	Improvement of design for irrigation and flood protective structures. Ensure Channel improvement. Ensure flood proofing.
<b>Public Health Engineering Department</b>	Floods in this district are really need to be taken care of at the same time we also need to look at poverty and illiteracy, which is prevailing in this District.	Improvement of drinking water supply system and sanitation structures.	Improvement of design for water sources and water supply protective structures. Ensure water supply Channel improvement. Ensure flood proofing.
	Establish and practice protocols for Early Warning approval and dissemination.	Strengthening the public health institutes, surveillance system and epidemiology department.	
	Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching powder in the relief camps/shelters in disaster probable areas.		
	Establish a contingency fund in the department.		
The Department must try to construct hazard specific sanitation so that the available services can be utilized in a proper manner.			
<b>Building Construction Department (PWD)</b>	Look for the areas, which get water inundated, flood affected most of the time. There is a need to make those area infrastructural stronger.	Strict implementation of work regulations. Strict adherence to fire safety standards in all buildings.	Carry out structural safety inspection/audit
<b>Women development and child welfare department</b>	Structure should be made stronger for the Anganwadi centers		
	Try to make reach easy especially during disasters, like Flood.		
<b>District Rural Development Agency (DRDA)</b>	The use of flood resistant techniques/ structures in the construction of roads, community center, rural building etc.	Restriction of construction near / along water way	Spatial planning (flood risk adapted land use); building regulation and improvement of building flood resistance (wet-proofing and dry-proofing)
	Guidance and helping the DM committees in developing the disaster management plan.	Mainstreaming MGNAREGA with DRR in vulnerable areas	
	Capacity building of community in the rural areas regarding DRR.		
	Allocation of separate fund for disaster		

	<p>management, so that the essential reconstruction work can be started early after any emergency.</p> <p>Define standards/ benchmarks to measure 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>		
<b>Food Corporation</b>	<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 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>		Procure ration in advance at various micro-zones in sufficient quantity before the onset of monsoon.
<b>Municipal Corporation</b>	<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 long the riverbanks/ tributaries</p> <p>Establish infrastructure for flood warning and dissemination</p>	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
<b>Water resources Department</b>	<p>Assess the vulnerable points in the infrastructure, especially embankments and take measures like timely repairs etc.</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 flood ways and river diversions</p> <p>Construction of flood protection wall, flood diverting channels etc.</p> <p>Construction of barrages on the banks of rivers.</p>	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work

Table 21 Showing Prevention Mitigation and Preparedness Actions for Flood

2. Drought			
Department	Preparedness	Prevention	Mitigation
<b>DDMA</b>	Awareness generation and capacity building on water conservation techniques	Establish infrastructure for drought warning and dissemination	Strengthen and upgrade existing drought forecasting system
	Encourage Water Resources Department, Department of Minor Irrigation, Department of Agriculture & PHED and other specialized agencies to take up drought prevention and mitigation measures.		Impart training to the stakeholders involved in drought mitigation and management
	Instruct Panchayat Raj Department/PHED/Rural Development Department/ Building Construction Department/ Education Department/ Health Department etc. for promotion of rain water harvesting measures as a drought prevention measure and encourage them to incorporate rain harvesting measures in all building construction works undertaken by the District Administration.		
	In association with Department of Agriculture, Rural Development Department and Department of Environment and Forest & through other specialized agencies work out drought prevention, mitigation and preparedness measures from crop State of Bihar State Disaster Management Plan		
	Instruct energy department to arrange in advance for electricity supply during drought situation		
<b>Agriculture Department</b>	Identification of drought prone areas through GIS mapping, storage of seeds, fertilizers, rainfall estimation etc. For drought situation		Strengthen and stabilize irrigation system with water resource department
	Survey and study of identified drought prone areas		Training, awareness generation etc.
	Formulation of prevention, mitigation and preparedness measures along with budget allocations		Also, develop Action Plan for DRR – identifying actions to be taken by agriculture.

	Formulation of policy and strategizing the implementation of rain harvesting programme & activities		Application of advanced agro-Science technology and agro-engineering inputs to improve agriculture production
	Working out Crop Contingency Plan		
	Providing Agriculture Input subsidy		
	Strategizing the storage and supply of seeds, fertilizers and pesticides		
	Working out ecological betterment of the areas		
	Organizing the irrigation facilities		
	Working out alternative cropping programme and activities		
	storage of seeds, fertilizers etc. for drought situation		
	Prepare Contingency Plan to face drought situation		
<b>Animal Husbandry</b>	Establish and practice protocols for Early Warning approval and dissemination.	Preparation of drinking water sources at proper locations	Encourage the adaptation of technique for preservation of green fodder.
	Check supply/ storage of life saving vaccines in advance and safe storage for them.		
	Arrangement of vehicle for transport of sick animals		
	Identification of the safe place in the Panchayat with the help of community and field staff of the department.		
	Fodder storage at safe places.		
	Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
<b>Fisheries Department</b>	Renovation of the fishponds and oxbow lakes.		Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Ensuring that the protection has been provided to the fishponds.		
	Open the fisheries departmental office on block level to understand the ground realities		
	Improve the better functioning among the people.		
	Training and exposure to fish farmers in scientific aquaculture, Renovation of water bodies through Panchayats,		
	Awareness on marketing for the fish farmers		
	Setting up of model farms in the districts and the exposure visit of the Panchayats so that they gain knowledge		
	Allocation of separate fund for		

	disaster management, so that the essential reconstruction work can be started early after any emergency.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensuring that the protection has been provided to the fishponds.		
<b>Bharat Sanchar Nigam Limited</b>	Sending alert messages during emergencies.		
<b>Education Department</b>	Ensure disaster management be part of curriculum in all schools, colleges.	Ensure proper water supply in Schools and Change of school hours	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensure proper drinking water facilities at school level		
<b>Energy Department</b>	Establish and practice protocols for Early Warning approval and dissemination.	Electricity supply at irrigation and water supply sources	Proper planning for maximum electricity supply in rural areas for irrigation during drought situation -
	Ensure proper electricity supplies in vulnerable areas and also at drinking water sources		
<b>Fire and Emergency services Department</b>	Assess the vulnerable points in the infrastructure, especially hazardous industries and take measures like timely repairs etc.		Awareness programs and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Ensure proper awareness initiatives in vulnerable location where the fire arise due to excessive heat		
<b>Health Department</b>	Medical camps in affected areas.	Conduct regular surveillance of public health measures	Awareness generation and capacity building trainings of community Dos and Don'ts for Heatwave
	Checklist of medicines and medicals facilities to have in the camps.		
	Stockpiling of medicine critical medicines for heat stroke		
<b>Irrigation Department</b>	Identification of drought prone areas, availability of water resource in the area, level of ground water in the area.	Enactment and enforcement of laws regulating ground water exploitation	Develop mechanisms for water audits
	Formulation of prevention, mitigation and preparedness measures.		
	Strategizing the cropping pattern in		

	association with Department of Agriculture and Creation of Irrigation facilities accordingly.		
	Monitoring and supervision of the watershed and rain water harvesting facilities in the drought prone areas.		
<b>Public Health Engineering Department</b>	Installation of extra hand pumps to sustain the supply of drinking water		Encourage indigenous rain water harvesting and conservation
	Formulating rain harvesting practices and promoting the same in vulnerable areas.		
<b>Food Corporation</b>	In consultation with Department of Disaster Management, setup centers for supply of food grains on subsidized rates or free, as decided.	Construct warehouse and cold storages for preservation/ storage off food grains	
<b>Water Resource Department</b>	Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.	Construct/ Repair dams, reservoirs, lift irrigation, tube wells, tanks, farm ponds and canals for surface irrigation	Strengthen water conservation techniques.
	Identify potential emergencies. Refer to contingency specific action plans for the same.		

Table 22 Showing Prevention Mitigation and Preparedness Actions for Drought

3. Earthquake			
Department	Preparedness	Prevention	Mitigation
<b>DDMA</b>	To organize orientation and training of responders including community in disaster management	Instruct Building Dept to Identify lifeline weak buildings and retrofit them.	Provide good quality seismic micro-zonation maps to all stakeholders. Establish seismological network and round-the-clock monitoring
	To coordinate with relevant departments regarding enforcement of Building Codes, Fire Safety Rules and Certification of Building etc.		Capacity building of Engineers & Architects in earthquake risk mitigation (to design seismically safe buildings and related techno-legal requirements)
	To follow-up with Road & Building Construction Department about the availability of heavy duty cutting and debris clearing machines, their specifications, placement, storage and their operators & upkeep of the same for ready use.		Awareness Generation among community for do's and don'ts for earthquake safety,
	To follow-up with concerned agencies about		

