

DISTRICT DISASTER MANAGEMENT PLAN
BARGARH
2022



VOLUME – I



OSDMA

Prepared by:

District Disaster Management Authority (DDMA)

Bargarh - Odisha

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Preface



The Geographical position of Bargarh district with its natural rivers and mountains plays a significant role in shaping the history, culture and religion of the people living in this region since the pre-historic period.

The District has experienced many disasters like Drought, Pest attack, flood, Heat wave, Lighting, hailstorm, Whirl Wind, Fire Accident, Drowning & Snake Bite during past years causing widespread loss of life, livelihood and property.

The District Disaster Management Plan (DDMP) is the guide for achieving the objective i.e mitigation, preparedness, response and recovery. This plan is prepared to respond to disasters with sense of urgency in a planned way to minimize human, property and environmental loss. Keeping the requirements of the District for Disaster Management & fulfilling the mandates specified in the **section 31 of Disaster Management Act 2005 (DM Act)** the District Disaster Management Authority (DDMA) has taken steps for updating the DDMP. Accordingly, a meeting of DDMP was organised for updating the plan and review the disaster plan on 21st July,2022. Keeping in view of past disaster experiences like drought, pest attack during Khariff and as per Govt. notifications like implementation of School Safety Policy, Climate Change, Safety & Security of Child Care Institutions (CCIs), Forest Fire Vulnerability, District Crisis Group & Off site plans, status of Dams & Dam burst situation, fire safety in high rise buildings etc are included/updated in the plan.

In this context, I am pleased to share the District Disaster Management Plan 2022 Bargarh District in two volume viz. volume-I and Volume-II as Chairman of DDMA, Bargarh. I would like to thank Sri Mirdha Toppo, ADM cum CEO, DDMA, Bargarh, District Emergency Officer, District Project Officer, OSDMA and staff of District Emergency Operation Centre for their untiring efforts in bringing up this document. My special thanks to all the officials of Line Departments of the district who have cooperated with sharing of information for updating DDMP.

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Abbreviation

ADM	Additional District Magistrate
CCA	Climate Change Adaptation
CDPO	Child Development Programme Officer
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DRR	Disaster Risk Reduction
DEOC	District Emergency Operation Centre
HRVA	Hazard Risk and Vulnerability Analysis
AAY	India Awas Yojna
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWCs	Anganwadi centre
BEOC	Block Emergency Operation Centers
BNRGSK	Bharat Nirmak Rajiv Gandhi Seva Kendra
BSF	Boarder Security Forces
CDVO	Chief District Veterinary Officer
CHCs	Community Health Centre
CIFS	Central Industrial Security Forces
CPMF	Central Paramilitary Forces
CWC	Central Warehouse Corporation
DDA	Deputy Director Agriculture
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DDMT	District Disaster Management Teams
DEOC	District Emergency Operation Centre
DIP	District Irrigation Plan
DLCNC	District Level Committee on Natural Calamity
DM Act	Disaster Management Act 2005
DRR-CCA	Disaster Risk Reduction and Climate Change Adaptation
FIR	First Information Report
GPDP	Gram Panchayat Development Plan
HH	Households
IAY	Indira Awas Yojna
IEC	Information Education and Communication
IMR	Infant Mortality Rate
IPPE	Intensive participatory Planning Exercises
KMS	Kharif Marketing Season
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHUs	Mobile Health Unit
MMR	Maternal Mortality Rate
NABARD	National Bank for Agriculture and Rural Development
NDMA	National Disaster Management Authority
NDRF	National Disaster Response Force

NDRFs	National Disaster Response Funds
NEC	National Executive Committee
NFSA	National Food Security Act
NGOs	Non-Government Organisation
NH	National Highways
NRLM	National Rural Livelihood Mission
ODF	Open Defecation Free
ODRAF	Odisha Disaster Rapid Action Force
OSDMA	Odisha State Disaster Management Authority
OSWC	Odisha State Warehouse Corporation
PACS	Primary Agriculture Cooperative Society
PHCs	Public Health Centre
PWD	Person with Disability
RAT	Railway Affected Tank
RAW	Railway Affected Work
RMC	Regulated Market Committee
SDG	Sustainable Development Goal
SDHs	Sub-Divisional Hospital
SDMA	State Disaster Management Authorities
SDRF	State Disaster Response Funds
SDVO	Sub-Divisional Veterinary Officer
SEC	State Executive Committee
SH	State Highways
SHGs	Self Help Group
SLCNC	State Level Committee on Natural Calamity
SoP	Standard Operating Procedure
UNDP	United Nation Development Programme
VDMC	Village Disaster Management Committee
RTO	Regional Transport Officer
MVI	Motor Vehicle Inspector
CSO	Civil Supply Officer
ACSO	Assistance Supply Officer
SI	Supply Inspector
MI	Marketing Inspector
DSWO	District Social Welfare Officer
SDWO	Sub-divisional Welfare Officer
DAO	District Agriculture Officer
AAO	Assistant Agriculture Officer
CDMO	Chief District Medical Officer
LI	Life Stock Inspector
DLO	District Labour Officer
LI	Labour Inspector
DAO / TO	District Accounts Officer / Treasury Officer

Chapter – 1

Introduction: -

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.

Section 31 of Disaster Management Act 2005 (DM Act) makes it mandatory to have a disaster management plan for every district. DDMP shall include Hazard Vulnerability Capacity and Risk Assessment (HVCRA), prevention, mitigation, preparedness measures, response plan and procedures.

1.1 Aims and Objectives of the DDMP:

An indicative list with possible plan objectives is given below:

- i. To identify the areas vulnerable to major types of the hazards in the district.
- ii. To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its effects.
- iii. To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- iv. To enhance disaster resilience of the people in the district by way of capacity building.
- v. Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
- vi. Manage future development to mitigate the effect of natural hazards in the district.
- vii. To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- viii. To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.

- ix. To adopt disaster resilient construction mechanism in the district by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development.
- x. To make the use of media in disaster management.
- xi. Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at district level and local authority.

The District Disaster Management Plan (DDMP) is the guide for achieving the objective i.e. mitigation, preparedness, response and recovery. This Plan needs to be prepared to respond to disasters with sense of urgency in a planned way to minimize human, property and environmental loss.

1.2 Preparation and Approval of DDMP:

As defined in Section 30 of DM Act 2005, DDMA shall act as the district planning; coordinating and implementing body for disaster management and take all measures for the purpose of disaster management in the district in accordance with the guidelines laid down by the National Authority and the State Authority.

The district Collector will discuss the modalities and seek views for preparation of a holistic plan in the meeting of the DDMA held in the month of January and to prepare the plan by the end of February every year.

After finalisation the District Authority shall send a copy of the District DM plan to the State Disaster Management Authority for approval.

The District Disaster Management Plan should be reviewed and updated annually.

1.3 Evolution of DDMP in brief: Evolution, Procedure and Methodology to be followed for preparation of DDMP

Methodology

Preparation of a multifaceted plan document is neither possible with a single agency nor an individual. The district has been taken various measures to prepare this document and make it as perfect as possible. The major steps involved in preparing the plan document include the following steps:

Consultation with district and block level officials

The district followed a comprehensive process to prepare the DDMP, 2022. prescribed formats were shared (vide letter No. 4808/Emg. dated 26/04/2022) with the line department officials to submit the information and also telephonic conversation was conducted in individual level to the line departments to collect the information.

Key processes

Besides, the district adopted followed key processes like Review, Situation

Analysis Hazard Analysis, Vulnerability Assessment and Opportunity Analysis. Detailed processes with team entrusted for each process are explained at Chapter-12.1.

Review

The information submitted by all concerned was compiled and report was drafted by DEOC, Bargarh under the close supervision of Addl. District Magistrate. The draft plan was shared with the officers of the line department to review and seeks suggestions for improvisation of the plan on dt. 12.05.2022 in the DLCNC meeting

1.4 Stakeholders and their responsibilities

- At the District level, District Disaster Management Authority, with the District Collector designated as the Response Officer (RO), and other line departments at district HQ are responsible to deal with all phases of disaster management within district.
- Other technical institutions, community at large, local self-governments, NGOs etc. are also stakeholders of the District Disaster Management Plan.

The District Collector has the following duties:

- i. To facilitate and coordinate with local Government bodies to ensure that pre- and post-disaster management activities in the district are carried out.
- ii. To assist community training, awareness programmes and the installation of emergency facilities with the support of local administration, non-governmental organizations and the private sector.
- iii. To function as a leader of the team and take appropriate actions to smoothen the response and relief activities to minimize the adverse impact of disaster.
- iv. To recommend the Special Relief Commissioner and State Government for declaration of disaster.

Local Authorities have the following duties:

- i. To provide assistance to the District Collector in disaster management activities.
- ii. To ensure training of its officers and employees and maintenance of resources so as to be readily available for use, in the event of a disaster.
- iii. To undertake capacity building measures and awareness and sensitization of the community
- iv. To ensure that all construction projects under it conform to the standards and specifications laid down.
- v. Each department of the Government in a district shall prepare a disaster management plan for the district. The local authorities need to ensure that relief, rehabilitation and reconstruction activities in the affected area, within the district, are carried out.

- vi. Trust / Organisations managing Places of Worships & Congregation
 - a. Each establishment / organisation identified as —critical infrastructure and key resource,
 - b. Including places of congregation in a district shall prepare —on-site and —off-site
 - c. Disaster management plan. Carry out mitigation, response, relief, rehabilitation and
 - d. Reconstruction activities.

Private Sector:

- i. The private sector should be encouraged to ensure their active participation in the pre-disaster activities in alignment with the overall plan developed by the DDMA or the Collector.
- ii. They should adhere to the relevant rules regarding prevention of disasters, as may be stipulated by relevant local authorities.
- iii. As a part of CSR, undertake DRR projects in consultation with district collector for enhancing district 's resilience.

NGOs/Volunteer Agencies:

- i. voluntary agencies including NGOs normally help in prevention and mitigation activities under the overall direction and supervision of the DDMA or the Collector.
- ii. They should be encouraged to participate in all training activities as may be organized and should familiarise themselves with their role in disaster management.

Community Groups/Citizens:

It is the duty of every citizen and Local community groups to assist the District Collector or such other person entrusted with or engaged in disaster management whenever demanded generally for the purpose of disaster management.

1.5 Plan for review and updating: Periodicity

-Dissemination of the plan.

-Revise and Maintain - Planning teams should establish a process for reviewing and revising the plan. Reviews should be a recurring activity. Review on an annual basis is considered minimum. It should be mandatory to consider reviewing and updating the plan after the following events

- i. A major incident.
- ii. A change in operational resources (e.g., policy, personnel, organizational structures, Management processes, facilities, equipment).
- iii. A formal update of planning guidance or standards.
- iv. Major exercises.
- v. A change in the district 's demographics or hazard or threat profile.
- vi. The enactment of new or amended laws or ordinances.

The responsibility for the coordination of the development and revision of the basic plan, annexes, appendices and implementing instructions must be assigned to the appropriate person(s).

It is recommended that a DDMP be internally reviewed on a yearly basis and either be updated or reaffirmed. The updates or reaffirmed document may also be used to summarize the accomplishments of the past year and help the administration to prioritize mitigation goals for the next year.

1.6 Approval Mechanism of DDMP:

As per Sec 31 (2) of the DM Act the DDMP prepared by DDMA after consultation with the local authorities and having regard to the Nation plan and state plan to be approved by the State Authority. After approval of the DDMP, this has been uploaded in the District website and disseminated with the District administration

1.7 How to use DDMP Frame work:

DDMP has been prepared by the DDMA with consultation with various stake holders, local authorities' priorities the available resources and plans to handle any unforeseen disaster situations in following the NDMA & SDMA rules and guidelines. The use of DDMP frame work can be understood from the context of the DDMP. However, for better use of the DDMP, chapters of the plan have been made describing various aspects of the plan. i.e. Introduction of District profile, hazards, vulnerability, past disaster records, response, mitigation, Rehabilitation, role of various stake holders, SOP of different line departments, contact points etc. described separately in the plan.

Chapter-2

District Profile: -

2.1 History & Location:

The district of Bargarh was created on 1st April 1993 by dividing the erstwhile Sambalpur district into four districts viz. Sambalpur, Deogarh, Jharsuguda and Bargarh. Geography of a region shapes the history of the people living therein. The geographic position of South Koshala therefore naturally impacted upon the life of the people of the region from time to time. The present district of Bargarh was carved out of the ancient South Koshala region. The history of the present district of Bargarh formed a part of the history of erstwhile Sambalpur region with changing administrative boundaries under different historical and administrative contexts. The present identity of Bargarh district is constructed in terms of its historical geography, architectural remains, pre-historic finds, historical data found in sites, primary data analysis, available records etc. relating to the present boundaries of the districts.

The Geographical position of the district with its natural rivers and mountains plays a significant role in shaping the history, culture and religion of the people living in this region since the pre-historic period. Till the invasion of Samudragupta in the 4th Century A.D. this region was exclusively inhabited by indigenous hilly tribes. They were independent in their life- style and would not surrender to any intrusion in their way of life. Asoka, the Mauryan king who invaded Kalinga in the 3rd Century B.C. therefore chose to stay away from direct military engagement and instead preferred to give a warning to these people and named them as Attavika or forest people.

The region of South Koshala was close to central India geographically. The invasion of South Koshala from Magadha opened a new line of communication connecting northern and southern India. It was along this route that the process of Aryanisation entered the main land of Odisha. The original inhabitants of this region who were primarily tribes, began to accept the process of Aryanisation in phases. It was through a long process of affinity between the Aryans/Brahmins with the tribals that resulted in the assimilation of tribal faith with Brahminism. The impact of this assimilation was manifested in the field of religion, art, architecture, sculpture, language and culture not only in this region but also in different parts of Odisha in subsequent stages.

The geographical location of this district served as a link of communication between Cuttack and Nagpur. It was because of the strategic position of the district that the Marathas and the British were attracted to this region and to establish their sway over it.

Origin and Evolution of The Name Of The District And Significance Thereof:

Bargarh District was the heartland of ancient South Koshal. It became a kingdom for the first time under the Chauhansince 16thCA.D.

In 1320 A.D. Ramai Dev founded the Chouhan dynasty in Patna. Balaram Dev belonged to this dynasty. His elder brother Narasingha Dev was the independent King of Patna. Balaram Dev was both stronger and popular. He got the Huma province as a share from his elder brother. Huma state was believed to be rich in gold and diamond along with other natural resources. The river Chitrotpala (now Mahanadi) flowed through one end of the Huma Kingdom which was a part of the then Koshal that included Dandakaranya. The then Koshal was surrounded by the rivers Mahanadi, Ong and Surangi on all the four sides. It would be more pertinent to view the Huma province as the Bargarh region than to call it directly Huma or Sambalpur Kingdom.