	<p>the arrangements for putting up stopgap bridges on emergency basis &amp; formation. In addition, training of the team for the erection of temporary bridges.</p> <p>To follow-up with BSNL about the arrangements for the restoration of communication system &amp; act accordingly</p> <p>To follow-up with Health Department about facilities available, both in private &amp; public sector, for health services in emergencies in vulnerable areas and act accordingly</p> <p>To follow-up with PHED about the drinking water facilities created in the vulnerable areas and Department's readiness to provide the same in emergencies &amp; act accordingly</p> <p>To follow-up with Energy Department about arrangements for the restoration of power supply and providing for supply of power through alternative sources of energy &amp; act accordingly</p>		
<b>Animal Husbandry</b>	<p>Identify animal safe shelters for animals</p> <p>Check supply of life saving vaccines in advance and safe storage for them.</p> <p>Arrangement of vehicle for transport of injured animals</p> <p>Identification of the safe place in the Panchayat with the help of community and field staff of the department.</p> <p>Fodder storage at safe places.</p>		Shed for animals should be earthquake resistant or of lightweight material that should not harm the animals.
<b>Bharat Sanchar Nigam Limited</b>	<p>Sending alert messages during emergencies.</p>		Undertaking mandatory technical audits of structural

			designs of major projects by the respective competent authorities.
<b>Public Works Dept. (PWD)</b>	Arrangement of extra vehicles/ heavy equipment, such as front-end loaders, towing vehicles, earth moving equipment, water tank supplies etc.	Establishing appropriate mechanisms for compliance review of all construction designs submitted to ULBs.	Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical lifeline structures.
		Slope stabilisation on hilly areas	Developing seismic strengthening and retrofitting standards and guidelines for existing critical lifeline structures.
<b>Education Department</b>	Construction of earthquake resistant school buildings.	Retrofitting in already constructed buildings.	Undertaking mandatory technical audits of structural designs of major projects by the respective competent authorities.
			Introducing earthquake safety education in schools, colleges and universities and conducting mock drills in these institutions.
<b>Electricity Department</b>	Identification of vulnerable and weak infrastructures and retrofitting of the same		Undertaking mandatory technical audits of structural designs of major projects by the respective competent authorities.
<b>Fire Department</b>	Assess the vulnerable points in the infrastructure, especially hazardous industries and take measures like timely repairs etc. Ensure proper awareness generation and capacity building for search and rescue and first aid		Training its staff in search and rescue operation
<b>Health Department</b>	The preparations shall be made keeping in mind injuries caused by falling off and from buildings, heavy structures-specifically bone	Equip buildings with basic first aid facilities.	Prepare Hospital mass casualty management plans  Training of doctors /

	<p>injuries etc.</p> <p>Since roads either shall be breached or obstructed the setting up of medical camp etc. shall have to be flown. As such, kits etc. have to be kept ready for that kind of carrying.</p> <p>Other supplies can be disrupted; food and drinking arrangements for the medical staff shall be part of the baggage.</p>		paramedics to meet emergency situation due to earthquake
<b>Irrigation Department</b>	<p>Formulation of prevention, mitigation and preparedness measures.</p> <p>Strategizing the cropping pattern in association with Department of Agriculture and Creation of Irrigation facilities accordingly.</p> <p>Monitoring and supervision of the watershed and rain water harvesting facilities in the drought prone areas.</p>	Earthquake resilient construction of water supply channels	
<b>Public Health Engineering Department</b>	<p>To create sanitation &amp; drinking water facilities in relief camps and in shelter for livestock.</p> <p>Organize repair &amp; maintenance of the same</p>	Earthquake resilient construction of water supply channels	
<b>Food Corporation</b>	In consultation with Department of Disaster Management, setup centres for supply of food grains on subsidized rates or free, as decided.	Earthquake resilient construction of storage houses	
<b>Water resource Department</b>	<p>GIS mapping of the breaches in embankments caused by earthquake</p> <p>Repairing of the breaches and maintenance of other embankments</p>	Preparing earthquake resilient embankments	Enforcement and monitoring of compliance of earthquake-resistant building codes, town planning byelaws and other safety regulations.
<b>DRDA</b>	<p>Advising Panchayat Raj representatives to do advocacy for construction of earthquake resistant houses as per the technical specifications available.</p> <p>Bring awareness about earthquake among communities</p>		Enforcement and monitoring of compliance of earthquake-resistant building codes, town planning byelaws and other safety regulations.

Table 23 Showing Prevention Mitigation and Preparedness Actions for Earthquake

4. Wind Cyclone:			
Department	Preparedness	Prevention	Mitigation
DDMA	Review the status of preparedness of the departments and organizations at the district level	Building Cyclone (multi hazard) Shelter with Rural Development and Public works department	Coordinate with PWD department to conduct safety assessment and Construction/ Repairing/ retrofitting and regular structural maintenance of government infrastructure
	Coordinate with Education department and rural development department for capacity building of PRIs, Communities, students and teachers		Coordinate with energy department for assessment and retrofitting of existing electrical supply infrastructure such as poles, transformers which are vulnerable to falling against high speed wind
Agriculture Department	Check the equipment, telephone, wireless etc. are functional and ready.	Promoting of cyclone resilient farming and crop rotation in season	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Seed and fertilizers stored at safe places.		
	Awareness on the fertilizer management, promoting the bio-fertilizer Programme by the soil conservation department.		
	Training in adopting new agriculture practices, farmer's exposure visit to centers of excellence, institutes, training in cropping practices and use of modern technology.		
	Ensuring there is sufficient stock of seeds and other agriculture resources in disaster prone areas. In addition, there is availability of preventive measures.		
	Check and ensure there is sufficient stock of equipment and tools for the repairing of non-functional machines and equipment.		
	Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
	Allocation of separate fund for disaster		

	<p>management, so that the essential reconstruction work can be started early after any emergency.</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>		
<b>Animal Husbandry</b>	Establish coordination and liaison with District and Block Control Rooms, other relevant departments, support agencies, community level committees.	Sufficient nutritious food will be preserved which can last for 10-15 days, and dry grass compressed to bales or blocks with machines under high pressure, can be stored in small areas.	Shift the animals to a safer place as soon as warnings for impending cyclones are received  Animal shed will be constructed in a way that they can withstand strong cyclone winds.
	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.		
	Arrangement of vehicle for transport of injured animals		
	Identification of the safe place in the Panchayat with the help of community and field staff of the department.		
	Awareness to the officials for the safety of life, material, equipments and for this placement of the items at safe places.		
<b>Fisheries Department</b>	Establish and practice protocols for Early Warning approval and dissemination.		Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Renovation of the fishponds and ox-bow lakes.		
	Ensuring that the protection has been provided to the fishponds.		
	Open the fisheries departmental office on block level to understand the ground realities		
	Improve the better functioning among the people.		
	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.		
	Supply of life saving vaccines in advance and safe storage for them.		
	Identification of the safe place in the Panchayat with the help of community and field staff of the department.		
<b>Bharat Sanchar Nigam Limited</b>	Nominate a nodal officer for disaster management.	Cyclone resilient setup of tele communication infrastructure and retrofitting of weak buildings	Awareness generation and capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Communication establishment with District and Block control rooms and departmental offices.		
	Have you identified safe areas for installing the BSNL towers or setting-up a unit during disaster?		
	Standby arrangements for temporary electric supply or generators		
	Sending alert messages during emergencies.		
	Location of equipments, wires at safe places to rectify the technical problems in time.		
	Is the department monitoring the line department's telecom infrastructure regularly?		
	Power backup for the continuation of the		

	<p>uninterrupted telecommunication signals.</p> <p>Keep the equipments, telephone, wireless etc. functional and ready.</p> <p>Establish and practice protocols for Early Warning approval and dissemination.</p> <p>Training of departmental staff in DRR knowledge.</p> <p>Identification of safe areas before installing the BSNL towers or setting-up a unit.</p> <p>Ensuring that the power back up is there for the continuation of the work.</p> <p>Computerization of rural and remote extension offices.</p> <p>Insertion of DRR features in telecom training which is provided by the BSNL.</p> <p>Taking initiative in starting SMS services to update the society on weather forecast.</p> <p>Sending alert messages during emergencies.</p> <p>Location of equipments, wires at safe places to rectify the technical problems in time.</p> <p>The BSNL Company must ensure there is inclusion of DRR features in telecom instruments and services.</p> <p>Functioning of BSNL office from safe building in order to provide the unhindered telecom services to the people.</p> <p>Allocation of separate fund for disaster management, so that the essential reconstruction work can be started early after any emergency.</p> <p>Ensure the safety of own building and property.</p> <p>Regular monitoring of the line department's telecom infrastructure.</p> <p>The BSNL Company must ensure that the temporary construction work or retrofitting has been done to the vulnerable buildings.</p> <p>Power backup for the continuation of the uninterrupted telecommunication signals.</p> <p>Keep the equipments, telephone, telex, wireless etc. functional and ready.</p> <p>Awareness to the officials for the safety of life, material, equipments and for this placement of the items at safe places.</p>		
<b>Public Works Dept. (PWD)</b>	<p>An officer to be appointed as nodal officer for Disaster management</p> <p>Arrangement of extra vehicles/ heavy equipments, such as front-end loaders, towing vehicles, earth moving equipments, cranes etc.</p> <p>Ensuring there is sufficient stock of construction material in disaster prone areas. Also there is availability of preventive measures</p> <p>Stockpile and preposition other necessary repairing material at safe place for the immediate repairs.</p> <p>Inspection and emergency repair for roads, road bridges, underwater inspection /piers/concrete and</p>		Capacity building trainings of key line department officials on various aspects of disaster and incorporation of disaster resilience work in the routine work

	steel work.		
	Community assistance mobilized for road clearing.		
	All staff informed about the disasters, likely damages and effects.		
<b>Education Department</b>	Establish and practice protocols for Early Warning approval and dissemination.	Construction of Disaster Resilient schools	Awareness generation and capacity building trainings of officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Ensure disaster management be part of curriculum in all schools, colleges.		
	Ensure sufficient preparedness is there for emergency response.		
	Ensure that all furniture of the schools, colleges are strong enough and can be used as hiding places in case of earthquake.		
	Place sign boards, marks indicating nearest exit routes, safe places, first aid, and other necessary services.		
	Keep the equipments, telephone, telex, wireless etc. functional and ready.		
	Awareness to the officials for the safety of life, material, equipments and for this placement of the items at safe places.		
<b>Energy Department</b>	Establish and practice protocols for Early Warning approval and dissemination.		Capacity building trainings of key officials on various aspects of disaster and incorporation of disaster resilience work in the routine work
	Identification and assessment of power generating units at the panchayat level block level and district level.		
	To promote the schemes on non- conventional energy sources.		
	Location of such units away from the water logging areas.		
	Installation of biogas units or windmill at safe places in the villages.		
	Taking measures to check the soil erosion and water logging when laying canal for the purpose of electricity generation.		
	The department must identify the power units, which are located in disaster prone areas, arrange proper route connectivity for relief, emergency logistic, and provide alternate connectivity to reduce damage.		
	Based recent or past emergency experience the department should frame an outline of future action plan including disaster risk reduction preventive measurements.		
	Allocation of separate fund for disaster management, so that the essential reconstruction work can be started early after an emergency.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.			

	Ensure sufficient preparedness is there for emergency response.		
	Ensuring there is sufficient stock of construction material in disaster prone areas.		
	Availability of vehicle to transport the electric equipment.		
	Ensuring the availability of equipment like cables, wire, transformers, generators etc. at key locations.		
	Stockpile and preposition other necessary repairing material at safe place for the immediate repairs.		
	Keep the equipment, telephone, telex, wireless etc. functional and ready.		
	Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
<b>Fire Department</b>	Fire department should have their own workshop for the repair of the vehicles		
	Road Construction Department should inform Fire Department about the road diversions and maintenance of the roads before hand		
	Ambulance Siren should be different from Fire Bridged Siren.		
	Assess the vulnerable points in the infrastructure, especially hazardous industries and take measures like timely repairs etc.		
	Maintenance of firefighting equipment etc. and installation of fire alarm and water pumps like hydraulic, sprinkler etc.		
	Scope the budget for the maintenance of firefighting equipment and structural measures etc. under different categories.		
	Promotion of fire safety standards		
	Organizing awareness and training		
	Ensure to install fire safety measures like fire alarm, hydraulic pump, sprinkler etc.		
	Ensure that the fire fighters are equipped with effective and modernized weapons, safety measures like fire proof gloves and suits etc.		
	Identify the vulnerable areas, buildings etc. and make an action plan to reduce its risk.		
	Assess the risk vulnerability of the areas and promote fire safety measures according to the need.		
	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.		
	Identify the most vulnerable areas to fire and other disasters, create awareness, and training among the people on fire safety measures, prepare the force for emergency search and rescue operation.		
Implementation of fire safety measures in the private, government and own buildings and establishments.			

	Provide regular training in primary health care and in evacuation, search and rescue to the fire brigades to make them alert.		
	Periodically inspect the vulnerable areas like hazardous chemical and other industries.		
<b>Health Department</b>	Sensitivity towards people (those who give the resources whom they have to give it)	Setting up mobile health units in the vulnerable pockets	Awareness generation and capacity building trainings of officials and Community on impact on health after cyclone
	Establish and practice protocols for Early Warning approval and dissemination.		
	Ensure effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through the district health plan.		
	Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene and nutrition.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensure sufficient preparedness is there for emergency response.		
<b>Irrigation Department</b>	Improvement in the tube well facilities so that dependence on the monsoon can be reduced		
<b>Public Health Engineering Department</b>	Establish and practice protocols for Early Warning approval and dissemination.		
	Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching powder in the relief camps/shelters in disaster probable areas.		
	Establish a contingency fund in the department.		
	The Department must try to construct hazard specific sanitation so that the available services can be utilized in a proper manner.		
	Identification of suitable land for solid waste management and awareness in the community on this subject.		
	The department must also stress for the provision for management of issues like disposal of solid/liquid waste.		
	Construction of toilets and installing hand pumps or other water resource structure Sanitation facility.		
	Design and implementation of solid waste disposal program.		
	Identification of safe solid waste management sites.		
	Take measures to reduce erosion risks.		
	Assess disaster risks due to any new construction or maintenance activity.		
	Protection of embankments of the ponds and rivers.		

	<p>The hand pumps should be installed on raised platforms.</p> <p>While construction of sanitary facility or hand pumps, the PHED should also keep genders and disabled community in their technical operation.</p> <p>Allocation of separate fund for disaster management, so that essential reconstruction work can be started early after any emergency.</p> <p>Define standards/ benchmarks to measure 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>		
<b>Women development and child welfare department</b>	Structure should be made stronger for the Anganwadi centers		
	Try to make reach easy especially during disasters, like cyclone.		
<b>District Rural Development Agency (DRDA)</b>	The DRDA should prioritize area of development with the area of interest. Under the MNAREGA work, embankment must be reinforced, sustainable and resistive plantation along with periodically siltation dug out and settlement.		
	Guidance and helping the DM committees in developing the disaster management plan.		
	Capacity building of community in the rural areas regarding DRR.		
	Allocation of separate fund for disaster management, so that the essential reconstruction work can be started early after any emergency.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Temporary construction work or retrofitting to the vulnerable buildings.		
	Plantation, repairing of drainage system, small canals, embankments etc.		
	Protection of the ponds and water bodies.		
	Keep the equipment, telephone, telex, wireless etc. functional and ready.		
	Awareness of the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
	Rather having staff on daily wages, staff should be taken as a permanent staff.		
<b>Food</b>	Establish and practice protocols for Early Warning	Procure	

<b>Corporation</b>	approval and dissemination	sufficient food grains in the areas likely to be affected	
	Ensure that food supplies are safe from any adulteration and any somewhat intended poisoning or damage.		
	Coordinate with Supply Department to ensure that all safety measures are in place for proper storage, transportation and distribution of supplies.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Identify potential emergencies. Refer to contingency specific action plans for the same.		
	Coordinate with the Supply Department to ensure enough food and other necessary supplies are available in disaster prone areas.		
<b>Municipal Corporation</b>	Have a proper solid water management		Awareness creation and campaign for cyclone.
	Have a Proper Drainage System		Management and maintenance of lifeline infrastructure (cyclone shelters, Hospitals, schools, places of worship, etc.).
<b>Water Resource Department</b>	Develop new ideas for erosion control		
	Establish and practice protocols for Early Warning approval and dissemination		
	Assess the vulnerable points in the infrastructure, especially embankments and take measures like timely repairs etc.		
	Maintenance of sluice gates etc. and construction of channels for distributing river waters to ponds.		
	Scope the budget for the maintenance of embankments, sluice gates, lock gates etc. under different categories.		
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
	Ensure sufficient preparedness is there for emergency response.		
	Periodically inspect the embankments for cracks, holes and other potential wear and tear.		

Stockpile and preposition other necessary repairing material at safe place for the immediate repairs.		
Keep the equipment, telephone, telex, wireless etc. functional and ready		
Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		

Table 24 Showing Prevention Mitigation and Preparedness Actions for Wind Cyclone

5. Heat wave:			
Department	Preparedness	Prevention	Mitigation
<b>DDMA</b>	Working out on ecological betterment of the District in coordination with Agriculture, Rural Development, District Industries and Forest and Environment Departments		Coordinate with Municipality, PWD and Rural Development Department to construct/ upgradation shelters/ sheds, bus stands and various public gathering places with proper cooling provisions
	Promot tree plan plantation and green energy with all sectors and society		Plan and Coordinate with Health Department for creating Medical posts at places of mass gathering including religious functions and regular markets
<b>Agriculture Department</b>	Working out Crop Contingency Plan		Encouragecroprotation
	Providing Agriculture Input subsidy		
	Strategizing the storage and supply of seeds, fertilizers and pesticides		
	Working out ecological betterment of the areas		
	Organizing the irrigation facilities		
<b>Animal Husbandry</b>	Working out alternative cropping programme and activities		
	Establish and practice protocols for Early Warning approval and dissemination.	Preparation of plans for provision of adequate drinking water supply for cattle during scarcity.	Publicizing protective techniques through pamphlets and posters, for safeguarding poultry and cattle during heat wave.
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks	Ensuring sufficient stock of	

	and measures to reduce the risk. Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.	medicine in all veterinary hospitals.	
<b>Fisheries Department</b>	Training and exposure to fish farmers in scientific aquaculture, Renovation of water bodies through Panchayats,		
<b>Bharat Sanchar Nigam Limited</b>	Nominate a nodal officer for disaster management.		
	Standby arrangements for temporary electric supply or generators		
	Sending alert messages during emergencies.		
	Awareness to the officials for the safety of life, material, equipment and for this placement of the items at safe places.		
<b>Electricity Department</b>	To promote the schemes on non- conventional energy sources.		
<b>Fire Department</b>	Promotion of fire safety standards		
	Organising awareness and training		
	Active involvement in disaster management activity, identify the voluntary workers from NGOs, Educational institutions and provide them training.		
<b>Health Department</b>	Prepare and Implement inter-sectoral District Health Plan including drinking water, sanitation & hygiene and nutrition.	Adoption of heat-driven examination techniques at local hospitals as well as urban health centres.	Designing and initiation of programs and efforts for training and capacity building regarding communication on illness due to heat, for medical staff members at PHC's, UHC's. This also includes field and staff workers, nursing staff, paramedics, ANM's and ASHA workers.
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
<b>Home Guard Department</b>	District based training centre for the training of the soldiers		
<b>Irrigation Department</b>	Improve in the field of more tube well facilities to the people so that people total dependence on the monsoon should reduce.		
<b>Public Health Engineering Department</b>	Establish and practice protocols for Early Warning approval and dissemination.	Identify and establish drinking water sources in	Awareness generation and capacity building trainings of officials
	Establish mechanisms for the delivery of safe drinking water, halogen tablets, and bleaching		