Prahallad Dubey in his book, "Jayachandrika" mentions that as the two brothers Narasingha Dev (elder) and Balaram Dev (younger) were not in good terms with each other, their mother gave Balaram Dev the Huma province which was a part of Patna Kingdom, as a sharein order to prevent further tussle between the two. With the settlement, she made the two brothers swear not to quarrel anymore. The mother declared that whoever of the two failed to honour the settlement would be declared to have committed the sin of outraging her modesty. The Huma province was on the northern side of the river „Onga“. (2)

The mother"s order made Balaram the ruler of the Huma Kingdom that existed on the northern side of the river „Ong“. But historian Shiba Prasad Dash records other reasons of the division of the Patna Kingdom as found in the manuscript of Sri Satyabadi Mishra. In his manuscript, Satyabadi Mishra contends that Balaram Dev got the kingdom "Kangaon Barapali" as a reward from his elder brother Narasingha Dev. But to spread his empire, the mighty and courageous Balaram Dev started conquering regions outside his Kingdom which irritated the elder brother Narasingha Dev. Narasingha Dev ordered Balaram Dev to leave the conquered regions and to go back to his original kingdom. However, the latter paid no attention to the order at all. So Narasingha Dev sent troops to drive away his younger brother forcibly from the

conquered regions, but the soldiers were defeated. Finally, he came himself with his soldiers to fight with his younger brother. He camped at Salebhata which is situated on the southern side of the river „Ong“. Balaram Dev prepared his troops for the fight at Cherupali that existed on the northern side of the said river. Their mother knew it and interfered for a settlement. She divided the Patna Kingdom into two on the basis of the river. The „Ong“ River which originates in Khadial merges in Mahanadi in the Sonapur kingdom served the purpose of boundary line between the kingdom of Patna and that of Sambalpur. At that time, the Huma province existed on the northern side of the river and Bargarh comprised the central region.

The Establishment of Bargarh

Balaram Dev founded his capital on the bank of the perennial river „Jira“. Prior to it, two brothers named Barna and Ujar belonging to the Sahara tribe had built a fort on the bank of the river and ruled this region. Balaram Dev drove them out of power and settled here after rebuilding the fort. He named it Bara (greatest) garh (fort). At first, it was known as the Huma kingdom. Bargarh was actually set up as the first capital by Balaram Dev, the first independent king of the Sambalpur Kingdom. He settled here after he came from Patna. He gifted some villages like Ambapali, Dumberpali, Brahmachari etc. to the Brahmins. These villages are situated on the bank of Jira. Criminals administered with death penalty were executed at Shuliapada near Bargarh.

Balaram Dev came here and rebuilt the fort and established himself as the ruler. He most probably named the region Bargarh as a monument of his royal achievement. In course of time, he changed his capital to Nuangarh village surrounded by the Barapahar forest range which at present comes under Bhatli Police Station. As he moved out of his old capital Bargarh to settle in the newly built fort (Nuangarh), people obviously called it Nuangarh (newly built fort). Later, he saw Goddess Samaleswari in his dream during his halt at night on a hunting trip to the Chaunrpur forest range situated on the bank of the river Mahanadi. He was ordained by the Goddess to set up his capital at Sambalpur. He built her temple there and enshrined her taking from Gumdarha. After him the others who succeeded him were Hrudaya Narayan Dev, Balabhadra Dev, Madhukar Dev, Baliar Singh Dev, Ratna Singh Dev, Chhatra Singh Dev and Ajit Singh Dev. From 1778 A.D. to 1781 A.D. Abhaya Singh Dev (a minor named Balabhadra Sai belonging to the Chandrapur Zamindar family) was made the King although one Akbar Ray became de facto ruler. The minor king was

succeeded by Jayant Singh Dev who ruled Sambalpur from 1781 A.D. to 1800 A.D.

In 1800 A.D. the Marathas conquered the Sambalpur Kingdom and ruled it upto 1817 A.D. Bhupa Singh, the representative of the Bhonsla ruled it from 1800 A.D. to 1802 A.D. After him, the Bhonsla appointed Tantia Gadnabish as the ruler of Sambalpur who reigned from 1802 A.D. to 1803A.D. The second Maratha war was between the Bhonsla and the British which started in the month of September in 1803 A.D.

On 2nd January, 1804 A.D., the British General Lieutenant Browton conquered Sambalpur and dislodged Tantia Gadnabish from power. The Britishers were unwilling to allow the Marathas to rule the kingdom after they captured it. However, Keshab Govinda, the Subedar of Ratnapur at that time refused to leave his region and continued to rule by keeping his troops at Sonepur. The Bhonsla from Nagpur in the meantime complained to the then Governor Lord Wellesley in vain regarding British intrusion into regions outside Cuttack. The Britishers had reasons for not heeding to the complaint of the Bhonsla of Nagpur and dishonouring the Treaty of Deogaon.

Commercial goods could be easily transported to Cuttack by Mahanadi waterways through Boudh and Sonepur regions and it was easy for them to travel through waterways. Browton wrote a letter to Harcourt on 24th March, 1804 not to return the Sambalpur kingdom again to the Bhonsla. On 26th March, in reply to a query whether they wished to continue under the Bhonsla or not, Ratna Kumari, the queen of Sambalpur, and the Samanta kings such as Queen Laxmipriya of Sonepur, Raigarh King Jujhur Singh, Sarangarh king Bishwanath Ray, Rairakhol King Bira Budha Jena, Gangpur King Indra Dev, Bamanda King Sachidanand Tribhuban Dev, Bargarh King Thakur Ranjit Singh at all refused to oblige the autocracy of the Bhonsla.

After the Britishers conquered the Sambalpur Kingdom, they ruled the Gadjat kingdoms through political agents. The kings and zamindars of the eighteen gadjats remained so only in name. But when Veer Surendra Sai belonging to the Chauhan zamindar family of Khinda rebelled against the Britishers, he received overwhelming support from the Bargarh region. Paharsrigida zamindar Janardan Singh, Bheden zamindar Manohar Singh, Ghess Zamindar Madho Singh and his family, Lakhanpur Zamindar Balabhadra Singh Dao etc. extended immense help to him in this rebellion. However, Bargarh continued to be under British Rule till India achieved Independence in 1947. The present territory of Bargarh district was under direct British rule. No

Princely State was there within this territory. So the merger of Princely State did not take place in this district.

When Gandhiji launched Non-Cooperation Movement against the Britishers after his return from South Africa, this region extended support and Pandit Ghanashyam Panigrahi, Fakira Behera, Madhaba Sathua, Rama Chandra Puri, Bhagirathi Pattnaik led the movement in this region. They too groomed thirty two freedom fighters of Panimora for the famous 1942 Quit India Movement. The movement of 1942 also contributed to the emergence of the women leaders of the region such as Parbati Giri, and Prabhabati Devi.

Hence, Bargarh, founded by the Chauhan King Balaram Dev in the first half of the 16th century as a capital on the bank of the river Jira, is now a culturally and commercially rich town as well as one of the most important districts of Odisha.

2.2 Administrative Setup:

No of Sub Division:-	2 1. Bargarh, 2. Padampur
1. No. of Tahasil:	12 1. Attabira, 2.Bargarh. 3. Barpali, 4.Bhatli, 5. Bheden, 6.Padampur, 7.Paikmal, 8.Sohella, 9. Bijepur 10. Gaisilet, 11. Ambabhona, 12. Jharbandh
2. No. of R.I. Circles:	105
3. No. of Blocks:	12 Attabira, Ambabhona, Bargarh, Barpali, Bhatli, Bheden, Bijepur, Gaisilet, Jharbandh, Padampur, Paikmal, Sohela.
4. No. of U.L.Bs.	5 Bargarh Municipality, N.A.C., Barpali, Padampur, Attabira & Bijepur.
5. No. of I.C.D.S. Projects.	13 Bargarh, Bheden, Barpali, Bhatli, Attabira, Ambabhona, Bargarh (Urban), Padampur, Paikmal, Jharbandh, Bijepur, Gaisilet, Sohela.
6. No. of Police Stations:	16 Ambabhona, Attabira, Barpali, Bheden, Bijepur, Buden, Bhatli, Gaisilet, Jharbandh, Melchhamunda, Padampur, Bargarh Town, Bargarh Sadar, Paikmal,

7. No. of Gram Panchayats:	253
8. No. of Villages:	1204
9. No. of Fire Stations:	11
Nos. of Assembly Constituency:	05

2.3 Climate & Rain fall:

Four seasons distinctly seen in this division, viz:

1. Hot and dry summer,
2. Hot and humid wet season,
3. Post monsoon season, and
4. Winter season.

1. **Hot and Dry Summer** It extends from early February to middle or end of June. The temperature shoots up to 46° C in May. The humidity is very low in April and May. On an average, rainfall received in March and April is less than 50 mm.
2. **Hot and Humid Wet Season** Monsoon breaks in the first fortnight of June and lasts up to September. Maximum rainfall is received in July and August. On an average 300-400 mm rainfall is received in these months. The relative humidity is also high in this season, and the sky is heavily clouded. The average maximum temperature in July is about 34° C and in August is 33° C.
3. **Post Monsoon season** In this season there are occasional showers. The humidity is high. There is moderately thin cloud in this season and the temperature starts falling down.
4. **Winter season** This extends from December to last part of January or first fortnight of February. The humidity also decrease in December and January. There is almost no rainfall in December, January and February.

Temperature:

The district is characterized by an extreme climate with very hot dry summer and considerably cold winter. The cold season lasts from November upto February. Generally, temperature rises steadily from early March till the end of May and continues till June. The average temperature is as high as 47° – 48° C during peak summer and falls to 10° – 12° C in winter. Mean daily temperature in summer is 35° C.

Humidity

It is generally medium to high in this Division. Maximum humidity is seen in the month of August and minimum in April and May. It reaches 80 % in July, August and September. The average humidity in this district varies from 40% in May to 95% in August.

Wind

Wind is usually gentle and moderate in this district. But sometimes strong wind blows during summer and rainy season. In the month of May and during rainy season the wind blows from south-west to north-east. During the rest of the year wind blows from the north-eastern corner in the morning and from the corner of north-west and north in the afternoon.

Rainfall:

This district falls under tropical monsoon climate. Here the weather is commonly warm and receives rainfall mostly from southwest monsoon and rarely from northeast retreating monsoons. The rainy season starts from first part of the second week of June and continues till September. The average annual rainfall in this district is about 1331.39mm. The daily rainfall data received from the 12 rain recording stations situated in each Block Head quarters have been compiled and recorded. The daily reports on rainfall are sent to proper quarters regularly. The recorded rainfall is compared with the record maintained in the Office of the Special Relief Commissioner's office, Bhubaneswar every year as per the programme given by the S.R.C, Odisha. The rainfall figures of the district for the last three years are given below. (Fig. in mm).

Rainfall Data for the Period from 2009 to 2021

Year/ Month (in mm)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Jan	0	12.5	18.17	105.5	0	19.42	57.42	5.5	0	0.42	5.5	6.97	0.00	1.50	9.44	1.75
Feb	0	19.1	1.5	0	0	0	0	17.08	32.92	5.08	12.25	0.00	2.72	13.71	100.78	2.83
March	41.92	22	41.92	0	0	0	0	0	23.75	6.88	15	11.83	0.18	38.79	56.63	4.58
April	0	20	1.33	0	0	51.83	4.75	29.37	1.42	74.42	4.75	0.00	9.54	21.83	73.23	2.48
May	62.17	25.6	0	30	6	21.67	1.67	10.5	98.17	6.75	30.04	16.80	66.08	14.59	55.48	70.70
June	140.33	205.6	272.67	55	161.92	94.25	321.83	198.17	94	255.67	125.32	260.57	145.53	135.53	293.20	209.05
July	399.33	397.2	324.89	746.52	421.42	233.25	276.92	396.33	670.67	259.58	218.97	263.00	471.18	412.72	240.48	323.11

Aug	871.67	374.4	408.17	210	221.08	290.25	481.25	221.58	462.25	274.42	284.32	244.83	397.34	449.07	620.17	144.63
Sept	74	222.6	311.25	145.67	157.25	552.4	254.42	177.75	294.08	119.46	292.11	115.57	174.23	429.42	99.43	332.21
Oct	9.17	52.8	0.17	38.67	51.83	9.58	80.83	186.17	33.42	0.83	56.6	63.26	7.38	64.48	49.28	44.50
Nov	54.25	10.4	0	0	24.5	0	6.78	0	0	0	0.2	1.12	0.00	0.00	0.00	12.65
Dec	0	5.1	0	10	0	0	0	0	0.08	7.08	0	0.00	82.81	2.42	0.00	77.77
Total	1652.84	1367.3	1380.07	1341.36	1044	1272.65	1485.87	1242.45	1710.76	1010.59	1045.06	983.95	1356.99	1584.06	1598.12	1226.26

2.4 Geography & Topography:

Natural Divisions and Land Formation:

Geographically the district of Bargarh can be divided into three natural divisions viz. (i) The plain of Bargarh (ii) Raj Borasambar and (iii) The Barapahar range and Ambabhona-Lakhanpur.

(i) The plain of Bargarh

It is formed by the rivers Jeera, Danta and Jhaun- the three tributaries of Mahanadi. The plain spreads from Godbhaga in the east to Sohela in the west and Bhatli in the north to Bheden- Turum in the south. It is an expanse of undulating land slopping down from the Barapahar range in the north to the Mahanadi valley in the south having a soil suitable for rice production. The soil is a mixture of clay, sand and gravel.

(ii) Raj Borasambar

It lies to the south-west of Bargarh plain and is the second largest sub-division of the district. It is sub-divided into two sub-ranges viz., Gandhamardana mountain-forest range and Ong River valley.

- a) **Gandhamardana mountain and forest range-** It is formed by three sub-ranges. The first sub-range being the Gandhamardana Mountain itself separates Bargarh from Bargarh district. It is 2000 to 3000 feet high. Nrusinghanath is the highest peak of this area with a height of 3234 feet i.e. 985.72 metres. The mountain contains many natural streams and waterfalls like Kapildhar, Chaldhar and Bhimdhar. It is a treasure-house of many kinds of medicinal plants of which some are very rare in the world. The

- b) people of the region are attached religiously to these streams. People of Chhatisgarh refer these streams as holy as the river *Ganga*. The second sub-range situated to the west of Nrusinghanath runs first north-south and then north-east at Jagdalpur where the river Ong breaks it. The third sub- range runs eastward to village *Tal* and then runs the north-east separating the district of Bargarh from Chhatisgarh region. It joins the western end of Barapahar range and is linked to the tail of the Vindhya mountain range of central India.
- c) **Ong River Valley-** The Ong river valley is situated in between the hill ranges lying to the north and south of Raj Borasambar division. The whole valley, particularly the eastern portion is best suited to agriculture due to river silt and hill drainage.

The river has its origin in the Nuapara district and enters Raj Borasambar at its extreme south-west corner. It flows in a wide semi-circular way from west to east. It leaves Bargarh district a few miles east of Gaisilet to enter Subarnapur where it joins the Mahanadi.

The Barapahar range and Ambabhona

Lakhanpur- Barapahar is a cluster of small hills situated to the North-east of the district. It is called Barapahar because according to the tradition of the region, it is supposed to consist of twelve hills. It has an area of 776 Sq. Km. and its highest peak Debrigarh is 2267 ft. in height. It provides an all-weather stream near the summit in the name of Barabakhara where a flanked stone roof is present. It is believed that it has a capacity of giving shelter to 500 persons at a time. It was an important place of shelter for the revolutionaries during the Ulgulan of Surendra Sai.

The Ambabhona-Lakhanpur plain is cut off from the Bargarh plain by a long spur of the Barapahar hill running south west nearly 48 Kms. The region is dominated by the Mali caste people who called Mango and mangroves as „Ama“ and „Bhona“ respectively for which the place was called “Ambabhona”.

The area slopes down from the Barapahar to the River Mahanadi on the north-east. The Lakhanpur tract suitable for good cultivation is surrounded by forest-clad hills.

The whole Barapahar range is divided into the following reserve forest areas viz-(1) Sareidamu-Budharaja (7683.040 Hectare), (2) Dechuan-Lakhanpur (6997.000 hectare), (3) Phulsuri-Dungri Reserve Forest to the side of Mahanadi (880.964 hectare), (4) Lohra reserve forest near Kamgaon (346.091 hectare) and (5) Debrigarh Reserve forest (2409 hectare).

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Geological Formation, Mines, Minerals and Rocks:

The Geology of this district is constituted by the Central India Craton (CIC) and the Eastern Ghat Mobile Belt (EGMB) belonging to the Archean to Proterozoic age. The younger intrusive alkaline rocks are found at the conjunction of the above two. The Chhattisgarh Group of rocks belongs to the Vindhyan which lies over the CIC basement.

The Padampur Civil Sub-division exposes different lithostratigraphic units having varied lithoassemblages. The Iron Ore Group consists of relics of cherty quartzite, metavolcanics in an envelope of granite gneisses and migmatites.

The granitic country is dominated by massive; medium grained granite of plutonic dimension (Sambalpur Granite) and is presently dated at 2600BC. The intrusive of different compositions intrude into iron ore Group of rocks. The intrusive are identified as pyroxenites, granophyres, syenite, dolerite and quartzvein. Three different phases of intrusive have intruded at different periods of time presumably in middle to upper Proterozoic. The Eastern Ghat Super Group comprises rock types of granulite facies, viz: quartz-feldspar-garnet-sillimanite graphite schist/

gneiss, garnetiferous quartzite, calcgranulites (Khondalite group), Charnockite, leptynite, garnetiferous granite gneiss and migmatites (Granitoids)

The anorthosite body possibly an apophysis of Bargarh anorthosite is marked as an intrusive into Eastern Ghat Super Group of rock. The Eastern Ghat Super Group of rocks is juxtaposed against the Iron Ore Group craton along a tectonic lineament marked as T-T in plate- I.

The chronostratigraphic relationships of Eastern Ghat Super Group of rocks vis-a-vis those of Iron Ore Group are highly conjectural. On a broader perspective, although both have late Archean ancestry, the EGMB (Eastern Ghat Mobile Belt) has yielded an overwhelmingly large impact on early to middle Proterozoic dates.

The Chhatisgarh Super Group of rocks are represented by conglomerate, grit, arkose, sandstone, shale of Chandrapur group overlain by fine grained siltstone, shale, calcareous clay and limestone of Raipur Group.

Gondwana Super Group of sediments occurs in a narrow basin along the Eastern Ghat Mobile Belt and Iron Ore Group border. These sediments are represented by pebbly sandstone, siltstone and mudstone. Fossil imprints of *Glossopteris* are reported from these rocks.

Quaternary formations are represented by transported laterite, sandy clay and medium to fine sand.

The Eastern Ghat Super Group of rocks show a history of intricate folding. Metamorphism had progressed up to granulite facies. Local partial melting and anatexis is frequently observed.

Sl No	Name of the Agency	Name of the Minerals	Forest area involved (In hect.)	Non-forest land involved (In hect.)	Total area of the Project (In hect.)	Remarks
1	Dungri Lime Stone Quarry by M/s. ACC Ltd. Bargarh Cement Works, Bardol.	Lime Stone	73.323	428.892	502.215	Out of total forest area 19.5 applied for 2nd RML

Flora and Fauna:

Flora is the plant life occurring in a particular region or time, generally the naturally occurred or indigenous. Plants are grouped into different types of flora based on region, period, specific environment, or climate. Regions may have geographically distinct habitats like mountain or flatland. Flora can mean plant life of a historic era as in fossil flora. Lastly, flora may be subdivided by specific environments.

General Characteristics of Vegetation:

The topography of the forest is markedly hilly to moderately hilly and plain areas. The major forest types included in this Working Circle are 5B/CI Dry Sal Forest represented by the sub-type 5B/C1c dry peninsular Sal Forest, 5B/C2 Dry Mixed Deciduous Forests and 5/E9 Bamboo Brakes.

The Reserved Forest blocks Sareidamak-Budharaja, Papanga, Jhanjpahar, Borasambar, Adwal, and Gandhamardhan are allotted to this Working Circle. Salia Bamboo is present in number of blocks allotted to this Working Circle.

The vegetation consists of mainly Sal and associated species like Piasal, Asan, Dhaura, Kurum, Kasi etc.

Bamboo is present in varying densities and is found along with other tree species. Regeneration of Sal, other principal and secondary species is adequate. Climbers like Atundi (*Combretum decandrum*) and weeds like Eupatorium and Lantana at places are creating problems by suppressing the regeneration of principal species. The forests allotted to this Working Circle are subjected to various biotic pressures like grazing, fire and illicit felling. Steps need to be taken during the implementation of this Plan to ensure that these pressures are minimized in these blocks. In general, the problem of fire especially during the NTFP collection season is prevalent in the entire area, resulting in changes in soil composition and crop condition.

Major portion of this district is an open plain of great natural fertility drained by the rivers Danta and Jira. Paddy is cultivated on the low lands whereas pulses, sesamum, coarse rice and cotton are cultivated on uplands. Besides, several types of vegetables are grown in different parts of the district. The district almost entirely depends on agriculture, with a considerable amount of the land mass brought under cultivation, which is increasing with the reclamation of the forest land. The distribution of land used in different sectors of the district is shown below:

Statistics of land cover areas of the District Bargarh (Area in sq.km.)

Type of land use	Total area covered
Agriculture	4543.850
Deciduous Forest	566.725
Scrub/Degraded Forest	256.725
Land with /without scrub	289.415
Mining area	0.625
Settlements	6.960
River/Reservoir	178.350
Total	5837.6500

The forest area of the district covers 1216.13 sq km approximately occupying 20.83 per cent of the total geographical area of the state. The vegetation in the district ranges from tropical semi-evergreen to dry-deciduous and grasslands with varying species of diverse composition.

The main topographic features of Bargarh District are -

Bargarh Plain- It is an open plain which is drained by three small rivers, Danta, Ongand & Jira. To the north of this plain runs the Barapahad range of hills and to the south-west lies the valley of river Ong. The Mahanandi Valley is in the east. It is a very fertile zone of greenery due to cultivation throughout the year in its major parts.

Borasambar Plain- It lies to the south-west of Bargarh plain and is surrounded by high hills on north and south. This valley is drained by river Ong. It is also a green zone with rich soil especially on the eastern side which is best suited to agriculture. Its soil is enriched by the river-slit drained from the hill-top.

Ambabhona-Lakhanpur Plain- This area is separated from rest of the Bargarh plain by the long spur of Barapahar hills running south-west for a distance of nearly 48 km. and is extended up to the river Mahanandi. Ambabhona is a fairly level tract sloping down from the hills to the river Mahanandi and is under close cultivation. Lakhanpur Valley is completely surrounded by forest-clad hills. The area is under extensive cultivation.

Hills and Plateaus- Being a part of the central plateau of the country, the district has a number of undulating hills with hillocks and small hill ranges. The main hill ranges and hills are the Gandhamardan hill ranges, the Barapahad hill ranges and the Jhanjpahad. Besides these, a few

other hilly and non-hilly forest areas are also found here. The high physiographic areas are the main hill ranges in the district.

The Barapahad hill ranges covering an area of over 777 sq km is situated on the south-west of the district.

It attains a height of 2,267 feet (691.1m) at the peak of Debrigarh. Debrigarh is one of the few hills of the range offering level ground and good water supply near the summit. It is one of the best hill sites in the district suitable for health resort. The Gandhamardan hill a range covering an area of 300 sq km is situated towards the North West of the district and extended upto Bargarh and Bargarh districts. The hill range rises to a height of 2,000-3000 feet (629.6m-914.4m) and reaches its highest point (3,234 feet or 985.72m) at the peak of Nrusinghnath, one of the very important sacred places in the district. Another range branches off to the west of Nrusinghnath running first north-south and then north-east near Jagdalpur, where it is broken by the Ong River. The Jhanjpahad hill range is another high physiographic area of the district, covering an area of 1.90 sq km and it runs eastward to Tal of Padampur sub-division and then to the north-east forming the boundary between Bargarh district and Raipur district of Chhattisgarh. Besides this a few more such hilly areas are also situated in different localities in the district.

Soil Profile:

The main soil groups found in the district are red, red and black, red and yellow and alluvial and sandy type. Red and black type of soil is found in the blocks of Bargarh, Barpali, Bheden, Attapura, Bhatli, Bijepur, Gaisilet and Paikmal. The soil in Ambabhona block is red and yellow, alluvial type. In Sohela and Jharbandh block the soil is of lateritic type.

River System:

The rivers of this district are primarily peninsular rivers and most of them have originated from the plateau of Chhattisgarh and Eastern Ghats Mountain range of Odisha. River Mahanadi, (Total length of 852.8 km) is the main river, which has its source in the Amarkantak plateau of Madhya Pradesh. It enters Odisha near Chikhili village of this district. On this river Hirakud Dam, the longest dam of the country has been built and an artificial lake has been created which stretches upstream for about 52.8 km from Hirakud town. Its net irrigable area is 35,486 hectares and ultimate installed capacity is 4, 75,000 KW of hydel power. The downstream of River Mahanadi upto Sonapur is almost north south and in this section a number of tributaries meet Mahanadi on its right bank. The most important rivers are river Jira and Jhaun, which drain the Bargarh plains. The Jira has its main tributary, the Danta which joins it a few kilometres north of its confluence with the Mahanadi near the village Gandturm in Bheden block. Another river that

flows through the district is the Ong that originates in Nuapada district and enters Borasambar (Padampur) at its extreme south-west corner. It flows in a wide-semi-circle from west to east and leaves the district a few miles to the east of Gaisilet eventually joining the Mahanadi in Subarnapur district.

2.6.1 Spring, Waterfall and Water reservoir:

Presently there are 7 natural and perennial springs found in the Gandhamardan hills. The waterfalls are called Gupat Mahadev (rising from Gupta Ganga), Kapildhar, Akali, Bhojpurgarh, Gupteswar, Khandijharan and Manbhang, which are considered to be very sacred and are perennial. In the Barapahar hills there are several springs, notably, Gangei-nala, Kanhei-nala, Kusmada-nala, Sukha-nala, Badmal-nala and Ghugar.

There are many water reservoirs in the district, some of them serving the purpose of irrigation. They are Manbhang dam project at Manbhang, Salepali dam reservoir at Salepali, Sarkarikata at Paikmal, Bhoisagar near Rasmunda and Malda village, Victoria Sagar near Ghess, Sarkarikata at Buromuda (Gaisilet), Yogimunda in Barpali, Ranisagar in Bijepur and Kumo Dam project at Kumo in Ambabhona block.

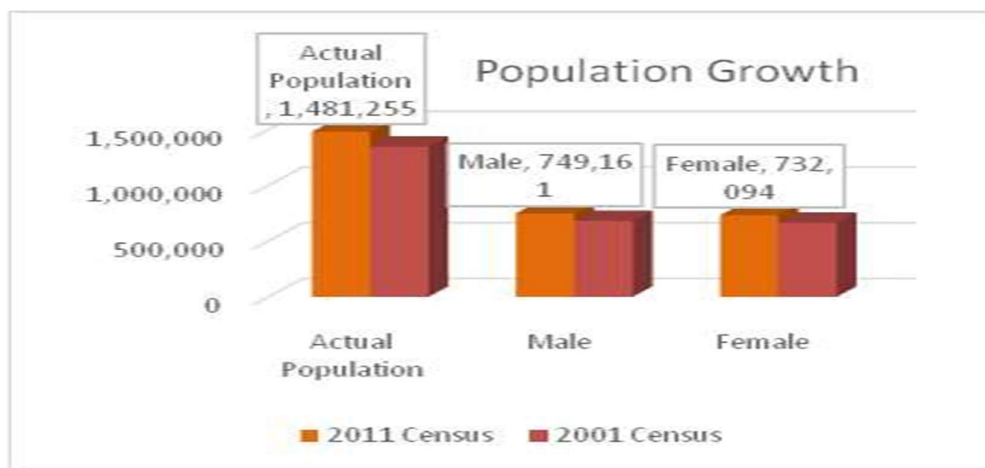
2.5 Demography:

Households

As per the census of 2011, the total number of households of the district is 370308 among them 336130 HHs are living in Rural areas & 34178 HHs are living at urban areas. Out of total HHs 76327 HHs is belongs to SC & 69925 HHs belongs to ST Households. (Refer Table 1.2 of Volume II)

Population, decadal growth and Population Estimation

In 2011, Bargarh had a population of 14, 81,255 of which males and females were **7, 49,161** and **7, 32,094** respectively. In 2001 census total population was **1,346,336** of which **681,500** were males and **664,836** were females. There was a growth of 10.02 percent in the population of Bargarh as per 2011 census. There is an increase of 9.93% male and 10.12 female in its population as compared to that in 2001 census. The data released by census India 2011 shows that density of population is 254 people per sq. km. whereas the density of state is 270 people per sq. km. The district administers 5,837 square kilometres of area.



Rural- Urban Population Distribution Bargarh

District Urban Population 2011

The total population of Bargarh as per 2011 census was 14, 81,255. Out of which 10.13 percent live in urban area that is 1, 50,110 where males are 76,558 and females are 73,552.

Bargarh District Rural Population 2011

As per 2011 census, 89.87 % of population live in rural areas that are 13, 31,145 where males and females are 6, 72,603 and 6, 58,542 respectively. The sex ratio of rural area is 979 females per 1000 males.

Table-2.1- Households and its distribution

Sl. No	Total Number of Families/HH	Category		Category				Category	
		Rural	Urban	SC	ST	OBC	GEN	BPL	APL
1.	370308	336130	34178	76327	39925		224056		

Table-2.2- Population and its Composition

Sl. No	Population			SC		ST		OBC	
	T	M	F	M	F	M	F	M	F
1.	1481255	749161	732094	150420	148360	140542	140593		

Population density of the district and decadal growth of population

Table-2.3- Age Group

Sl. No.	Total Population	0-5 years	6-14 years	15-59 years	60 years and above
1.		162922			

Table-2.4- Sex Ratio

1.	Sex Ratio (Females per 1000 males):	977
2.	Sex Ration (0-6 Years):	946

Table-2.5-Literacy Rate

	Total	Male	Female
Literacy Rate	983783	557217	426566

Table-2.6 -Vulnerable Group

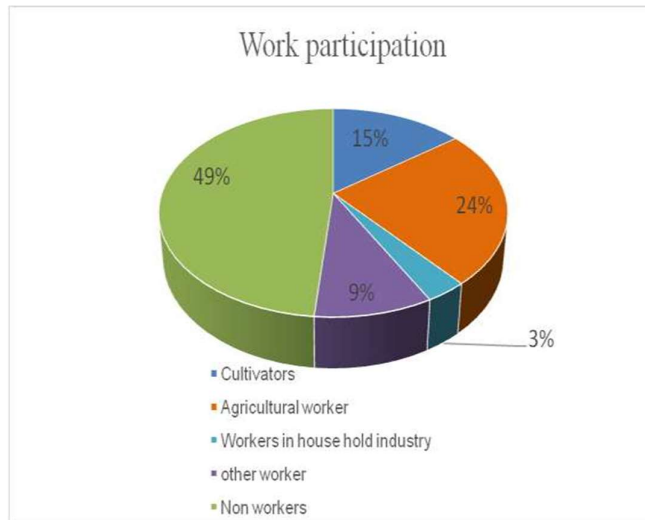
Name of the block/ ULB	Village	Children (0-below 18yrs)		People with Disability		Elderly Person above 60 Years	
		Male	Female	Male	Female	Male	Female
Bargarh				1406	1297	6289	5805
Attabira				779	719	5804	5375
Attabira NAC				88	81	689	636
Bheden				781	721	6245	5764
Barpali				618	571	5051	4662
Barpali NAC				122	113	655	604
Bhatli				475	439	4109	3793
Ambabhona				242	224	4034	3724
Municipality Bargarh				356	328	2118	1955
Bijepur				526	485	4421	4081
Gaisilet				621	574	4938	4559
Jharband				453	418	4118	3801
Padampur				784	724	5419	5002
Paikmal				449	414	5060	4671
Sohela				691	637	5399	4984
Padampur NAC				93	86	526	486
Bijepur NAC				64	59	431	398
Grand Total				8548	7890	65306	60282

(Details are at Table No. of Volume II of the DDMP)

2.6 Socio-Economic profile:

1.Workforce participation-

Total population of the district as per 2011 Population Census is 14, 81,255, out of which 173496 are cultivators or 22.77 % , 152438 Agricultural labourers or 20 % , 34886 House hold industry workers or 4.58 % and other workers are 401272 or 52.65 %.