	powder in the relief camps/shelters in disaster probable areas.	vulnerable location	on Dos and Don'ts in Heatwave
	Awareness to the officials for the safety of life, material, equipment and for this, placement of the items at safe places.		
<b>Food Corporation</b>	Coordinate with Supply Department to ensure that all safety measures are in place for proper storage, transportation and distribution of supplies.	Ensure nutritious food supply in vulnerable areas and in storage houses	
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		
<b>Municipal Corporation</b>	Provide clean drinking water in vulnerable areas	Dissemination of text messages during a 'heat alert' for sending warning to vulnerable residents residing in areas of high risk.	Identification and mapping of risk prone areas consisting of vulnerable group is especially homeless, destitute and aged people in order to focus on mitigation practices during the heat wave period.
<b>Water Resources Department</b>	Scope the budget for the maintenance of embankments, sluice gates, lock gates etc. under different categories.		Awareness generation and capacity building trainings
	Define standards/ benchmarks to measure department's performance on risk reduction activities and emergency response capacities.		
	Build awareness among the departmental staff, communities and the key stakeholders engaged with the department on potential disaster risks and measures to reduce the risk.		

Table 25 Showing Prevention Mitigation and Preparedness Actions for Heat Wave

## Chapter 6 Capacity Building and Training

Developing a DDMP without building capacity or raising awareness amongst stakeholders can be detrimental to the development of a successful and sustainable plan. Stakeholders and communities are critical components to a successful, long-term, sustainable disaster management plan. Capacity Building develops and strengthens skills, competencies and abilities of both Government and non-government officials and communities to achieve their desired results during and after disasters, as well as preventing hazardous events from becoming disasters. Capacity can be perceived as the method and plans for achieving a goal and therefore capacity building/development refers to the medium in which those objectives can be achieved. The UNISDR defines capacity building as “*the process by which people, organizations and society systematically stimulate their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems and institutions*”<sup>8</sup>. Capacity building serves as an integral component of disaster risk reduction. Lack of adequate capacities amongst all the concerned stakeholders proves to be a major hurdle in successful implementation of disaster mitigation and recovery programmes. Assessing vulnerable sections of society becomes a significant step in strategizing for disaster risk reduction and capacity building at the community level.

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

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

### a. Institutional capacity building

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

As per the need of district administration BSDMA is keen to provide capacity building trainings to meet emergencies. Following are the mass training program carried out by BSDMA<sup>9</sup>;

1. Master trainers training program for the training of sailors and boat owners;
2. Training programs of surveyors and registrars for survey / registration of boats;
3. Training for retrofitting techniques for engineers / architects ;
4. Training program of Mukhiya, Sarpanch and other Panchayat representatives on 'Disaster Risk Reduction and Management'
5. Vocational Training on Disaster Management and Risk Reduction and Management of Bihar Administrative Service Officers
6. Four day training program of veterinarian on management of animals in disaster

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<sup>8</sup>[http://www.rootchange.org/about\\_us/resources/publications/CADRI\\_brochure%20final.pdf](http://www.rootchange.org/about_us/resources/publications/CADRI_brochure%20final.pdf)  
(Accessed on 24/8/2017).

<sup>9</sup><http://bsdma.org/Training-Workshops.aspx?id=1>

7. Vocational Training Program on Disaster Management and Risk Reduction in flood prone areas / areas Block Development Officer / Circle Officers
8. School safety; etc.

Please refer list of various training programme <http://bsdma.org/Training-Workshops.aspx?id=1> .

### **b. Community- including CBOs and PRIs**

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

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

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

### **c. Professionals**

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

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

#### **Professionals should impart training on following points:**

- Construction and retrofitting techniques for disaster resistant buildings
- First aid and Post disaster health problems
- communication and damage assessment
- search and rescue
- emergency operation centre

### **d. Training Institutes and other facilities**

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

### **e. Awareness Generation**

Awareness programs for disaster risk reduction are essential for the mobilization and participation of stakeholders, professionals and citizens in prevention strategies and risk mitigation of East Champaran District. Awareness program includes the understanding the prevailed risk of district and measures to control the risk with available resources, in partnership with other stakeholders of the district. The various channels utilised to build community awareness are mentioned below.

- i) Schools
  - a) Gram Shiksha Samiti
  - b) Shiksha Abhbhvak Meeting
  - c) Eco Clubs
  - d) Paryavaran Mitra Clubs
  - e) Meena Manch
  - f) Baal Sansad

- g) Scouts & Guides
- ii) Colleges
- NSS
  - NYKS
  - NCC
- iii) Gram Vikas Shibir
- iv) Police personnel at ground/Panchayat level.
- v) Civil Defence volunteers (after East Champaran becomes a Civil Defence district)
- vi) NGOs and CBOs.
- vii) PRIs
- BAS Officers given tips on disaster management
  - बिहार प्रशासनिक सेवा के पदाधिकारियों का आपदा प्रबंधन एवं जोखिम न्यूनीकरण पर व्यावसायिक प्रशिक्षण हेतु हस्तपुस्तिका -II
  - आपदाजोखिमन्यूनीकरणएवंप्रबंधनपरमुखिया, सरपंच एवं अन्य पंचायत प्रतिनिधियों के प्रशिक्षण की हस्तपुस्तिका
  - Training of Engineers 38 Districts of Bihar on Earthquake Resistant Buildings Reading Material (15 Presentations)
  - Training of Engineer in Chief, Chief Engineer and Superintending Engineer on Earthquake Resistant Buildings Reading Material (Presentations)
  - मुख्यमंत्री विद्यालय सुरक्षा कार्यक्रम अंतर्गत विद्यालय सुरक्षा पखवाड़ा हेतु प्रशिक्षण मोड्यूल
  - मुख्यमंत्री विद्यालय सुरक्षा कार्यक्रम ) सुरक्षित शनिवार - ( शिक्षकों /प्रशिक्षकों हेतु संदर्भ पुस्तिका
  - आगजनी एवं भूकंप से बचाव हेतु माँक-ड्रिल मार्गदर्शिका (शिक्षकों एवं बच्चों के लिए)
  - मुख्यमंत्री विद्यालय सुरक्षा कार्यक्रम ( सुरक्षितशनिवार ) - शिक्षकों/ प्रशिक्षकों हेतु संदर्भ पुस्तिका

## Resources:

To counter the emergencies/disasters occurring abruptly we need to have ourselves fully capable with all the needful equipment's/devices under our best possible resources. Thus, with the assistance of our capable resources and round the clock support we can avert the uninvited natural/unnatural disaster's happening around us. In this regard, State govt has developed a web portal (BSDRN), wherein entire relevant information has been kept in thereto.

SR. NO	EMERGENCY SUPPLY	NO OF ITEM
1	AMBULANCE (ALS)	1
2	AMBULANCE (BLS)	53
	<b>MEDICINE</b>	
3	ARV	114
4	ASVS	286
5	COMPOUND SOUDIUM LACTATE (RINGER LACTATE)	983
4	HALAZONE TAB	2500
7	LIME BUFFER	20
8	METRONIDAZOLE INJECTION	200
9	METRONIDAZOLE TAB	20700

10	ORS	96100
11	PARACETAMOL TAB	19800
12	SODIUM CHLORIDE AND DEXTROSE	380
13	SOUDIUM CHLORIDE (NORMAL SALINE)	860
14	ZINC SULFET	7000
	<b>HOSPITAL</b>	
15	CHC	16
16	SH	1
17	PHC	9
18	SDH	100
19	SADAR HOSPITAL	100
20	COMMUNITY BUILDING	221
21	FOOD	96
	<b>TRANSPORT</b>	
22	TRUK	2
23	PICKUP	6
24	TEMPOO	1
25	TRACTOR	2
	<b>SKILL MAN POWER</b>	
26	RAJ MISTRI	135
27	GOTAKHOR	23
28	VOLNTEER	4
	<b>SEARCH AND RESQUE</b>	
29	Aluminium Ladder	9
30	AXE	6
31	B.A SET (BREATHING APPARATUS)	8
32	Boat	222
33	BOLT CUTTER	17
34	Chisel 01"	8
35	CROW BAR	13
36	Crow Bar 36"	9
37	CUTTING PILAS	7
38	D.C.P FIRE EXTINGUISHER	14
39	DG Set	50
40	DOOR BREAKER	3
41	ELECTRIC TORCH	4
42	Electric Vibrator	168
43	Fire entry suit	8
44	FIRE EXTINGUISER (ABC TYPE)	39
45	Fire Extinguisher 20 lbs	3
46	FIRE MAN AXE	5
47	FIRE MIST-TECHNOLOGY	23
48	Fire Proxy suit	2
49	Fire Tender Capicity 4500 Ltr	2
50	FOAM TYPE	13
51	GENERATER	1