2. Workforce participation rate- Male/ Female

Total population of the district as per 2011 Population Census is 14, 81,255 (M 7, 49,161 and F 7,32,094). Out of which number of Main and Marginal workers are 762092.(Male 473305, Female 288787) and Non- workers 719163 (Male 275856 and Female 443307).

. (Refer Table No. 1.9 of Volume II).

3. Land Holding Pattern:

The Agriculture department data shows that, the district had 193336 farmers & 14937 Households are landless. Out of total farmers, 123898 nos are marginal farmers, 42369 nos are small farmers, 20493 nos are Semi-medium farmers, 6075 are medium farmers and 501 Nos farmers are large farmers. Further average size of holding by size class is 1.39 ha. in the district. Though there is no official data on share cropper but the Agriculture data from DDA reveals there are 6400 otherwise operated holdings in the district. (Refer Table No. 1.10 of Volume II).

4. Agriculture and Irrigation

During 2021-22, Total 510790 hectares area, out of which 348747 hectares are cultivable area, net sown areas are 348747 and total irrigated areas are 43183 hectares and in Irrigation potential district having Ayacut area of 25711 hect. With the help 1029 nos. of lift irrigation points (River) & 47310 hect nos. with the help of 23655 of lift irrigation points (Deep Bore wells) are created in the district for irrigation purpose. Total 61.94% of cultivated area of district is irrigated.

. (Refer Table No. 1.12 of Volume II)

5. Employment and livelihood

6. Industries and mining

During the year 2021-22, numbers of major industries, MSME are 1 and 14307 respectively, where in major Industry 1129 workers are working there and in MSME Units 46523 workers are engaged in the district. In Handloom sector 5026 artisans and in Handicraft sector 3366 artisans are engaged, which plays a critical role to meet the employment needs of people of the district.

(Refer Table 1.25 of Volume II).

7. Education

Education is the prime agency which builds the capacity of a community to withstand in any type of disaster. In Bargarh, 1330 Villages/ Habitations are having 1330 nos. Of primary School within the village itself whereas 1330 Villages/ Habitations having ME and High Schools within 5 KMs. Total children 115180 nos of children are enrolled from 6-14 years and 249 nos of children are dropout during the year of 2021-22. The district had 726, 572 & 156 Primary, ME and High schools respectively. Total Number of teachers is 6820. During last year, number of students enrolled at the age group of 6 to 14 years was 221288.

(Refer Table 1.26 & 1.27 of Volume II)

8. Health

The district health vulnerability snapshot shows Tuberculosis is one the major diseases in the district followed by Malaria, Pneumonia, Diarrhea, TB and Jaundice. Villages frequently affected by such diseases and cases of reported deaths. The district had 212 sub centres, 49 PHCs, 16 CHCs, 1 Ayurvedic Hospital, 1 SDHs, 21 private Hospitals, 24 MHUs, 16 Ambulance, and 4 blood banks across the district. To run such medical establishments, 153 doctors, 542 paramedical staff, 327 ANMs and 1519 ASHA are extending their services in the district. In health indicator dimensions, the district has ensured Institutional delivery by 99.55%, immunization by 82.30%. & 537 child death case reported in 2021-22 and Maternal Mortality of 44 during 2021-22.

(Refer Table 1.33, 1.34 of Volume II)

9. Housing

Total 343571 Nos. of Households are living in rural areas of the district. Among them 258 are homeless HHs. Total Nos. houses are 418438, out of this 28388 are Kaccha, 46737 houses are Semi Pacca & 343313 are Pacca Houses. **(Refer Table 1.11 of Volume II)**

10. Electrification

In the district 1188 villages are declared as Fully Electrified out of total villages 1214 and 26 villages are un identified or not found by the electry department. Total house holds are 271728 and all the 271728 house holds have been elctrified. **(Refer Table 1.29 of Volume II)**

11. Drinking water and sanitation

Safe drinking water facilities are available in 1178 villages of the district. The district has installed 15774 functional tube wells and 20 sanitary wells to ensure portable water to rural population. Besides, 595 PWS projects are functional in 619 villages which cover about 244505 households. But, 26 villages are affected by fluoride. In additional to this, 19 villages are having drinking water crisis during summer season. **(Refer Table 1.30 of Volume II)**

In sanitation dimension, 295959 households are covered under IHHL which also includes 1176 ODF villages. **(Refer Table 1.31of Volume II)**

12. Migration

Bargarh is a less migration prone district. Out of 12 blocks, People from only 3 blocks migrate to nearby districts or state and works in bricks knell from August to January. 170 labourers from 36 households have migrated during 2015-16. Among the total migrants, 81 migrants are female. **(Refer Table 1.28 of Volume II).**

13. Food security

Under NFSA, 353637 families and 1173667 members are identified as the Priority households. To meet the food grain requirement of the beneficiaries covered under NFSA, the district had an allotment of 6483.79 Qntl of wheat and 62612.76 Qntl of rice. To ensure timely delivery of food grain, the district has 279 PDS retail outlay. Besides with 146082 Qtls storage capacities. These storage points are being managed by CWC, OSWC and RMC. **(Refer Table 1.37 of Volume II)**

14. Social Security

In Bargarh, 176215 persons have covered under various social security schemes. Among them, 125588 (65306 male and 60282 female) have covered under Old age Pensions, 34189 under Widows Pension and 16438 (8548 male and 7890 female) under Disability Pensions. **(Refer Table 1.38 of Volume II).**

2.7 Critical infrastructure:

1. Anganwadi Centers

2919 AWC are operational in the district from which 2015 AWCs are having their own building which constitutes 69.03% of the total AWCs. In these AWCs, 85038 pre-school children have enrolled. Besides, 180 children are found Severely Malnourished and referred. AWCs are also providing support to 21107 pregnant women and lactating mothers. **(Refer Table 1.32 of Volume II).**

2. Schools and other Educational Institutions

Education is the prime agency which builds the capacity of a community to withstand in any type of disaster. In Bargarh, 1330 Villages/ Habitations are having 1330 nos. Of primary School within the village itself whereas 1330 Villages/ Habitations having ME and High Schools within 5 KMs. Total children 115180 nos of children are enrolled from 6-14 years and 249 nos of children are dropout during the year of 2021-22. The district had 726, 572 & 156 Primary, ME and High schools respectively. Total Number of teachers is 6820. During last year, number of students enrolled at the age group of 6 to 14 years was 221288.

(Refer Table 2.1 of Volume II)

3. Hospitals and Health Centers

The district health vulnerability snapshot shows Tuberculosis is one the major diseases in the district followed by Malaria, Pneumonia, Diarrhea, TB and Jaundice. Villages frequently affected by such diseases and cases of reported deaths. The district had 212 sub centres, 49 PHCs, 16 CHCs, 1 Ayurvedic Hospital, 1 SDHs, 21 private Hospitals, 24 MHUs, 16 Ambulance, and 4 blood banks across the district. To run such medical establishments, 153 doctors, 542 paramedical staff, 327 ANMs and 1519 ASHA are extending their services in the district. In health indicator dimensions, the district has ensured Institutional delivery by 99.55%, immunization by 82.30%. & 537 child death case reported in 2021-22 and Maternal Mortality of 44 during 2021-22. **(Refer Table 2.2 ,2.3 of Volume II)**

4. Veterinary Hospitals

During 2022, Bargarh district had 1 Veterinary hospital and 19 Veterinary dispensaries, 128 Livestock Aid Centre, 28 Doctors, 79 LIs, 32 Gomitra to provide veterinary service to the farmers. Besides 2 Hatchery, 3 nos. Of Fodder Farm, 127 Artificial Insemina, 10 BAIF Cattle Development Centre are functional in the district under “Kalyani” Programme. Besides 253 MPCS (Co-operatives), 12 nos. Of Mobile Veterinary Units and 30 Nos. Of ILDC (under JK Trust) are extending services to the people at various levels. **(Refer Table 2.4 of Volume II)**

5. Police and Fire Stations

The district has 16 police stations and 12 fire and disaster response service centres in the district.

(Refer Table 2.7 of Volume II).

6. Cooperative Societies

Total 57 PACs are present under the Assistant Registrar of Cooperative Societies, Bargarh & Padampur Circle. During the year 2021-22, total 2559.71 Qtls of seed distributed to 3444 numbers of farmers, 221125.11 Qtls of fertilizer distributed to 85235 numbers of farmers, total 135476.61 lakhs of amount distributed to 171061 numbers of farmers and 11011140.04 Qtls of Kharif and rabi paddy procured from 170519 numbers of farmers. . (Refer Table 1.16 of Volume II)

7. Banks and Post offices

There were 99 nos., 36nos. and 16 nos. of Scheduled Commercial Banks, Regional Rural Banks and Cooperative Banks in the district. (Refer Table 2.6 of Volume II).

8. Road and Railway network

100 Kms of 2 National highways (NH-6 & NH-201), 175.835 Kms of 3 nos. Of State highways, 77.592 kms major district roads are connected in the district. Besides, 35 kms of single railway line & 23 kms of double railway line with 4 railway stations are providing convenient communication facilities in the district. (Refer Table 1.41 & 1.42 of Volume II).

9. Cyclone and Flood Shelters

The district has 3 flood shelters (. But, the district also used schools and BNRGSK building as temporary flood shelters.

Sl. No.	District	Block	GP	Village	MCS/ MFS	Under Scheme
1	Bargarh	Bheden	Gondtutum	Gondtutum	MFS	CMRF (By RD dept-post Phailin)
2	Bargarh	Ambabhona	Bhainatura	Ganthiapali	MFS	CMRF (By RD dept-post Phailin)
3	Bargarh	Ambabhona	Kapasira	Antaradi	MFS	CMRF (By RD dept-post Phailin)



Multi-purpose Flood Shelter, Ganthiapali, Ambhabona Block



Multi-purpose Flood Shelter, Antaradi
Ambhabona Block



Multi-purpose Flood Shelter, Gandturing
Bheden Block

10. Rain Gauge and Automatic Weather Stations

The district has 12 Rain Recording stations to record the rainfall on regular basis. The recorded are updated in Odisha Rainfall Monitoring, a web-based rainfall monitoring portal of Government of Odisha.

Chapter- 3

3.1 Hazard, Vulnerability and Risk Assessment: -

This chapter largely deals with the disasters that Bargarh district experienced. Based on this, the vulnerability assessment of people and their income sources, infrastructure, crops, livestock resources, drinking water supply, daily necessities, communication and transportation system, public distribution, medical facilities and other elements has been done so that such elements can be safely shifted to, or to be taken care of before any unexpected disaster or during the disasters. This is the most important part of the plan.

3.2 Multi-hazard Profile of the District:

In the recent past the District has faced drought during 2010, 2011, 2015, 2016, 2017 & 2018 and Flood / Heavy rain during 2011, 2014 & 2018. During 2014, Ambabhona block has received more than 300 mm of rainfall in a single day. During 2018, Attabira block has received 350.40 mm & Bargarh block has received 309.80 mm of rainfall in a single day. Besides the district also experienced Pest Attack (BPH) during the year 2017 in which the entire district suffered a lot due to damage of standing paddy crop.

Besides, drought has become a perennial and recurring phenomenon in this region and the major cause of concern is that the frequency of drought is increasing rapidly in the current years so is the magnitude i.e. in every alternate year one can expect a drought like situation with a greater enormity. Almost 70% area of the district is prone to drought. More than 60 pc of the cultivable area is rain fed and as agriculture is the major source of livelihood, failure and erratic behavior of monsoon over consecutive years has had serious adverse impact on the socio-economic condition of the people living in these areas leading to drastic crop and livestock losses, large-scale migration, distress sale of household assets, starvation, malnutrition, acute drinking water shortage, school dropouts, child labour etc. These things have been highlighted in different Medias drawing national and international attention. Meager irrigation facilities, sloppy and undulating terrain, severely eroded and unproductive agricultural land, skewed land distribution, subsistence agriculture, depleted ground water resource and less diversified livelihood system has further compounded the problem. The inter play of climatic and non-climatic factors in this region is becoming more and more complex, there by intensifying the impact of drought on the community.