52	hammer	19
53	HOGE PIPE	71
54	Hydraulic Hyundai Excavator (Pokelen)	26
55	Hydraulic Tata Hitachi Excavator (Pokelen)	19
56	Hywa Truck	44
57	Inflatable boat with OBM (FRP)	9
58	Inflatable Lighting Tower (Ashaka)	1
59	Jack with 5 Ton Lift	6
60	JCB	36
61	LADDER	15
62	LARGE AXE	5
63	LEATHER HAND GLOVES	9
64	Life Jackets	410
65	MANNUAL COMBI TOOLS	2
66	Mixture Machine	74
67	Mixture Mini	7
68	Net Big	4
69	PICKAXE	9
70	Ply Cutter Machine	72
71	Polythene sheets	27525
72	ROPE	28
73	Satellite phone	4
74	SHOVEL	7
75	Silling Hook	4
76	SPADE	6
77	Spade Kudal	2
78	Tent	184
79	Torch	3
80	Water Tender	23
81	Welding Machine	8
82	WOODEN SAW	9

## Chapter 7 Response Planning

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

### Level 0

L0 denotes normal times, which are expected to be utilized for close monitoring, documentation, prevention, mitigation and preparatory activities. This is the planning stage where plans at all levels from community to the state shall be put in place. Training on search and rescue, rehearsals, evaluation and inventory update for response activities will be carried out during this time.

### Level 1

L1 specifies disasters that are localized. One or few sectors/areas blocks of activity are affected. It can be managed at the district level, however, the state and centre will remain in readiness to provide assistance if needed. The following actions required to be taken during this level.

Sr. No.	Actions	Responsible Dept./Agencies	Time frame
1.	District Magistrate shall declare disaster of L1 in consultation with members of DDMA	DM	Immediately
2.	Activate District Emergency Operation Centre along with Block and Circle level Control Rooms	DDMA	Immediately
3.	Activate Incident Response System at District Level and notify state authority	DDMA	Immediately
4.	Conduct Meeting of members of DDMA along with head of line departments and other stakeholders	DDMA	Immediately
5.	Mobilize the resources available in the district	DDMA & line departments	Immediate
6.	Contact local humanitarian organizations for their assistance for immediate support	DEOC	Immediate
7.	Take updates from the incident area and update the same District Administration	DEOC	Within 2 hours
8.	Conduct Rapid Damage and Needs Assessment and circulate to all concerned	DDMA	Within 2 hours
9.	Media briefing about the scenario	DDMA	Within 2 hours
10.	Prepare detailed assessment report	DEOC	Within 24 hours
11.	Withdrawal of declaration of disaster on normalization of the situation.	DM	As on normalization of the situation

**Table 26 Table Showing Level 1 Disaster Response Actions**

### Level 2

L2 specifies disaster situations that may require assistance and active participation of the state, and the mobilization of resources at the state level. Humanitarian needs are of a sufficiently large scale and complexity that significant external assistance and resources are required. Multi-sectoral response is needed with the engagement of a wide range of humanitarian actors. In L2, the district level resources are insufficient; however, the disaster can be managed with state-level resources.

Sr.	Actions	Responsible	Time frame
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No.		Dept./Agencies	
1.	District Magistrate shall declare disaster in consultation with members of DDMA and call for further assistance of State Government	DM/BSDMA/ DDMA	Immediately
2.	Activate District Emergency Operation Centre along with Block and Circle level Control Rooms	DDMA/ DMD	Immediately
	Activate Incident Response System at District Level and notify state authority	DDMA	Immediately
3.	Conduct Meeting of members of DDMA along with heads of line departments and other stakeholders	DDMA	Immediately
4.	DMD & BSDMA shall activate State Emergency Operation Centre and notify national authority	BSDMA/DMD	Immediately
	Contact humanitarian organizations for their assistance for immediate response	BSDMA/DMD	Immediately
5.	Establish Staging area to collect mobilized resources for deployment to the affected area	DDMA	Immediately
6.	Set up Incident Command Post to monitor and operationalize field activities	DDMA	Immediately
7.	Establish transit camps and temporary shelters and provide all necessary support through response teams	DDMA	Immediately
8.	Conduct Rapid Damage and Needs Assessment and circulate to all concerned	DDMA	Within 2 hours Later
9.	Media briefing about the scenario	BSDMA	Within 2 hours
10.	Prepare preliminary assessment report	DDMA and BSDMA	In first 24 hours
11.	Conduct detailed damage and needs assessment report	DEOC/DDMA	Within 24 hours
12.	Maintain coordination with all stakeholders and keep updating all about situation	DEOC	Ongoing
13.	Withdrawal of declaration of disaster on normalization of the situation.	BSDMA/DMD	As on normalization of the situation

Table 27 Table Showing Level 2 Disaster Response Actions

### Level 3

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

Sr. No.	Actions	Responsible Dept./Agencies	Time frame
1.	Prime Minister shall declare a calamity of sever nature as 'National Calamity' and call for further assistance from national stakeholders for immediate response	PMO/ MHA GOI	Immediately
2.	Activate Incident Response System at District, State and National Level	DEOC	Immediately
3.	Activate State and National Emergency Operation Centre	NDMA and BSDMA DMD and MHA	Immediately
4.	NDMA shall mobilize National Disaster Response Force teams and resources to affected districts. SDRF will also be mobilized tot he affected area	NDMA MHA and DMD	Immediately
5.	Establish inter agency groups to have uniform and	NDMA	Immediately

	well-coordinated response		
6.	Establish Staging areas to collect mobilized resources for deployment to the affected area	DMD/BSDMA and DDMA	Immediately
7.	Set up Incident Command Posts to monitor and operationalize field activities	SDMA, DMD and DDMA	Immediately
8.	Establish transit camps and temporary shelters and provide all necessary support to the affected communities through response teams	Department of Disaster Management and DDMA	Immediately
9.	Media briefing about the scenario	NDMA	Within 2 hours
10.	Convene a regional Inter Agency Group meetings with relevant sector/cluster leads to: <ul style="list-style-type: none"> <li>• discuss coordinated approach</li> <li>• outline priority needs</li> <li>• detail immediate response plans</li> <li>• agree on assessment mechanism, notably joint Rapid Damage and Needs Assessment (Refer Point no- 7)</li> </ul>	NDMA	Within 2 hours
11.	Maintain coordination with all the stakeholders and keep updating all about situation	SEOC and DEOCs	Ongoing
12.	Prepare preliminary assessment report	IAGs	In first 24 hours
13.	Conduct detailed damage and needs assessment report	DMD and DDMA	In first 48 hours
14.	Plan for rescue and relief operations in affected areas	BSDMA and NDMA	In first 72 hours
15.	Withdrawal of declaration of disaster on normalization of the situation.	PM	As on normalization of the situation

Table 28 Table Showing Level 3 Disaster Response Actions

### Activation of Response

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

### Scenario 1 – With Early Warning

1) Nodal agencies responsible for forecasting extreme weather events (like flood and cyclone) issue alerts and warnings accordingly to the District Emergency Operation Centre, which can be directly or via State Emergency Operation Centre.

2) As soon as alerts and warnings have been received, the District Emergency Operation Centre has to be fully activated with minimum 3 staff member, communication system such as telephone, mobile phones, VHF, radio, wireless etc.

Maintain following;

- Maps of highly vulnerable Panchayats
- List of hospitals with their contact number
- Contact number of line department
- Call log register

- 3) First and foremost task is informing the community likely to be affected by the disaster through the warning system set in place (the process of ensuring that warning information is disseminated to the communities is explained further in the Information Dissemination section).
- 4) The District Emergency Operation Centre activates the district/sub-division/block level administration to deploy all necessary manpower and resources to respond to the situation.
- 5) The District Magistrate calls upon the DDMA to proceed with the necessary pre-emptive measures, which may include people's evacuation from risky areas. A comprehensive Standing Order, listing all necessary pre-emptive measures based on the warning, is then prepared.
- 6) Thereafter, follow up action has to be undertaken by all concerned at all levels, encompassing the District Emergency Operation Centre and the sections involved in the Incidence Response System.

**Table 29 Table Showing Scenario 1 with Early Warning**

## Scenario 2 – Without Early Warning

In disaster situations where no early warning signals are available, the primary objective is to mount immediate rescue and relief operations as quickly as possible. The following procedure will be followed in such situations:

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

Table 30 Table Showing Scenario 2 – Without Early Warning

### 7.1. Communication: Alert message and necessary about the disaster

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

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

		facilities to support State and district actions	
NIC	Flood, Cyclone, Earthquake	To coordinate the temporary communication requirements	T+01 hrs

Table 31 Table Showing Communication Response Action

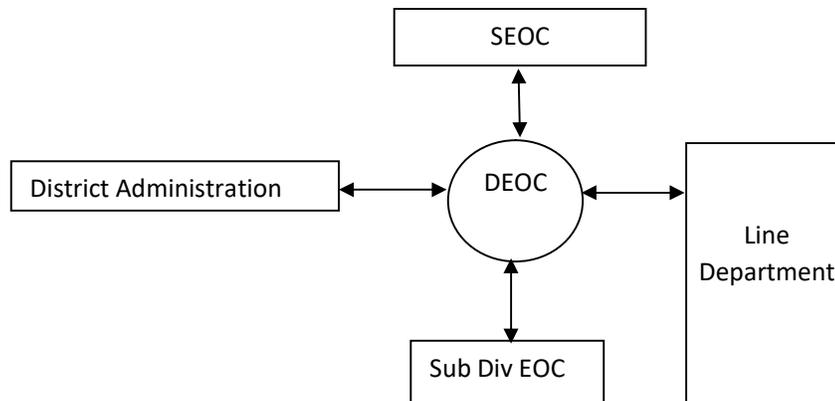
### Role of District Emergency Operation Centre (DEOC)

District Emergency Operation Centre (DEOC) plays major role in any Disaster so it need to empower with state of art operational devices to deal in critical situations like – VSAT, VHF Wireless, GSM, Doppler, SW Radio Receiver, Satellite phone, & other devices.

#### Role of EOC in all aspects –

- Ensure that all warning, communication systems and instruments are in working conditions.
- Receive information on a routine basis from the district departments on the vulnerability of the various places and villages.
- Monitor preparedness measures and training activities.
- Maintain a data base of communication and trained personnel and volunteers who could be contacted at any time.
- Lease with on-site operation centre, State EOC and other emergency services.
- Maintain a web-based inventory of all resources through the India Disaster Resource Network (IDRN) and Bihar state disaster resource network (BSDRN).

#### Communication Model of EOC:



### Operational process:

As per the Aspect of taking quick action on any incident, DEOC of east champaran is being operated in 24X7 manner in the supervision of district administration. Any alert or forecast published by concerned agencies are shared to different line department on top priority basis. Whenever any incident occurs reporting starts till final conclusion. Email, Telephone is used for communication in general situation.

## Chapter 8 Reconstruction, Rehabilitation and Recovery

### From Response to Recovery

The recovery stage encompasses the rehabilitation and reconstruction of the district and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation. The importance of the recovery lies in the valuable opportunity that it holds for building back better or, in other words, implementing measures to reduce the disaster risk to lower levels than previously. In view of this, the recovery is the restoration and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities.

The Recovery Plan is, therefore, focused on building back better by putting in place a coordination mechanism for the activities that need to be performed from over a short-term to medium/long-term recovery period.

#### 8.1. Damage Assessment:

Sectors Affected	Description- methodology	Responsible agencies
Public assets: <ul style="list-style-type: none"><li>- Roads and bridges</li><li>- Culverts</li><li>- Public buildings like hospitals and schools</li></ul>	Multi hazard resistant construction to be followed while reconstruction of public assets. For example <ul style="list-style-type: none"><li>- Hazard resistant buildings to be made with the help of certified engineers.</li><li>- Use of non-shrinking mortar</li><li>- Evacuation plans to be made for the public buildings</li><li>- Non-structural mitigation measures to be taken into consideration</li></ul> Risk sensitive development will be ensured in each of the reconstruction Programme. For example: <ul style="list-style-type: none"><li>- Erosion and flood zone mapping to be implemented</li></ul>	<ul style="list-style-type: none"><li>• Detailed damages and needs assessment: Multi sectoral/ multi-disciplinary teams are to be made which can do a detailed damage and need assessment of the entire area. Key responsible team department is revenue and disaster management department</li><li>• PWD Department</li><li>• Water resource department</li><li>• Health Department</li><li>• Education Department</li><li>• The process of monitoring and manipulation is to be done by BSDMA.</li></ul>

	<ul style="list-style-type: none"> <li>- Detailed geological survey of the land to be used for reconstruction.</li> </ul>	
<p>Utilities</p> <ul style="list-style-type: none"> <li>- Water supply</li> <li>- Electricity</li> <li>- Communication</li> </ul>	<p>Multi hazard resistant construction to be followed. For example:</p> <ul style="list-style-type: none"> <li>- Water pipelines, communication equipment used can be of such material which can resist impact of certain hazards</li> </ul> <p>Risk sensitive development will be ensured</p> <ul style="list-style-type: none"> <li>- Electric and communication junctions to be installed after considering landslide and flood zonation.</li> </ul>	<p>Detailed damages and needs assessment: Multi sectoral/ multi-disciplinary teams are to be made which can do a detailed damage and need assessment of the entire area. Key responsible team department is revenue and disaster management department</p> <ul style="list-style-type: none"> <li>• Water resource department</li> <li>• Energy Department</li> <li>• BSNL</li> </ul>
Housing	<p>Multi hazard resistant construction to be followed.</p> <ul style="list-style-type: none"> <li>- Risk sensitive development will be ensured</li> </ul> <p>Owner driven approach will be preferred. For example:</p> <ul style="list-style-type: none"> <li>- National and State schemes like Pradhan Mantri Awas Yojna (rural/ urban) and Mukhya Mantri Awas Yojna can be included in construction of the individual houses.</li> </ul> <p>Non-structural mitigation measures to be taken into consideration</p> <p>Further loans can be sourced through banks and other financial institution</p>	<p>Arrange for funds from Central government, state government, multi-lateral</p> <ul style="list-style-type: none"> <li>- Panchayat Raj and Rural Development</li> <li>- Municipality</li> <li>- Revenue Department</li> </ul>
Livelihood restoration	<p>Nature, number and types of livelihoods affected</p> <ul style="list-style-type: none"> <li>- Interim and long term strategies</li> <li>- Focus on livelihood diversification</li> <li>- Issues related to most poor people, women, and marginalized sections</li> <li>- Livelihoods of people without assets (labor)</li> </ul>	<p>Develop a detailed recovery plan through multi departmental participation: Specific recovery plan through consultative process of different line department are to be made.</p> <ul style="list-style-type: none"> <li>- Agriculture Department</li> <li>- Fisheries Department</li> <li>- Animal Husbandry Department</li> </ul>

		<ul style="list-style-type: none"> <li>- Revenue Department</li> <li>- Social Welfare Department</li> </ul>
Psychosocial restoration	Provisions like trainings from institute like NIMHANS (National Institute of Mental Health and Neurosciences) Mental hospitals and other specialized institutes. <ul style="list-style-type: none"> <li>- Spiritual leaders can help the community to cope up from the trauma.</li> </ul>	<ul style="list-style-type: none"> <li>- Health Department</li> <li>- Social Welfare Department</li> <li>- ICDS</li> </ul>

Table 32 Showing Damage Assessment Methodology and process

## 8.2. Relief to the victims

The District Disaster Management Authority of East Champaran should formulate the necessary institutional mechanisms for ensuring that each aforementioned parameters and activities related to the recovery stage, including reconstruction and rehabilitation, are performed accordingly. In view of this, they should not only monitor, but also coordinate with the work of NGOs and other agencies so to better utilize the expertise and resources available at the district. It should be noted that external agencies have a time-bound approach and communities may or may not be completely recovered by the time their project ends. Therefore, the Disaster Management Authority is the absolute agency for the recovery process and has to ensure its appropriateness within the district, through planning and constant monitoring of the progress and reporting.

During the recovery process, it is important to ensure that the communities do not get dependent solely on assistance from the local administration. It is necessary to define in advance clear indicators and a plan stating the withdrawal as per the situation in the district. Additionally, multi-disciplinary activities should be incorporated in the recovery process in consultation with the affected community in an institutionalized manner, as this would support in ensuring sustainable development of the community and the district as a whole.

### Tasks to be performed during the Recovery Programme

Build, retrofit, repair and strengthen houses, schools, buildings in the health sector and public buildings affected by the earthquake, through the application of earthquake-resistant technology.

Revive the local economy by providing assistance for agriculture, industries, small business, handicrafts, and regenerate livelihood for the people.

Rebuild and upgrade community and social infrastructure, improve education and health systems, and strengthen social protection measures for weaker sections of the population.

Provide health support to the people injured by the earthquake on a long-term basis and psychological counselling for the people traumatized by the disaster.

Restore lifeline infrastructure of transport networks and utility infrastructure of power and water supply, and reduce their vulnerability to natural disasters.

Support gender empowerment through involving women at all stages in the programme implementation.

Provide support for the children affected by the earthquake, and alleviate social deprivation through an integrated nutrition and education strategy.

Implement a comprehensive disaster management programme, improving the disaster preparedness and emergency response capacity of the government to deal with different types of disasters.

Reduce vulnerability through long-term mitigation programmes through structural and non-structural measures and improve people's resilience through diversification of sources of income generation and asset building.

**Please refer Annexure 9 for Bihar state disaster relief norms**

### 8.3. Restoration of Basic Infrastructures

Basic Infrastructure	Description- methodology	Responsible agencies
Strengthening and retrofitting	This shall be executed during this phase for all the critical lifeline buildings on priority by the PWD – Building department, besides that for canals and embankments by Canal (Irrigation dept.) and WRD, respectively. Building Construction Division of Education Department shall undertake these works for schools.	Public Works Department Water Resource Department Building Construction Division Rural Works Department Education Department
Repair and reconstruction Roads and bridges	The execution shall be undertaken and monitored by the NHAI and the PWD – Roads (State & Rural) as per the execution plan defined during the first segment of recovery phase.	NHAI PWD Roads Municipality
Housing	Development of permanent housing solution for victims happens during this period under National Housing Scheme (IAY & RAY). Additionally, housing solutions may be provided in cooperation and financial support of external agencies such as NGOs, Corporate Social Responsibility department of private companies, etc. The planning and execution has to involve the local community through consultations and assessments while empowering them.	Rural Development
Regeneration of biodiversity	Afforestation initiatives have to be undertaken by Rural Development, Forest and water resource department in the affected areas to regenerate forests and biodiversity. Through convergence of centrally and state sponsored schemes like MGNREGA and under greenery mission chief minister tree plantation and tree protection schemes	Panchayat Raj and Rural Development Department Environment and Forest Department Water Resource Department

Table 33 Showing Actions for restoration of basic Infrastructure

## 8.4. Repair/ reconstruction of life line building

### Social and economic recovery

#### Rehabilitation

During this phase, families placed in temporary shelters due to damage or destruction of their houses or erosion of their land have to be smoothly rehabilitated through requisite infrastructure recovery interventions. Efforts shall be made to rehabilitate these families to locations at least close to the original habitations to keep them in proximity of pre-disaster communities and land.