While the district is reeling under the grip of drought since long time, it has been recently experiencing other disasters like flash flood, lightning, fire accident and heat wave. Poor drinking water, health and sanitation facilities in the remote villages often leads to the outbreak of epidemics like diarrhea, malaria etc. Poor natural resource base, huge population pressure, inadequate infrastructure and less adaptive capacity of the community are increasing their exposure to these natural hazards. Due to the global climate change the occurrence of natural hazards will be more frequent, the poor community will

become more vulnerable and the resultant impact will be more devastating. The disastrous effects of natural hazards cannot be eliminated completely but the miseries can be minimized to a reasonable extent by adoption of appropriate management practices. Since long, disaster management strategies basically focus on the relief, rehabilitation, reconstruction and restoration aspects i.e. crisis management. This approach sometime found ineffective because response is untimely, insufficient, poorly coordinated and poorly targeted to disaster affected groups or areas, hence often increasing the

3.3 Major Disasters/ Incidents during 2007-2021

A brief profile of major disasters/ incidents occurred in the district during last 10 years (2007 to 2021)

Table-3.1

Sl. No.	Disaster/ Incident	No. of incidents during (2007-2021)	No. of Deaths	Affected Population	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							School/ AWC Buildings	Hospitals	Road in Km.	Other Critical Infrastructure	
Disasters as approved under SDRF/ NDRF Guidelines.											
1.	Flood	4	10	15638	33	11335	0	0	1258.46	0	8.30
2.	Drought	6	0	3 Lakh	0	0	0	0	0	0	250069.77
3.	Fire	340	47	680	15	347	0	0	0	0	2.3
4.	Hail Storm	5	2	1 Lakh	0	0	0	0	0	0	42252.93
5.	Cyclone	1	0	4621	0	0	0	0	0	0	2396.966
6.	Earth Quake	0									
7.	Tsunami	0									
8.	Landslide	0									
9.	Avalanche	0									
10.	Cloud Burst	0									
11.	Pest Attack	6	0	57453	0	0	0	0	0	0	3735.37
12.	Cold Wave/ Frost	0									
State Specific Disasters as per Notification No.1936 Dt. 01.06.2015											
13.	Lightning		164								
14.	Heat wave		40								

15.	Whirlwind		1								
16.	Tornado										
17.	Heavy Rain	3	0	5427		1972					
18.	Boat Accidents (Other than during Flood)	1	2								
19.	Drowning (Other than during Flood)		86								
20.	Snake Bite (Other than during Flood)		126								
Other Disasters											
21.	Animal Menace										
22.	Building Collapse		4								
23.	Stampede										
24.	Epidemics										
25.	Industrial/ Chemical Accidents										
26.	Road Accidents										
27.	Railway Accidents										
28.	Hooch Incidents										
29.	Communal Riot										
30.	Dam Break/ Spill Way related flood.										
31.	Soil/ Coastal erosion										

(Year wise details of each disaster occurred during the last 10 years is at Table No. 3.1 of Volume II of DDMP)

3.4 Vulnerability and Risk Assessment related to disasters

1. Cyclone

(Brief description about the tropical cyclones, type and the vulnerability of the district to be discussed followed by the table)

Table-3.4-Cyclone vulnerable areas of the District

Sl. No	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible Villages/ Wards	Vulnerable Population in	Milch and Draught animals	Houses			Vulnerable Infrastructure				
						Kucha	Semi Pucca	Pucca	School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructure	

(Note: Based on historical data the table to be filled up. Only concerned Blocks/ ULBs to be mentioned)
(Detailed list of vulnerable Villages/Wards is at table No. 3.2 of Volume II of the DDMP)

Table- 3.5 -Electrical Infrastructure Vulnerable to Disaster

Sl. No.	Name of the Block/ ULB	No. of Grid Stations	No. of 33/11 KV Substations	No. of Distributing Transformers			Conductor/ Electrical lines-11 KV or less (length in Kms.)	No. of Poles	No. of High-Tension Towers	High Tension lines above 11 KV (length in Kms.)
				11 KV or Less	11 KV < and <60KV	60 KV and above				

Table-3.6-Drinking water facility in the Hazard Prone areas:

Sl. No.	Name of the Block/ ULB	Total No. of Tube Wells	No. of Wells	PWS Schemes				Other Drinking Water Sources If any
				Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	

2. Tsunami

(Brief description on the Tsunami vulnerability of the district and past incidents if any)

Table-3.7- Tsunami vulnerable areas of the district

Sl. No	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible Villages/ Wards	Vulnerable Population in Nos.	Milch and Draught animals	Houses	Vulnerable Infrastructure			
							School Buildings / Anganwadi	Hospitals	Roads (in Km)	Other critical Infrastructure
1.										
2.										
3.										
4.										
5.										

(Note: all villages within 1.5 Km. of the coastline to be include and based on information available tables to be filled up. Only concerned blocks to be mentioned)

(Detailed list of vulnerable Villages/Wards is at table No. 3.2 of Volume II of the DDMP)

3. Earthquake

As per Earthquake Hazard Zoning Atlas-2016 issued by the National Disaster Management Authority (NDMA) and Building Materials and Technology Promotion Council (BMTPC).....

- The _____ District is coming under Zone-II (low damage risk zone)
- The total District is under Zone- III (Moderate damage risk zone)/
- _____% of the District is coming under Zone- III (Moderate damage risk zone)/
- _____ & _____ Blocks or parts of _____ & _____ Blocks of the district is coming under Zone- III (Moderate damage risk zone) and the other are under Zone-II (low damage risk zone)/ etc.

N.B. Earthquake Vulnerability Map is in Volume II

(Brief description on the Earthquake vulnerability of the district and past incidents if any)

Table-3.8-Earthquake vulnerable (Zone-III Moderate Seismic zone) areas of the district

Sl. No	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible Villages/ Wards	Vulnerable Population in Nos.	Animals	Houses	Vulnerable Infrastructure			
							School Buildings / Anganwadi	Hospitals	Roads (in Km)	Other critical Infrastructure

(Note: all villages within Zone -III & II of area to be include and based on information available tables to be filled up. Only concerned blocks to be mentioned)

4. Flood

(Brief description on the flood vulnerability of the district and past incidents to be discussed)

Table-3.9- Flood Vulnerable areas of the district in general

Sl. No.	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible villages/ Wards	Population in Nos.	Milch and Draught animals	Houses	Vulnerable Infrastructure			
							School/ AWC Building	Hospitals	Roads (in Km)	Other Critical Infrastructure

(Note: Based on historical data the tables to be filled up. Only relevant blocks to be mentioned)

(Detailed list of vulnerable Villages/Wards is at table No. 3.2 of Volume II of the DDMP)

Table-3.10- Causing agent wise flood vulnerable areas of the District

Sl. No	Causing agent- Rivers/ Water bodies/Tidal Wave/ Others	No. of Susceptible Blocks/ ULB	No. of Susceptible GPs	No. of Susceptible Villages/ Wards	Vulnerable Population	Milch and Draught animals	Houses	Vulnerable Infrastructure			
								School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infra.
	River-1										
	River-2										
	Tidal Wave										
	Flash Flood										
	Others										

(Note: Based on historical the tables to be filled up. Only relevant blocks to be mentioned. The causing agents outside district boundary, having vulnerability should also be mentioned)

Table- 3.11 - Agriculture and Flood Vulnerability

Sl. No.	Name of the Block	Cultivable Area (Hectares)		Area susceptible to Flood (Hectares)	
		Paddy	Non-Paddy	Paddy	Non-Paddy

Table-3.12-Electrical Infrastructure in the Flood Prone Area

Sl. No.	Name of the Block/ ULB	No. of 33/11 KV Substations	No. of Distributing Transformers			Conductor/ Electrical lines-11 KV or less (length in Kms.)	No. of Poles	No. of High-Tension Towers	High Tension lines above 11 KV (length in Kms.)
			11 KV or Less	11 KV < and <60KV	60 KV and above				

Table-.3.13- Drinking water and Flood Vulnerability

Sl. No.	Name of the Block/ ULB	Total No. of Tube Wells	No. of Tube Wells with raised platforms	No. Sanitary Wells	PWS Schemes				Other Drinking Water Sources If any
					Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	
1	Ambabhona	1027	10	1	40	130	19	480	1
2	Attabira	1403	0	2	52	169	36	624	2
3	Bargarh	1663	0	0	53	172.25	54	636	3
4	Barpali	1228	0	2	43	139.75	34	516	4
5	Bhatli	1125	0	0	45	146.25	42	540	5
6	Bheden	1440	5	0	48	156	36	576	6
7	Bijepur	1250	0	1	54	175.5	37	648	7
8	Gaisilet	1094	0	8	48	156	25	576	8
9	Jharbandh	1182	0	0	34	110.5	20	408	9
10	Padampur	1479	0	2	52	169	31	624	10
11	Paikmal	1445	0	3	52	169	29	624	11
12	Sohella	1438	0	1	74	240.5	49	888	12
13	Total=	15774	15	20	595	1933.75	412	7140	13

3.5 Events/ Festivals/ Functions organized in the district where mass gathering occurs:

(The events where the strength of population gathering is 5000 or above is to be mentioned in the table)

Table-3.14

Sl. No.	Name of the Event/ Festival/ Function	Place (Block & Gram Panchayat)	Duration of the event (in No. of days)	Month (as per English Calendar)	Strength of population gathering (Approx) Per day	Remarks (other vulnerabilities associated with the place/ event, if any to the mentioned)
1	Dhanu Jatra	Bargarh	11 days	December - January	5,00,000 – 7,00,000	
2	Nrusimha Chaturdasi Jatra	Paikmal, Bargarh	4 day	April-May	50,000 – 1,00,000	

3	Sithalasasthi	Barpali	7 day	May-June	50,000 – 70,000	
4	Ratha Yatra	Bhatli	2 day	July	50,000 – 80,000	
5	Papanga Mahotsav	Papanga, Bheden	4 days	April	50,000 – 60,000	
6	Durgapuja	Sohela	10 days	September-October	50,000 – 80,000	
7	Dussehra	District Headquarter, Bargarh	7 days	September-October	20,000 – 30,000	

3.6 Boat Operation points

Table-3.15- Details of Boat Operation Points

Sl. No.	Name of the Block	Name of the ghat/boat operation point	Name of the water body	No. of Panchayats/villages connected	Daily to and fro movement of people in Nos. (Approx.)	Type of boats operating in Nos.	
						Mechanised	Non-Mechanised
1	Ambabhona	Barangakota		Bhainatora			
		Damdei		Uttam			
		Antaradi		Kapasira			
2	Bheden	Talgaon		Ainalpali			
		Bargan					
		Chichinda		Chichinda			
		Pudapali		Luhakhandi			
		Acchandapali		Mahulpali			
		Mahulpali					
		Bhutload					
		Brahmana Turum					
				Kamgon		Manpur	
3	Gaisilet	Raisalpadar		Raisalpadar			
		Jamutpali		Jamutpali			
4	Rajborasambar	Jamarla		Palsapali		1 (country Boat)	
		Charpali		Charpali		1 (country Boat)	
5	Paikmal	Chhetgaon		Chhetgaon			
		Sambalpuri		Sareikela			

6	Barpali	Patkulunda		Patkulunda			
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3.7 Land Slide Vulnerability

Table-3.16- Details of Land Slide Vulnerability

Sl. No.	Land Slide Zone/ Area/ Location	Area in Sq. Km	No. of susceptible Villages/ Wards	Vulnerable Population in Nos.	Houses	Vulnerable Infrastructure			
						School / AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructure

(Note: Detailed list of villages, School, Hospitals and Roads are given in the Volume II of the DDMP)

3.8 Lightning

Table-3.17- Details Lighting Incidents

Sl. No.	Name of the Block/ ULB	Identifiable incidents of lightning hit in last 5 years		No. of Lightning events	No. fatality/ Deaths	Injured Persons
		No. GPs	No. of Villages/ Wards			

(List of villages is at Table No.3.2 of Volume II of the DDMP)

3.9 Major Industrial Establishments/ Chemical & Other hazardous material storage points

Table-3.18

Sl. No.	Name & location of the Industry / Storage point	Department/ Ownership	Name of hazardous materials stored	Quantity	Total no. of workers in the establishment	No. of adjacent Villages/ Habitations within 2 Kms. radius	Susceptible Population	House	Vulnerable Infrastructure		
									School Buildings & AWC	Hospitals	Other Critical Infra.

(Detailed vulnerable habitations list and other critical infrastructure is at Table No. 3.2 of Volume II of the DDMP)

3.10 Drought

Table- 3.19 -Table to be filled based on data available at the district level. Information for all the blocks of the district to be given

Sl. No.	Name of the Block	Average Annual Rain Fall	Ground Water Level	Cultivated Area (In Hectares)			
				Paddy		Non- Paddy	
				Rain fed Area	Irrigated area	Rain fed Area	Irrigated area

Table-3.20- Drought Vulnerability

Sl.n o.	Name of the Block	Year- 2018				Year – 2019				Year-2020				Year- 2021			
		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)	
				Paddy	Non-Paddy			Paddy	Sl. No.			Paddy	Non-Paddy			Paddy	Non-Paddy
1	Bargarh	5	16			10	27			9	25	4165.65		7	18	1720	
2	Barpali	5	13			16	46			15	48	3915.128		10	37	2120	
3	Bhatli	16	80			16	81			16	81	10671.81		12	65	4408	
4	Ambabhona	0	0			11	80			15	83	5999.04		11	56	3295	
5	Attabira	0	0			2	7			0	0	0		0	0	0	
6	Paikmal	20	113			22	128			22	114	12445.19		16	82	5353	
7	Rajborasambar	14	83			21	150			22	150	16958.05		15	92	5888	
8	Jharbandh	26	128			14	83			14	83	4462.00		9	83	3864	
9	Sohela	24	110			26	128			26	128	13873.60		20	98	4453	
10	Bijepur	19	103			24	110			24	109	13536.40		15	69	4157	
11	Gaislet	14	83			19	103			19	103	5291.00		12	78	2750	
		150	798			943	181			182	924	91317.87		127	678	38008	

(Information to be given for previous 4 drought years and the relevant blocks are to be mentioned in the table. The detailed list of drought prone Villages is at Table No.3.3 of Volume II of the DDMP)

3.11 Drinking Water Crisis

Table -3.21 - Details of Drinking Water Crisis

Sl. No	Name of the Block/ ULB	Villages/ Wards without proper source of drinking water		Villages/ Wards having crisis of drinking water during summer season		Fluoride Contamination		Others Arsenic/ Saline/ Iron If any
		No. of Villages/ Wards	Population	No. of Villages/ Wards	Population	No. of Villages/ Wards	Population	
1	Ambabhona			3	309			0
2	Attabira			0	0			0
3	Bargarh			4	412	1		0
4	Barpali			1	103	5		0
5	Bhatli			0	0			0
6	Bheden			1	103	3		0
7	Bijepur			0	0	6		0
8	Gaisilet			5	515	8		0
9	Jharbandh			0	0			0
10	Padampur			1	103	1		0
11	Paikmal			4	412	2		0
12	Sohella			0	0			0
	Total			19	1957	26		0

(Block wise village list is at Table No.3.2 of Volume II of the DDMP)

3.12 Railway Line Exposed to Different Hazards

Table -3.22- Details of Railway line exposed to different hazards

Sl. No.	Hazard	Length of Railway line exposed (in Km.)	Location
	Flood		
	Land Slide		
	Storm Surge		
	Tsunami		

(Note: Total length railway line, number of stations and movement of trains to be discussed first followed by the table)

3.13 Road Accidents

Table-3.23- Details of Road Accidents

Sl. No.	Stretch of Road (From - to)	Length in Kms.	No. of Traffic Congestion Areas	No. of Accident-Prone Areas	No. of villages/habitations adjacent to accident prone areas
1	Tukura Chowk to Bharat Petrol pump	03 Km	1.Attabira P.S	7	3
2	Govindpur Chowk:- Bharat Petrol Pump to Imdian Oil	02 KM	2.Sadar P.s	8	2
3	Vikash School Chowk, Barahaguda:- Barahaguda to Padhanpali over bridge.	04 KM	3.Town P.S	15	2
4	Pipalmunda Chowk:- Nila Dhawa to Nibedita ITI.	1.7 KM	4.Bhatli P.S	10	2
5	Vikash Schol Bargarh Town:- Vikash School to Haladipali Chowk.	2.5 KM	5.Town P.S	12	1
6	Bhatli Chowk:- Sai Multi Hospital to Saimandir Jerra Bridge.	1.0 KM	6.Town P.S	15	1

(For national and state highways only. The total network of state and national highways in the district to be discussed in detail followed by the table)

3.14 Population Requiring Special Care

Table-3.24- Details of Population Requiring Special Care

Sl. No. 1	Block/ ULB	No. of HHs headed by Women	No. of HHs headed by PWD	No. of Persons with Disability		No. of Widow	No. of Children		No. of Orphans		No. of Aged Persons (60 and above)		No. of Pregnant and lactating mothers
				M	F		0-5 Years	6-14 Years	M	F	M	F	

(The table is the block wise abstract of population requiring special care. Village wise details are at Table No. 3.16 of Volume II of the DDMP)

3.15 Identified old and depilated Buildings in the District (if any)

Table-3.25- Details of depilated buildings

Sl. No.	Block/ ULB	No. of Vulnerable Buildings	Population at Risk (inhabitants and the neighbouring)	Remarks
	NIL	NIL		

3.16 Forest Fire:

Table-3.26- Details of Forest Fire Incidents in the District

Sl. No.	Name of the Division	Range	No. of Fire Incidents Reported during last 5years					Area Affected in Ha.					Loss of life/ property if any		
			2017	2018	2019	2020	2021	Total	2017	2018	2019	2020	2021	Total	
1	Bargarh	Bargarh	0	7	6	0	22	35	0	1.6	0.8	0	16.70	19.10	Damage to forest shrub cover.
2		Bhatli	106	194	25	1	132	458	39.926	50.89	7.81	0.4	134.15	233.176	
3		Padampur	117	125	58	9	260	569	35.64	159.4	38.6	12.50	119.10	365.24	
4		Paikmal	129	151	71	4	308	663	65.96	116.34	72.05	1.50	98.03	353.88	
5		Ghess	213	206	113	44	232	808	111.84	73.8	44.8	26.38	110.64	367.46	
6		Nursinghnath	75	55	46	24	136	336	31.87	45.94	29.89	16.20	133.58	257.48	
		Total	640	738	319	82	1090	2869	285.236	447.97	193.95	56.98	612.20	1596.336	

Table-3.27-Forest Fire Vulnerability:

Sl. No	Name of the Division	Range	Area (in Sq. Km)	Total Notified Forest Area (in Sq. Km)	High Risk Zone (Area in Sq Km)	No. of Villages/ habitations inside/ adjacent to the High-Risk Zone	Medium Risk Zone (Area in Sq. Km)	No. of Villages/ habitations inside/ adjacent to the Medium Risk Zone	Low Risk Zones (Area in Sq. Km)	No. of Villages/ habitations inside/ adjacent to the Low-Risk Zone
1	Baragarh	Bargarh	14.89084	14.89084	0	0	0	0	14.89084	13
2		Bhatli	161.91172	161.91172	3.5	13	7.5	21	184.5	38
3		Padampur	161.21362	161.21362	66.88	42	9.18	23	7.26	20
4		Paikmal	108.52882	108.52882	58.42111	7	31.62012	13	18.48759	25
5		Ghess	141.2197	141.2197	65.5	5	34.0	9	41.7197	13
6		Nrusinghnath	103.55906	103.55906	50.0	11	40.0	9	13.55906	4
		Total		691.32376	691.32376	244.30111	78	122.30012	75	244.41719

(N.B. The name of the vulnerable villages along with population details under different risk zones is in Volume II)

3.17 Fire and Life Safety of High-Rise Buildings (buildings having a height of more than 15 meter).

Table-3.28- Details of High-Rise Buildings

Sl. No.	Name of the ULB/ Block	No. of High-Rise Buildings	No. of High-Rise Buildings where Fire & Life Safety Audit has been carried out in last 2 years.	Remarks
1	Bargarh	29	13	
2	Padampur	1		
3	Barpali	1		

Table-3.29- Details of High-Rise Buildings

Sl. No.	Name of the High-Rise Building	Location/ Area	Name, Address, Contact Details of the Owner	Whether Fire & Life Safety Audit Under Taken (Yes/ No.)	If Yes then the Year and the Name of the Agency	Vulnerable Population
1	Vikash Multi Speciality Hospital (VMSH) At-Barahguda PS/Dist-Bargarh	At-Barahguda PS/Dist-Bargarh	D.Murali Krishna (Chairman) 9437052465	Yes	2022	
2	Vikash Institution of Technology (VIT) At-Barahguda PS/Dist-Bargarh	At-Barahguda PS/Dist-Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
3	VIT Girls Hostel Building (Engineering Girls Hostel) At-Barahguda PS/Dist-Bargarh	At-Barahguda PS/Dist-Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
4	Higher Secondary Boys Hostel (College Hostel) At-Barahguda PS/Dist-Bargarh	At-Barahguda PS/Dist-Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
	Vikash School	At-	D.Murali Krishna	Data is	Data is	

5	Girl Hostel At-Barahguda PS/Dist- Bargarh	Barahguda PS/Dist- Bargarh	(Chairman) 9437052465	available at Office of the Fire Officer, N.R., Sambalpur	available at Office of the Fire Officer, N.R., Sambalpur	
6	Vikash School Old Boys Hostel At-Barahguda PS/Dist- Bargarh	At- Barahguda PS/Dist- Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
7	Vikash School Boys Hostel(New) At-Barahguda PS/Dist- Bargarh	At- Barahguda PS/Dist- Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
8	Vikash Staff Quarter A At-Barahguda PS/Dist- Bargarh	At- Barahguda PS/Dist- Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
9	Vikash Staff Quarter C At-Barahguda PS/Dist- Bargarh	At- Barahguda PS/Dist- Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
10	Vikash School Academy & CBSE Block At-Barahguda PS/Dist- Bargarh	At- Barahguda PS/Dist- Bargarh	D.Murali Krishna (Chairman) 9437052465	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
11	Hotel Nikki's Residency Gurudwar chowk, Railway Station Road,Bargarh	Gurudwar chowk, Railway Station Road,Bargarh	Suman AgrawalSuman Agrawal 9861314745	Yes	2022	
12	Kishore Nursing Home, Bhatli Chhowck, Bargarh	Bargarh	Pyarilal Tripathy 9437050332	Data is available at Office of the Fire Officer, N.R.,	Data is available at Office of the Fire Officer,	

				Sambalpur	N.R., Sambalpur	
13	Gajanan Apartment, Bargarh	Bargarh	Anil Agrawal 9437055752	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
14	Maa Shyam Enclave Apartment, Bargarh	Bargarh	Hari Prasad Agrawal 9437058842	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
15	Vraj Dham Residency, Bargarh	Bargarh	Roshan Kumar Sahu 7008089943	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
16	Badri Prasad Apartment Block "E", Bargarh	Bargarh	Mitharam Sahu 9937121099	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
17	Badri Prasad Apartment Block "D", Bargarh	Bargarh	Bhagirathi Dash 9438534664	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
18	Badri Prasad Apartment Block "F, Bargarh"	Bargarh	Chandramohan Agrawal 8984984422	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
19	Badri Prasad Apartment Block "B", Bargarh	Bargarh	Ramesh Ch. Sahu 9437919777	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
20	Badri Prasad	Bargarh	Jitendra Sharma 7008476504	Data is	Data is	

	Apartment Block "C", Bargarh			available at Office of the Fire Officer, N.R., Sambalpur	available at Office of the Fire Officer, N.R., Sambalpur	
21	Sainath Vila Nagenpali, Bargarh	Bargarh	Manish Mohanty 9437057175	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
22	N B Roy Apartment Nata Colony, Bargarh	Bargarh	Chitaranjan Mohanty 9437027277	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
23	Horiom Heights Near Ashakiran, Bargarh	Bargarh	Mr C.M. Rao 9437707700	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
24	Shree Kunj Heights A Block, Bargarh	Bargarh	Hari Prasad Agrawal 9437058842	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
25	Shree Kunj Heights B Block, Bargarh	Bargarh	Hari Prasad Agrawal 9437058842	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
26	Asha Kiran About, Bargarh	Bargarh	Sashi Bhusan Panda 9938562882	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	

27	DHH, Tukurla, Bargarh	Bargarh	Dr. B.B. Meher DMO(MO) 9438679446	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
28	DHH, MCH Building, Tukurla, Bargarh	Bargarh	Dr. B.B. Meher DMO(MO) 9438679446	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
29	Old DHH Building, Bargarh	Bargarh	Dr. Arun Kumar Patra (C.D.M.O) 9439982249	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
30	CHC Medical At/PS- Barpali Dist- Bargarh	At/PO/PS- Barpali Dist- Bargarh Pin- 768029	Dr. Rajesh Behera 9437271836	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	
31	MCH Building, SDH, Padampur	Padampur Town	Dr. Tahasil Sahu 9439982262	Data is available at Office of the Fire Officer, N.R., Sambalpur	Data is available at Office of the Fire Officer, N.R., Sambalpur	

(As per National Building Code -2016 Para E-7 of Annexure E)

3.18 Embankments:

Table- 3.30-Irrigation Division Wise Embankments in the District:

Sl. No.	Division	Name of the Embankment	Type (Capital Embankment/ Other Agricultural/ Test Relief/ Saline)	Length (in Km.)

Table-3.31-Division wise list of Vulnerable Points:

Sl. No.	Name of the	Name of the Embankment/	Location of the Vulnerable	Affected Length (in	Name of the	Name of the

	Division	River	Point	Mtr.)	Block	Villages to be affected

3.19 Dam- Burst Scenario: (For large Dams)

A. Table-3.32

Sl. No.	Name of the Dam	Location & Water body	Type (Major / Medium)	Storage Capacity	Full Reservoir Level (FRL)	Maximum Water Level (MWL)	Dam Break Model / Risk Map for Dam break developed? (Yes/No)	Pre and Post Monsoon Inspection of Structural Measures done? (Yes/No)	No. of Villages to be affected/ needs to be evacuated in case of a possible scenario (District & Block Wise)	Remarks
1	Kumbho MIP	Village & GP- Kumbho in Ambabho na Block.	Minor Irrigation Project	407.52 Ha.M			No	Yes	5	
2	Kularijore MIP	Village- Sulsulia, GP- Khaliapali in Bhatli Block.	Minor Irrigation Project	350.60 Ha.M			No	Yes	4	
3	Padampurn alla MIP	Village- Saplaha, GP- Badikata in Padampur Block.	Minor Irrigation Project	486.99 Ha.M			No	Yes	3	
4	Khandijhar an MIP	Village- Salepali, GP- Paikmal in Paikmal Block.	Minor Irrigation Project	211.25 Ha.M			No	Yes	3	
5	Magaranalla MIP	Village & GP- Temri	Minor Irrigation	141.50			No	Yes	2	

		in Paikmal Block.	on Project	Ha.M						
6	Malkennalla MIP	Village & GP-Katabahal in Gaisilet Block.	Minor Irrigation Project	223.75 Ha.M			No	Yes	4	
7	Talkhol MIP	Village-DShanupadar, GP-Ghess in Sohela Block.	Minor Irrigation Project	255.00 Ha.M			No	Yes	1	
8	Victoriasagar MIP	Village-Sanimal, GP-Sanimal in Sohela Block.	Minor Irrigation Project	331.90 ha.M			No	Yes	1	

3.20 Contingency Planning for Dam Bursts Scenario:

1. For Dam – A

Table-3.33

Sl. No.	District	Block	Name of the Village	Evacuation Route for the village/s	No. of HHs	Population	Safe Shelter Identified	Remarks

2. For Dam - B

Sl. No.	District	Block	Name of the Village	Evacuation Route for the village/s	No. of HHs	Population	Safe Shelter Identified	Remarks
1	Bargarh	Ambabhona	Kumbho, Kutrapali, Lambipali, Sareipali & Kutrajharan	-	-	2000	No	
2		Bhatli	1) Khaliapali, Nuagarh, Sulsulia, Talpali,	-	-	2500	No	
3		Padampur	Kadalimunda, Gambharidihi,	-	-	5000	No	

			Kusunapada & Padampur					
4		Paikmal	Salepali, Kenabuda, Mandiadhupa, Temri & Cheliamal	-	-	5400	No	
5		Gaisilet	Katabahal, Talpali, Khuntpali &	-	-	3000	No	
6		Sohela	Ghess & Batterma	-	-	600	No	

Table-3.34

3. Formation and Subsequent Bursting of Landslide Dams:

Table-3.35

Sl. No.	Land Slide Area/ Location Vulnerable for formation of land slide Dams	No. of Villages likely to be affected	Population to be affected

3.21 Cultural Heritage Sites and Precincts:

Table-3.36- Details of Cultural Heritage Sites and Precincts in the District

Sl. No.	Cultural Heritage site/precinct	Address/Location	Category (Centrally Protected Monument/ State Protected/ UNESCO World Heritage Site/ Unprotected Monument)	Name & Contact details of the Controlling/ Supervising Authority at the district level	Hazards & Vulnerability of the Place	Remarks (if Any) (Average Foot Fall and Days/ Period during which the place receives highest Foot Fall)

3.22. Museums:

Table-3.37- Details of Museums in the District

Sl. No.	Name of the Museum	Location and Address	Type	Category/Controlling Body (ASI/Central Government/ State Government/ Private/ Public Trust/ Privately Managed/ University/ College)	Name & Contact details of the Controlling Authority/ Owner	Hazard & Vulnerability	Average Foot Fall and Days/ Period during which highest Foot Fall is received)	Remarks (if any)

3.23 Human Animal Conflict:

i. Loss of Human Lives and Property due to Animal Attack-

Table-3.38

Sl. No.	Vulnerable Place (Village/ Panchayat etc.)	Causing Agent/Animal (Elephant, Bear, Crocodile etc.)	Number of Human Lives lost during last 5 years	Damage to House and Property during last 5 years	Crops Damaged

ii. Loss of Animal Lives due to Man-Made Causes

Table -3.39

Sl. No.	Vulnerable Place/ Location	Causing Agent (Railway line/ Electric transmission lines etc.)	No. of Incidents	Number of Animal Lives lost

Chapter – 4

Institutional Arrangement: -

4.1 National Disaster Management Authority (NDMA)

The National Disaster Management Authority (NDMA) was constituted under the Sub-section (1) of Section (3) of National Disaster Management Act 2005. NDMA is the apex body for Disaster Management in the country headed by the Hon'ble Prime Minister of India to lay down policies, plans and guidelines to manage disaster and coordinating their enforcement and implementation for ensuring timely and effective response to disaster.

The Chairperson of the NDMA is the Hon'ble Prime Minister of India (*ex-officio*) and others members not exceeding than nine may be nominated by him. The Chairperson may designate one of the members to be the Vice-Chairperson.

4.2 National Executive Committee (NEC)

The central government has constituted a National Executive Committee (NEC) under sub-section (1) of Section (8) of DM Act-2005 to assist the National Disaster Management Authority in the discharge of its function and also ensure compliance of the directions issued by the central government.

The Union Home Secretary is the Chairpersons (*ex-officio*) of NEC. The Secretaries to the Government of India in the ministries/departments having administrative control of the agriculture, defense, drinking water supply, environment and forests, finance (expenditure), health, power, rural development, science and technology, space, telecommunication, urban development, water resources and chief of the integrated defence staff of the chief of staffs are other members of NEC.

(Please refer Figure__ of Volume –II (Page no.) for Central Government Notification on constitution of NEC)

4.3 State Disaster Management Authority (SDMA)

The State Disaster Management Authorities (SDMA) has to be constituted by every state government under the subsection (1) & (2) of section 14 of Disaster Management Act 2005. The Hon'ble Chief Ministers of the state are the Chairpersons (*ex-officio*) of SDMA and other members not exceeding than eight may be nominated by the Chairpersons. The Chairman of the State Executive Committee (SEC), Chief Secretary of the State is a member and Chief Executive Officer (*ex-officio*) of SDMA.

The State Disaster Management Authority shall:-

- a) Lays down policies and plans for disaster management in the State.
- b) Approves the State Plan in accordance with the guidelines laid down by the NDMA,
- c) Coordinates the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures.
- d) Review the developmental plans of different departments of the State to ensure the integration of prevention, preparedness and mitigation measures.
- e) Lay down guidelines to be followed by the departments of the State Government for the purpose of integration of measures for prevention of

disasters and mitigation in their development plans and projects and provide necessary technical assistance there for.

- f) Review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government & issue such guidelines as may be necessary.
- g) Lay down detailed guidelines for providing standards of relief (Not less than the minimum standard of relief in the guidelines of NDMA) to persons affected by disaster in the State.