#### Education

Schools have to be made operational in the shortest span through the post-disaster period.

#### Wage employment

The focus on providing wage employment through MGNREGS should be continued with greater vigour for the affected parts of the district so as to provide economic recovery while original livelihoods such as agriculture outputs are restored to normalcy.

#### Livelihoods

Work towards strengthening livelihoods to be more economically and environmentally sustainable, as well as more resilient to future disasters. In this long-term recovery effort, focus is on livelihoods diversification, creation of alternative income generating activities, providing financial services such as loans and insurance, and strengthening forward linkages with markets for existing and new livelihoods.

#### Credit

This shall be done by formation of self-help groups (SHGs) for affected communities so as to support in buying or rebuilding assets such as domestic animals, farm equipment, craft equipment and others by providing microcredit. This is critical to reduce the dependency of the population in the district administration for support.

#### Micro insurance

Increase of the coverage of micro insurance in order to include more farmers and livestock owners and their productive lands/livestock to ensure risk transfer benefits in case of damages from any future disasters.

#### Agronomic rehabilitation

The district administration has to ensure that soil testing labs research and formulate necessary steps required for agronomic rehabilitation and may coordinate with NGOs working in this field to channelize their support. Additionally, it is essential to suggest cropping patterns, suitable compositions of fertilizers, pesticide, etc., depending upon the changes in soil due to the disaster and develop a model of rehabilitation of the same.

### Economic recovery

The recovery of economic dimension is fundamental for the success of the entire recovery stage as it brings sustainability for the programme and closely supports the principle of build back better by reviving the local economy.

#### Risk transfer

Crop and livestock insurance beneficiaries have to be identified during early recovery stage sp. to provide the affected people with money for meeting their immediate expenditures and necessities.

#### Wage employment

This shall make available on high priority to people of affected areas to give access to money soon after disaster response when the withdrawal of relief supplies generally takes effect. MGNREGS shall be implemented to provide temporary wages while using this to build assets that could be beneficial for their long-term recovery.

#### Banking operations

Banking operations affected due to disaster must continue with minimal period disruption so that communities are able to draw money deposited via MGNREGS work, insurance amounts besides

being able to avail regular banking benefits.

### **Relocation**

When the recovery involves relocation of the community, the relocation site should be in close proximity to the existing sources of livelihood (places of work, agricultural farms, livestock facilities, markets, etc.). This ensures favourable conditions for livelihood generation and other economic activities.

Various measures such as seed capital, micro finance and other related schemes should be used for the social and economic recovery of the district. Some activities to support livelihood generation and improvement that can be provided by schemes under the Welfare Department are given below:

- Training tailoring to SCs/BCs destitute/ widowed women/girls;
- Upgrade of typing and data entry skills of the SC/BC unemployed youth through computer training;
- Financial assistance for training to scheduled castes candidates in unorganised sector through private institutions;
- Creation of employment generation opportunities by setting up employment-oriented institutions/ training programme;
- Other schemes such as MGNREGS, PMGSY, Hunar se Rojgar Yojna can also be used for livelihood generation.

The district administration may also coordinate with the Animal Husbandry and Dairying Department to ensure alternate livelihood generation activities by providing cows and buffaloes. Various schemes under Animal Husbandry and Dairying Department can be used for the same:

- Schemes for employment opportunities to scheduled castes families by establishing livestock units and insurances of their livestock (SCSP);
- Special employment to educated/ uneducated young men/women of rural area through dairy development;
- Self-employment generation in dairy sector by establishing hi-tech/ mini dairy units; schemes for salvaging and rearing of the male buffalo calves.
- For further information about the schemes, one may refer to the Disaster Risk Reduction (DRR) Plan.

## Chapter 9: Budget Financial Resources

The central govt. has created the National Disaster Response Fund and at the state level, State Disaster Response Fund (SDRF) has been created. In the SDRF, the central govt. provides 75% of the amount and 25% of the matching fund has to be put in by the state.<sup>10</sup> State governments are responsible for the establishment of State and District Disaster Response and Mitigation Funds, under section 48 of Disaster Management Act, 2005.

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

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

National Disaster Response Fund and State Disaster Response Fund is also created for meeting the expenses for emergency response, relief and rehabilitation and to facilitate immediate relief in case of any disaster.

Funds meant for several other heads like MNREGA, BRGF, Indira Awas Yojna, departmental projects etc. can be explored for utilizing in disaster related matters.

### 9.1. Schemes and programmes supporting DRR

National Disaster Relief Fund and State Disaster Relief fund are key sources where department can shout and utilise.

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

S. No.	Scheme	Actions	Eligibility	Department
1	Chief Ministers' Crash Seed Programme	Distribution of Foundation seed of selected crops in small packets in half the cost to the two farmers selected from each village for each selected crop	Block Agricultural Officer selects the beneficiary and assists farmers in seed production	Agriculture Department
2	Beej Gram Yojna	Desirous farmers of selected villages are given foundation seed at half the cost, Seed storage bins of 5 qtrs. capacity given on subsidy	Block Agricultural Officer selects the villages for the Yojna and assists farmers in seed production	Agriculture Department
3	Harit Kranti Yojna	-	-	Agriculture Department
4	Jaivik Kheti Protsahan Yojna	-	-	Agriculture Department

<sup>10</sup> The State Disaster Management Plan, Bihar

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

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

		hazard-prone,are allotted money for constructing small shelters for the villagers. According to requirements, estimate has been prepared and then technical and administrative sanctions are done and money is allotted for construction for the one financial year.	government land where construction is going to happen, if not, then the owner should be ready to give the land to Bihar Government without any compensation.	Development Agency
24	Gramin Punnar Uthhan Scheme linked with MGNREGA	All the rural area where ponds etc. are made for the fisheries production, poultry production and production of forest products. According to requirements, estimates have been prepared and then technical and administrative sanctions are done and money is allotted for construction for the one financial year.	Person should be under BPL category or has land less than 1 acre.	District Rural Development Agency
25	Indra Awas Yojna	Rs. 70000 per house hold	Person should be under BPL category or if people are affected by any disaster or by Kalazar, then the APL households can also avail the benefits	District Rural Development Agency
26	Waste Management Fund	Estimated Amount	It is given every year to each Municipal Cooperation	Municipal Corporation of East Champaran
27	DFID	Two JCBs are provided by government in 2013	-	Municipal Corporation of East Champaran
28	Anti-Erosion Scheme	Estimate has been given every year for funds	Erosion affected area development	Water Resource Department

Table 34 Showing State level Schemes and Programmes supporting DRR

## 9.2. Central government plan and non-plan schemes

### ➤ National Schemes for Disaster Risk Reduction

Various national schemes that can be useful for East Champaran district in strengthening the concerned departments in disaster risk reduction.

Sr. No.	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 Collector for, works to the tune of Rs.5 Crores per annum to be taken up in his/her constituency. The Rajya Sabha Member of Parliament can recommend works in one or more districts in the State from where he/she has been elected.	<ul style="list-style-type: none"> <li>- Mitigation and prevention through creation of durable community assets based on the locally felt needs</li> <li>- As per Para 2.8 of the guidelines on MPLADS, Hon'ble MPs can recommend up to a maximum of Rs. 1 crore for rehabilitation work for the affected areas anywhere in the country in the event</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of flood control embankments</li> <li>- Construction of common shelters for wind cyclones, Floods and handicapped</li> <li>- Purchase of motor boats for flood and cyclone prone areas</li> <li>- Fire tenders for Government organization</li> <li>- Retrofitting of essential lifeline buildings, viz Govt. hospitals, Govt. Schools and public buildings to be used as shelters in an emergency.</li> </ul>

			of calamity of severe nature.	<ul style="list-style-type: none"> <li>- Strengthen Early Warning Systems for effective disaster mitigation.</li> <li>- Construction of roads, approach roads, link roads, Pathways.</li> <li>- Drinking water facility</li> </ul>
2.	Pradhan Mantri Gramin Awaas Yojana	Provides financial assistance to rural poor for constructing their houses themselves	<ul style="list-style-type: none"> <li>- Providing disaster resilient housing in areas prone to natural calamities</li> <li>- To reducing risk of vulnerable population in Pre-disaster situation</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of disaster-resilient houses</li> </ul>
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	<ul style="list-style-type: none"> <li>- To minimize economic vulnerability of the people Pre-disaster situation</li> <li>- Useful for livelihood generation in Post-disaster situation</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of river embankments</li> <li>- Construction of roads in remote areas</li> <li>- Construction of multi-hazard shelters</li> </ul>
4.	Swarnjayanti Gram Swarojgar Yojna (SGSY)	Bring the assisted poor families above the poverty line by organizing them into Self Help Groups (SHGs) 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.	<ul style="list-style-type: none"> <li>- To minimize economic vulnerability of the people Pre-disaster situation</li> <li>- Useful for livelihood generation in Post-disaster situation</li> </ul>	<ul style="list-style-type: none"> <li>- Creation of SHGs</li> </ul>
5.	Pradhan Mantri Gram Sadak Yojna (PMGSY)	Good all-weather road connectivity to unconnected villages	<ul style="list-style-type: none"> <li>- Useful in pre as well as post disaster situation for road connectivity</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of roads in remote areas</li> </ul>
6.	National Health Mission (NHM) (NRHM and NUHM)	To provide accessible, affordable and quality health care to the urban and rural population, especially the vulnerable groups.	<ul style="list-style-type: none"> <li>- One of the most important component in Pre as well as post disaster situation to provide universal access to health care facilities</li> </ul>	<ul style="list-style-type: none"> <li>- Rapid Action Force for Emergency Medical Response</li> <li>- Emergency ambulances</li> <li>- Preparedness for mobile Field Hospitals</li> </ul>
7.	Scheme for Animal Health Care in the State	Schemes under Department of Animal Husbandry	<ul style="list-style-type: none"> <li>- To control Animal epidemics</li> </ul>	<ul style="list-style-type: none"> <li>- Vaccination drives</li> </ul>
8.	JnNURM	To improve the quality of life and infrastructure in the cities	<ul style="list-style-type: none"> <li>- To develop and strengthen urban infrastructure to minimize urban risk</li> </ul>	<ul style="list-style-type: none"> <li>- Development of river embankments</li> <li>- Construction of roads</li> <li>- Storm water drainage</li> </ul>
9.	Rashtriya Swasthya Bima Yojna	To provide health insurance coverage for Below Poverty Line (BPL) families.	<ul style="list-style-type: none"> <li>- Insurance and Risk Transfer</li> </ul>	<ul style="list-style-type: none"> <li>- Insurance (Disaster Insurance)</li> </ul>
10.	Pradhan Mantri	To enable better living	<ul style="list-style-type: none"> <li>- Minimizing risk by</li> </ul>	<ul style="list-style-type: none"> <li>- Construction of disaster</li> </ul>

	Awas Yojna (PMAY)	and drive economic growth stressing on the need for people centric urban planning and development.	constructing Disaster Resistant housing in Urban areas	resistant houses
11.	Pradhan Mantri Suraksha Bima Yojna (PMSBY)	An accidental Death and Disability insurance scheme	- Insurance and Risk Transfer	- Insurance
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

Table 35 Showing central government sponsored Schemes for Disaster Risk Reduction

### ➤ State Schemes for Disaster Risk Reduction

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

Sr. No.	Name of the schemes	Actions	DRR	Activities for DRR
1.	Mukhya Mantri Seven Nischay Scheme	Ensure piped drinking water, youth and women empowerment, electrification, road and drainage and toilet to household	Capacity building and awareness generation of youth and disaster resilient infrastructure development	-
2.	Mukhya Mantri Gram Sadak Yojna (MMGSY)	Good all-weather road connectivity to unconnected villages	- Useful in pre as well as post disaster situation for road connectivity	- Construction of all-weather roads in remote areas
3.	Mukhya Mantri Nihshaktjan Swarojgar Yojna	The scheme extends loans for self-employment to persons with disabilities.	- Livelihood generation - For most vulnerable group	- Livelihood generation
4.	Flood Protection Works	Construction and repair of river and canal embankments, Construction, extension and repairing of canals and Providing storm water drainage system	- Important in flood prone areas to minimize flood risk	- Construction and strengthening of river and canal embankments - Anti-Erosion work - Village protection work
5.	Foot and Mouth Disease Control Programme	To prevent, control and contain Foot and Mouth Disease	- To prevent animal epidemics during and after disaster	- Organize HS BQ (Haemorrhagic Septic aemia and Black Quarter Combined) vaccination drives
6.	Samarthya Scheme	The scheme aims at physical, social, economic and psychological rehabilitation of Persons with disabilities.	- Provision of aids and appliances such as tricycles, hearing aid, callipers etc.	- Providing aids and appliances such as tricycles, hearing aid, callipers etc. to vulnerable and disaster affected population.
7.	Assistance to Disabled Persons for Purchase/Fitting of Aids and	To assist the needy disabled persons in procuring durable, sophisticated and scientifically manufactured, modern, standard aids and appliances	- Provision of assistance to the needy disabled persons in procuring	- Providing of assistance to the needy disabled persons in procuring durable, sophisticated

	Appliances (ADIP Scheme)	that can promote their physical, social and psychological rehabilitation, by reducing the effects of disabilities and enhance their economic potential.	durable, sophisticated and scientifically manufactured, modern, standard aids and appliances	and scientifically manufactured, modern, standard aids and appliances
8.	Janani Evam Bal Suraksha Yojana	Reduce maternal and neo-natal mortality by promoting institutional deliveries	- To provide better health care facilities	- Provide assistance to disaster affected families
9.	National Vector-borne Disease Control Programme	Prevention and control of vector borne diseases i.e. Malaria, Dengue, Lymphatic Filariasis, Kala-azar, Japanese Encephalitis and Chikungunya	- To prevent epidemic	- Organize community awareness Programmes and vaccination drives

Table 36 Showing Statesponsored Schemes for Disaster Risk Reduction

### 9.3. Other Options

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

## Chapter 10 Monitoring, Evaluation and Updation of DDMP

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

### 10.1. Authority for maintaining & reviewing the DDMP

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

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

### 10.2. Proper monitoring & evaluation of the DDMP

Half-yearly meeting will be organized by the DDMA under the chairmanship of the Chairman, DDMA, and East Champaran to review disaster management activities in the state and updating the DDMP accordingly. All concerned departments and agencies have to participate and give recommendations on specific issues on Disaster Management and submit their updated reports quarterly.

### 10.3. Post-disaster evaluation mechanism for DDMP

The DDMA Chairman shall make special arrangements to collect data on a particular disaster irrespective of size and vulnerability. This post disaster evaluation mechanism shall be set up with qualified professionals, experts and researchers and the collected data shall be thoroughly crosschecked and documented in the EOC for further reference. The DDMA will evaluate the DDMP by conducting meetings and consultation with all stakeholders.

### 10.4. Schedule for updation of DDMP:

Besides the above (2 and 3) procedure of updating the DDMP shall be updated by:

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

The updated data of DDMP will also be maintained at the DEOC website, ready for use in any situation under the supervision of DDMA, East Champaran. The Chairman, DDMA will ensure regular updation of the DDMP by consulting the nodal officers of the frontline departments will update it on a biannual basis taking into consideration:-

- ❖ Inventory of equipment in the district (DDMRI),
- ❖ Human Resources, their addresses and contact details (DDMRI)
- ❖ Valuable inputs from actual disasters and updating Matrix of past disasters and HVCRA within the District

- ❖ Major change in the operational activities and location through SOPs & Checklists
- ❖ Lessons learnt from training, near-missed incidents
- ❖ Inputs from mock drills/ simulation exercises
- ❖ Changes in disaster profile
- ❖ Technological developments/ innovations in identifying potential hazards
- ❖ Updation of databases using new technologies like GIS
- ❖ Change in demography of surrounding population
- ❖ Changes in geo-political environment

Propose Timeline for updation of Disaster Management Plan

Sr. No	Month	Purposed Activities
1	October	Review of DDMP by frontline departments
2	October- November	Submission of recommendations to DDMA
3	November-December	Amendments are distributed to all stakeholders
4	December- January	Submitted to SDMA for Approval/Uploading of updated plan at DDMA/SDMA website

Table 37 Showing timeline for updation of district disaster management plan

### 10.5. Uploading of updated plans at DDMA/SDMA websites:

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

### 10.6. Conducting of mock drills:

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

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

#### 1. The Responsible parties for organizing district drills

Mock Drills will be conducted within District East Champaran at various levels:

##### Level 1: District Level

Conducting of District level Mock drills will be the responsibility of the District Magistrate, East Champaran, along with Additional District Magistrate East Champaran, in association with Key Participants Involved in Conducting a Mock drills the incident of disaster may be:- DDMA comprising of DM; ADM; SP; EE(PWD, PHD, Electricity);

- CMO, President Zila Parishad.
- Revenue Department
- SDM (C), Circle officer, Block Development Officer
- Municipal Council/ Naggar Parishad
- Elected representatives of Panchayat Samiti -Sarpanch, Gram Sevak,
- Fire Brigade Personnel’s
- Home Guards, Volunteers.

- Transport Department
- Food and Civil Supply Department
- Para- military forces, NDRF, SDRF as the situation of the incident may demand

#### **Level 2: Sub Divisional Level**

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

#### **Level 3: Block Level**

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

#### **Level 4: Panchayat Level**

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

#### **Level 5: Departmental Level**

At the Departmental levels the HOD's of the concerned departments/ units are responsible for the on-site mock drills and off-site drills with the district administration for their respective departments and concerned areas.

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

### **2. Schedule for organizing drills**

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

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

## **10.7. Monitoring & gap evaluation:**

### **1. Check on Personnel's involved in Execution of DDMP are trained with latest skills**

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

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

### **2. Check on-site / off site Plans of Major Accidental Hazard Units**

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