(Please refer Figure _ of Volume –II (Page no. _) for Odisha Government Notification on reconstitution of SDMA)

4.4 State Executive Committee (SEC)

The State Executive Committee (SEC) has been constituted by the State Governments under sub-section (1) & (2) of section (20) to assist the State Disaster Management Authority (SDMA) in the performance of its function and to coordinate action in accordance with the guidelines laid down by the SDMA and ensure the compliances of directions issued by the State Government under the DM act. The Chief Secretaries of the States are the Chairman of SEC (ex-officio). Four Secretaries of State Government are the other member's ex-officio. The Chairperson of SEC use powers delegated by SDMAs and state Governments.

The State Executive Committee shall:-

- a) Coordinate and monitor the implementation of the National Policy, National Plan and State Plan.
- b) Examine the vulnerability of different parts of the State to different forms of disaster and specify measures to be taken for their prevention and mitigation.
- c) Lay down guidelines for preparation of disaster management plans by the departments of the Government of the State and the District authorities and monitor the implementation of the plans.
- d) Evaluate preparedness at all government and non-government levels to respond to any threatening disaster situation or disaster and give all directions where necessary for enhancing such preparedness.

(Please refer Figure _ of Volume –II (Page no. _) for Odisha Government Notification on constitution of SEC)

4.5 Revenue and Disaster Management Department:

The Revenue and Disaster Management Department is responsible for providing immediate relief to the people affected by various calamities like floods, droughts, cyclones, hailstorms, earthquakes, fire accidents, etc. It also takes initiatives for relief, rescue, rehabilitation and restoration work. The Department is headed by the Principal Secretary/Addl. Chief Secretary, Revenue and Disaster Management Department who exercises all administrative and financial powers.

4.6 Special Relief Organization:

The Special Relief Organisation was established under the Board of Revenue in 1965-66 for carrying out relief and rescue operation during and after various disasters. Since its inception, the scope of Relief Organisation has been diversified. Now it deals with disaster management

i.e. response, relief and rehabilitation. It coordinates with districts/departments for quick relief and rescue operation, reconstruction and rehabilitation work. It also promotes disaster preparedness at all levels in the State with the assistance of Odisha State Disaster Management Authority (OSDMA). Quick response in the natural calamities is the hall-mark of Special Relief Organisation.

4.7 Odisha State Disaster Management Authority (OSDMA):

Odisha State Disaster Mitigation Authority (OSDMA) was established by the Government of Odisha as an autonomous organization vide Finance Department Resolution No. IFC- 74/9951779/F dated the 28th December 1999 (in the intermediate aftermath of the Super-cyclone in 1999). It was registered under the Societies Registration Act, 1860 on 29.12.1999 as a non-profit making & charitable institution for the interest of the people of Odisha, with its headquarters at Bhubaneswar and jurisdiction over the whole State.

The Authority has the mandate not only to take up the mitigation activities but also the relief, restoration, reconstruction and other measures. These activities cover the entire gamut of disaster management including preparedness activities and also include:

- Coordination with the line departments involved in reconstruction,
- Coordination with bilateral and multi-lateral aid agencies,
- Coordination with UN Agencies, International, National and State-level NGOs,
- Networking with similar and relevant organizations for disaster management.
- Preparation of Disaster Management Plans at various levels
- Formulation of Guidelines, SoP pertaining to various hazards and disasters
- Capacity Building of various stakeholders with respect to Disaster Management

4.8 State Level Committee on Natural Calamity (SLCNC)

A State Level Committee on Natural Calamity (SLCNC) has been constituted under the Chairmanship of the Hon'ble Chief Minister to oversee disaster preparedness and response activities.

The Function of the SLCNC is -:

- a) To advise the State Government regarding precautionary measures to be taken in respect of flood, drought and other natural calamities.
- b) To assess the situations arising out of the calamities.
- c) To recommend to Government the nature and quantum of relief; and
- d) To recommend to Government the Policy to be adopted in giving such relief in areas affected by such calamities.

(Please refer Figure__of Volume –II (Page no. _) for Odisha Government Notification on reconstitution of SLCNC)

4.9 District Disaster Management Authority (DDMA)

Under the sub-section (1) of section 14 of DM act 2005. District Disaster Management Authority has been constituted by the State Government. The District Disaster Management Authority (DDMA) consists of the Chairperson and such number of the other members, not exceeding seven, as may be prescribed by the State Government, and unless the rules otherwise provide, it shall consist of the following namely: -

- a) The Collector or District Magistrate or Deputy Commissioner of the District is the Chairperson (*ex-officio*) of DDMA.
- b) The elected representative of local authority is the Co-chairperson (*ex-officio*) of DDMA.

Provided that in the Tribal Areas, as referred to in the Sixth Schedule to the Constitutions, the Chief Executive Member of the district council of autonomous district, shall be the co-Chairperson, *ex officio*

- a) The Chief Executive of the District Authority, *ex officio*;
- b) The Superintendent of Police, *ex officio*;
- c) The Chief Medical Officer of the district, *ex officio*;
- d) Not exceeding two other district level officers, to be appointed by the State Government

The State Government appoints an officer not below the rank of Additional Collector or Additional District Magistrate or Additional Deputy Commissioner, as the case may be of the District to be Chief Executive Officer of DDMA.

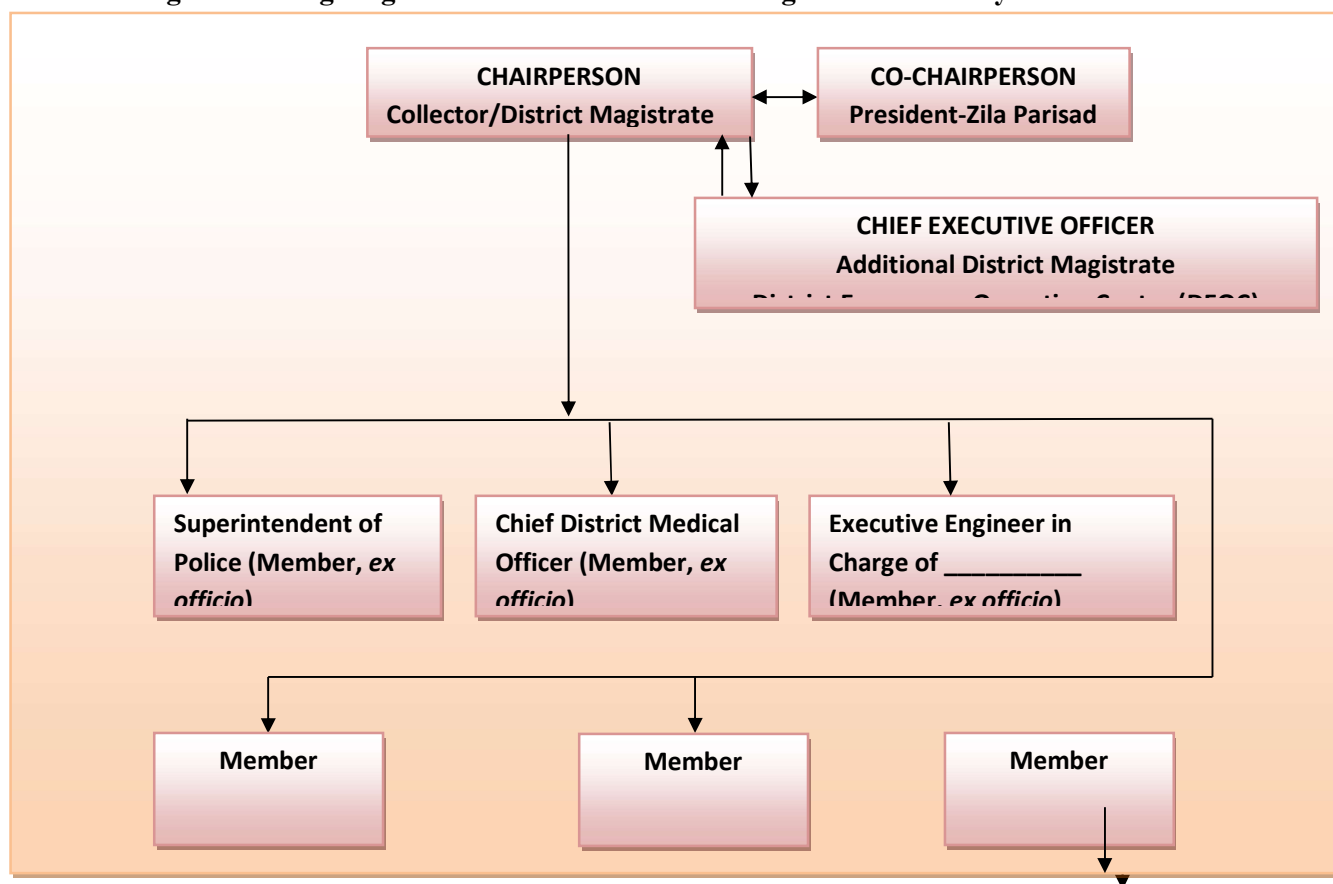
(Please refer Figure__of Volume –II (Page no.) for Odisha Government Notification on constitution of DDMA)

Table-4.1-Structure of District Disaster Management Authority

SI No.	Name of the Officer	Designation	Position in DDMA	Contact No.
1	Ms .Monisha Banerjee,IAS	District Magistrate Collector	Chairperson, ex- officio	9439779006/ 9937979181
2	Ms. Manini Bhoi	President, Zilla Parishad	Co- Chairperson, Ex-officio	8895014148
3	Sri. Parmar Smit Parshottamdas, IPS	Superintendent of Police	Member, ex- officio	9438916490
4	Dr. sadhu charana Dash	Chief District Medical Officer	Member, ex- officio	9439982249
5	Sri Mirdha Toppo , OAS (SAG)	Addl. District Magistrate	Chief Executive Officer, ex- officio	9437836824 8249137965
6	Sri. Krutibash Rout	Project Director, DRDA	Member, ex- officio	9437333757
7	Sri. Santosh Kumar	Chief District	Member, ex-	9861523495

	Moharana	Agriculture Officer, Agriculture	officio	
8	Sri. B.Panigrahi	Executive Engineer, Bargarh Canal Division	Member, ex-officio	9668601082
9	Sri. Surya Narayana Tripathy	Executive Engineer, LI	Member, ex-officio	9437554291
10	Sri. B.N. Meher	Executive Engineer, R.W.D	Member	9437255306
11	Sri. Fakir Mohan Sahu	Executive Engineer, RWS&S	Member	8280408033
12	MS.Nirupama Budek	District Emergency Officer	Member Secretary	9937056965

Figure-4.1-Organogram of District Disaster Management Authority



(Note: The above organogram of DDMA is an example; the organogram may be district specific, the District specific organogram may be incorporated)

The DDMA acts as the district planning; coordinating and implementing body for disaster management and take all measures for the purpose of disaster management in the district in accordance with the guidelines laid down by the NDMA and SDMA.

The District Disaster Management Authority (DDMA) shall:-

- a) Prepare Disaster Management Plan including District Response Plan of the District.
- b) Coordinate and Monitor the implementation of the National DM Policy, State DM Policy, State DM Plan and District DM Plan.
- c) Ensure that vulnerable areas of the districts are identified and prevention and mitigation measures are being undertaken by the departments of the Government both at district level and at local level.
- d) Ensure that guidelines for Prevention and Mitigation measures, Preparedness and Response as lay down by NDMA and SDMA are being followed by all departments of Government both at district and local level.
- e) Monitor the implementation of Disaster Management Plans prepared by the departments of the Government at the district levels.
- f) Lay down guidelines to be followed by different Government departments both at district level and local level for integrating disaster prevention and mitigation measures in their development plans and projects and provides necessary technical assistance therefor;
- g) Review the state of capability for responding to any disaster or threatening disaster like situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation.
- h) Review the preparedness measures and give directions to the concerned departments at the district level for bringing the preparedness measures to the levels required for responding effectively to any disaster.
- i) Organize, coordinate and facilitate specialized training programmes and awareness programmes for different level of officers, employees, voluntary rescue workers and community members for prevention and mitigation of disaster with support of governmental and non-governmental organization and local authorities.
- j) Set up, maintain, review and upgrade mechanism for early warning and dissemination of proper information to public.
- k) Review development plans prepared by the departments of the government at the district level, statutory authorities with a view to make necessary provisions therein for prevention of disaster or mitigation.
- l) Examine construction in any area in the district an ensure standards for prevention of disaster or mitigation laid down for such construction to be followed by the concerned departments and authorities.
- m) Identify buildings and places which could be used as relief centers or camps in the event of any disaster or disaster like situation and make arrangements for water supply and sanitation in such buildings and places.
- n) Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at short notice;
- o) Encourage the involvement of Non-Government Organization and Voluntary social –welfare institutions working at the grass root level in the district for disaster management.
- p) Ensure communication systems are in order and disaster management drills are carried out periodically.

- q) Perform such other functions as the State Government or State Authority may assign to.

4.10 Specific Task Assigned to members of DDMA by the Chairperson

- **Information Management Team:**
DI & PRO, Bargarh, Station Director- AIR, Bargarh, District Telecom officer, District control Room, Police Control Room
- **Food & Social Security Team:**
PD (DRDA), Sub-Collector, Bargarh/ Padampur/ All Tahasildar, All BDOs, DSWO, DWO, Civil Supply Officer, District Panchayat Officer, District Labour Officer
- **Water Management Team:**
EE (Irrigation), EE (MIP), EE (OLIP), AE (Agriculture), EE (RWSS), PD (Watershed)
- **Livelihood Team:**
DDA, Bargarh, DDH Bargarh, and DAOs, Horticulturist, CDVO, Asst. Director (Fishery), DFO (Kendu leaf), PD (Watershed), DSMS, GM-DIC, NGOs.
- **Forest & Environment Team:**
DFO, Bargarh/ NGOs
- **Rescue & Evacuation Team:**
SP, All Sub Collector, Dist. Fire Officer, ODRAF team
- **Emergency Health Management Team:**
CDMO, Red Cross, Representative Private Hospital, CDVO, NGO Coordination Cell
- **Relief Management Team:**
ADM, Sub-Collector, Bargarh/ Padampur/ All BDOs, All Tahasildars, Addl SP, NGOs/INGOs
- **Infrastructure Management Team:**
EE (R&B), EE (RD), EE (WESCO), APD (Technical), DRDA, EE (NHAI), District Panchayat Officer, NGOs/ INGOs

4.11 District Level Committee on Natural Calamity (DLCNC)

The Codal provision of Odisha Relief Code envisages the constitutions of District Level Committee on Natural Calamity (DLCNC) which is the apex committee at the district to monitor preparedness and suggests improvement in the response mechanism and finalizes the district disaster management plans. The members of DLCNC are as follows:

Table-4.2-Structure of District Level Committee on Natural Calamity

Sl No.	Name of the Member	Designation	Position
1	Monisha Banerjee, IAS	District Magistrate Collector	Chairperson
2	Sri. Parmar Smit Parshottamdas IPS	Superintendent of Police	Member
3	Sri. Susanta Singh	Hon ^{ble} MLA, Minister Energy, Labour & ESI	Member
4	Sri. Suresh Pujhari	Hon ^{ble} MP, Lok Sabha	Member
5	Sri. Bijaya Ranjan Singh Bariha	Hon ^{ble} MLA, Padampur	Member
6	Sri Debesh Acharya	Hon ^{ble} MLA, Bargarh	Member
7	Smt. Snehangini Chhuria	Hon ^{ble} MLA, Attabira	Member
8	Smt. Manini Bhoi	President, Zilla Parishad	Member
9	Sri Mirdha Toppo , OAS (SAG)	Addl. District Magistrate	Member
10	Sri. Krutibash Rout	Project Director, DRDA	Member
11	Sri. B.Panigrahi	Executive Engineer, Bargarh Canal Division	Member
12	Sri. P.Ratha	Executive Engineer, Barpali Canal Division	Member
13	Sri Suwendu Samal	Sub-Collector, Bargarh	Member
14	Sri Trilochan Patra	Sub-Collector, Padampur	Member
15	Dr. Arun Kumar Patra	Chief District Medical Officer	Member
16	Dr Hemanta Dash	Chief District Veterinary Officer	Member
17	Sri. B.N. Meher	Executive Engineer, R.W.D	Member
18	Sri. Fakir Mohan Sahu	Executive Engineer, RWS&S	Member
19	Mrs. Nirupama Budek	District Emergency Officer	Member Secretary

20	Sri. Surya Narayan Tripathy	Executive Engineer, LI	Member, ex-officio
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(Any other existing committees for Disaster Management at District/ Block/Panchayat and Village level may be incorporated in tables.)

4.12 National Disaster Response Force (NDRF)

The Disaster Management Act 2005 has made the statutory provisions for the constitution of the National Disaster Response Force (NDRF) for the purpose of specialized response to natural and man-made disasters. The NDRF comprises of 12 units of Central Paramilitary Forces (CPMF) that includes 3 units each from Central Reserve Police Forces (CRPF) and Boarder Security Forces (BSF) and 2 Unit each from Central Industrial Security Forces (CISF), Indian Tibbet Boarder Police (ITBP) and Sahastra Seema Bal (SSB). Each battalion has 18 self-contained specialists Search and Rescue teams of 45 personnel. The NDRF team includes Chemical, Biological and Radiological Disaster (CBRN) emergency responders, S&A element, engineers, technicians, electricians, dog squads and paramedics. The NDRF battalions are strategically located at 8 different locations in the country based on the vulnerability profile to cut down response time for their deployment. During the threatening proactive deployment of NDRF is being carried out by NDMA in consultation with the State Governments.

Table-4.3-Location of National Disaster Response Forces

Sl No.	Battalion, Location	State	Man power drawn from	Contact Person	Contact No.
1	01 Bn, NDRF, Guwahati	Assam	BSF		
2	02 Bn, NDRF, Kolkata	West Bengal	BSF		
3	03 Bn, NDRF, Munduli	Odisha	CISF		
4	04 Bn, NDRF, Arakkonam	Tamil Nadu	CISF		
5	05 Bn, NDRF, Pune	Maharashtra	CRPF		
6	06 Bn, NDRF, Gandhinagar	Gujrat	CRPF		
7	07 Bn, NDRF, Ghaziabad	Uttar Pradesh	ITBP		
8	08 Bn, NDRF, Bhatinda	Punjab	ITBP		
9	09, Bn, NDRF, Patna	Bihar	BSF		
10	10 Bn, NDRF, Vijayawada	Andhra Pradesh	CRPF		

11	11Bn, NDRF, Varanasi	Uttar Pradesh	SSB		
12	12 Bn, NDRF, Itanagar	Arunachal Pradesh	SSB		

4.13 Odisha Disaster Rapid Action Force (ODRAF)

The Government of Odisha formed Odisha Disaster Rapid Action Force (ODRAF) vide notification no.939/CD dated 07.06.2001. ODRAF is a multi-disciplinary, multi-skilled, high-tech force for all types of disasters. ODRAF aims at reducing casualties, clearance of communication channels, quick deployment of personnel and equipments and minimize expenditure and time lag and support institutional arrangement. In 3 phases, ten units of ODRAF have been set up. The ODRAF units are strategically located throughout Orissa. Locations of these units are identified on the basis of vulnerability profile to cut down the response time for their deployment. The ODRAF Units do not have any geographical /territorial restrictions in terms of area of operation.

10 new units of ODRAF have been set up at different locations like Sambalur, Boudh, Kalahandi, Nawarangpur, Gajapati, Berhampur, Puri, Khorda, Kendrapada and Jajpur

Table-4.4-Location of Odisha Disaster Rapid Action Force with contact details

Sl. No.	ODRAF Bn.	Raised in the Year	Location (District)	No. of Persons in each BN.	Contact Details (Commandant)
1	OSAP 6th Battalion, Cuttack	2001-2002	Cuttack	49	Phone:0671-2442148 (O), 2442442 (R) Fax: 0671- 2442148 comdt6thbn.odpol@nic.in
2	OSAP 2nd Battalion, Jharsuguda	2001-2002	Jharsuguda	48	Phone: 06645-270096 (O),270038 (R) Fax: 06654 -220370 comdt2ndbn.odpol@nic.in
3	OSAP 3rd Bn. Koraput	2001-2002	Koraput	38	Phone: 06852-251344 (O), 151335(R) Fax: 06852- 251344 comdt3rdbn.odpol@nic.in
4	APR Balasore District	2003-2004	Balasore	41	Phone: 06782-262004 (O), 262005 (R) Fax: 06782 -262584 spbls.odpol@nic.in
5	OSAP 8th Battalion, Chhatrapur	2003-2004	Ganjam	40	Phone: 06811-260375 (O) Fax: 06811 -

					254011 comdt8thbn.odpol@ nic.in
6	APR Jagatsinghpur District	2008-2009	Jagatsinghpur	48	Phone: 06724-220115 (O),220015 (R),Fax: 06724-220370,spjisp.odpol@nic.in
7	OSAP 7th Battalion, Bhubaneswar	2008-2009	Khurdha	44	Phone: 0674-2301055 (O),2303426 (R),Fax: 0674 - 2301055 comdt7thbn.odpol@nic.in
8	OSAP 5th Battalion, Baripada	2008-2009	Mayurbhanj	40	Phone: 06792-278232 (O),254402 (R) Fax: 06792- 278232 comdt5thbn.odpol@nic.in
9	APR Bolangir District	2008-2009	Balangir	43	Phone: 06652-232020 (O) -133063 (R) Fax: 06652-232375 spbgr.odpol@nic.in
10	OSAP 4th Battalion, Rourkela	2008-2009	Sundergarh	46	Pho : 0661 - 2600980 (O),- 2600434 (R) Fax: 0661 - 2600980 comdt4thbn.odpol@nic.in
11	IR Battalion, Boudh	2015-2016	Boudh	47	Phone: 06841-222238 7684872156 (M) 9437232275 (M) comdt5thirbn.odpol@nic.in
12	4th IR Battalion, Deogarh	2015-2016	Deogarh	52	Phone: 0664-3242130 (O),comdt4thirbn.odpol@nic.in
13	OSAP 1st Battalion, Dhenkanal	2015-2016	Dhenkanal	46	Phone: 06762-226229 (O) 06762- 226291 (CR) Fax: 06762-226291 comdt1stbn.odpol@nic.in

14	OSAP 8th Battalion, Chhatrapur	2015-2016	Ganjam	48	Phone: 06811-260375 (O) Fax: 06811- 254011 comdt8thbn.odpol@nic.in
15	3rd IR Battalion, Kalinganagar	2015-2016	Jajpur	49	Phone: 0672-6244602 (O)0672-6244610 (CR) Fax: 0672- 6244610 comdt3rdirbn.odpol@nic.in
16	8th Special IR Battalion, Kandhamal	2015-2016	Kandhamal	43	Phone: 06842-2533017 (O),8763616282 (M) comdt8thsplrbn.odpol@nic.in
17	6th IR Battalion, Khurda	2015-2016	Khurda	50	8895856633 (M) comdt6thirbn.odpol@nic.in
18	1st IR Battalion, Upper Kolab, Koraput	2015-2016	Koraput	43	Phone: 06852-252167 (O) 06852-211320 (CR) comdt1stirbn.odpol@nic.in
19	7th Special IR Battalion, Upper Kolab, Koraput	2015-2016	Koraput	44	Phone: 06852-251067(O): 06852-229007 (CR) comdt7thsplrbn.odpol@nic.in
20	2nd IR Battalion, Rayagada, Gunupur	2015-2016	Rayagada	48	Phone: 0658-725110 (O),Fax: 0685- 725110 (CR),comdt2ndirbn.odpol@nic.in

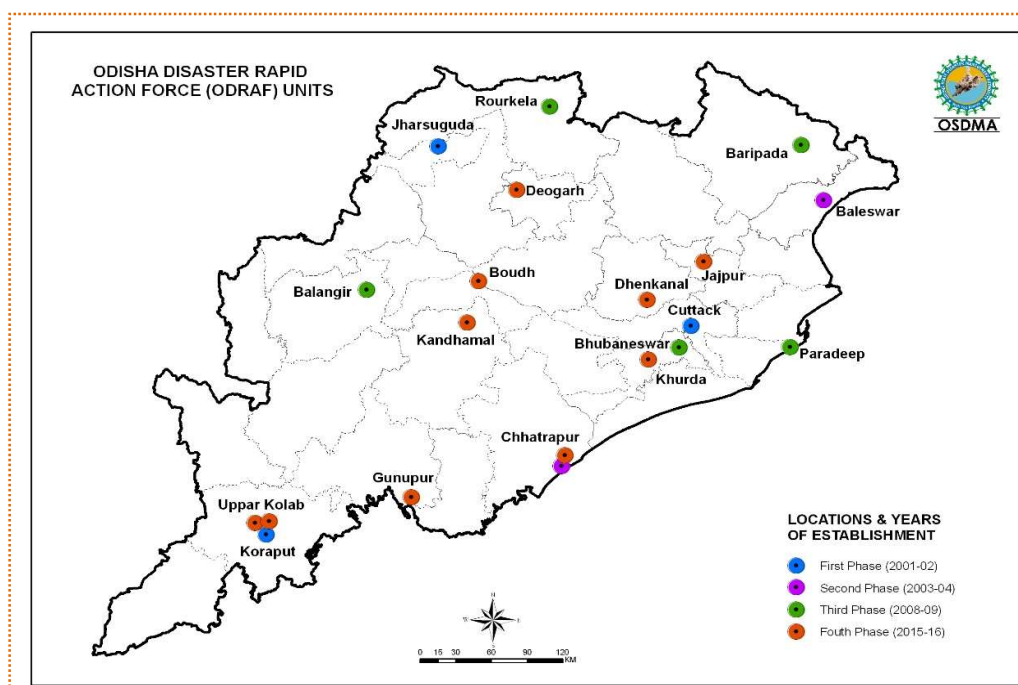


Figure 4.2- Location of ODRAF Un

4.14 Other Disaster Response Teams in the district**Table-4.5-List of other Disaster Response Teams in the District**

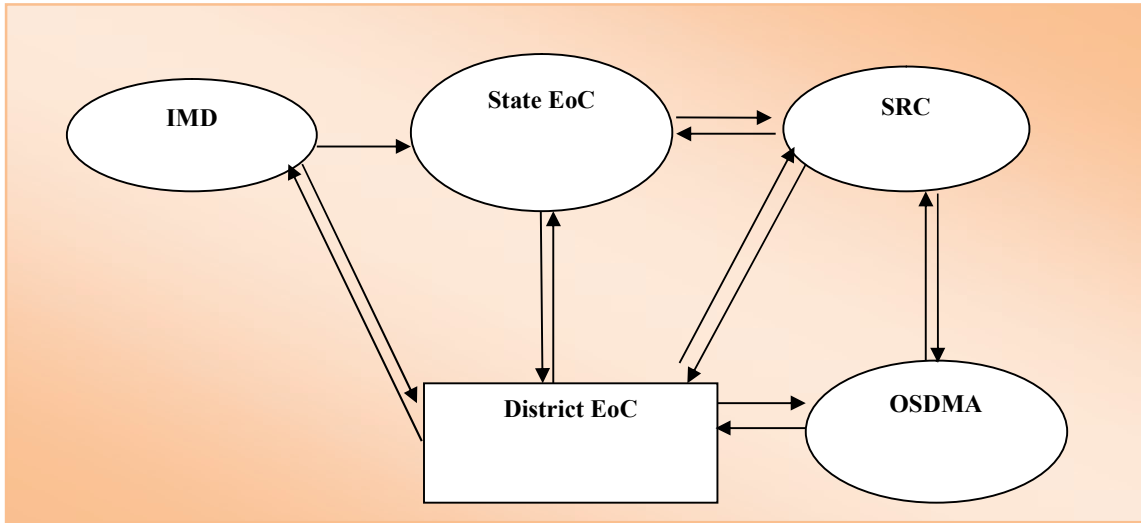
Sl. No.	Name of the Institutions	Name of the Chief Coordinator of the Organization	Designation	Contact Number	Alternate Contact Number	Number of Volunteers
1	Civil Defense					
2	Home Guards	Sri. D. Marandi, R I of Police	Commandant Home Guard	9437977249		344
3	National Service Scheme (NSS)	MS. Babita Sarangi	District Programme Officer	9437257063		2200
4	National Cadet Corps (NCC)	Sri. Amrit Lal Behera	Chief Commandant	7978737723		4540
5	Nehru Yuva Kendra (NYK)	Sri. G. Roshan Tandon	District Youth Officer	8770928068		16562(NYK)/ 10297(Youth Club)
6	Indian Red Cross		Joint Secretary India Red cross Society	06646-232112		60
7	NGOs					
8	VOs					
9.	Aapda Mitra					

4.15 Emergency Communication System

4.15.1 State Emergency Operation Center (SEOC)

The State Emergency Operation Centre has been made operational at Rajiv Bhawan, Bhubaneswar with state of art communication net-work. The State EOC functions round the clock throughout the year. The Organisation is headed by the Special Relief Commissioner (SRC) who exercises all administrative and financial powers. He is assisted by a group of experienced officers and staff. During any natural disaster, the office functions round the clock in an emergency mode. The SEOC is opened throughout the year and round the clock 24x7.

Figure-4.3-Information flow chart from SEOC to Districts



4.15.2 District Emergency Operation Centers (DEOC), of the District to be elaborated)

- **Structure and Function**

Table-4.6-Equipment provided to DEOC and their operational status

SI No.	Equipments	Unit	Status		Remarks
			Operational	Non-Operational	
1	Desktop Computer	3	2 Operational	1 Non-operational	
2	Laser Printer	2	Operational		
3	UPS	2	Operational		
4	Scanner	2	Operational		
5	Television	1		Non-operational	
6	HF Radio Communication System	1	Operational		
7	UHF/ VHF	1		Non-operational	
8	Radio Communication Systems			Non-operational	
9	Satellite phone	1	Operational		
10	VASAT Data /VoIP System	1	Operational		
11	Short Code (1070/1077)	1	Operational		
12	Jeekay SIREN	1	Operational		
13	MICRO Diesel Generator	1	Operational		
14	GALVANIZED IRON TRUNK	1	Operational		
15	Life Buoy	5	Operational		
16	Life Jacket	5	Operational		
17	MS Rack	1	Operational		
18	Inflatable Tower light	2	Operational		
19	45 Kg Fire Extinguisher	2		Non-operational	
20	Power Saw	2	Operational		
21	Gloves Gum boot	2	Operational		
22	Canon power shot	1	Operational		
23	Torch Light	1	Operational		
24	GPS Handset	1	Operational		
25	Polyethylene sheets	634 Rolls	Operational		

Figure-4.4-Information flow chart from District Emergency Operation Center (DEOC) to Villages with early warning

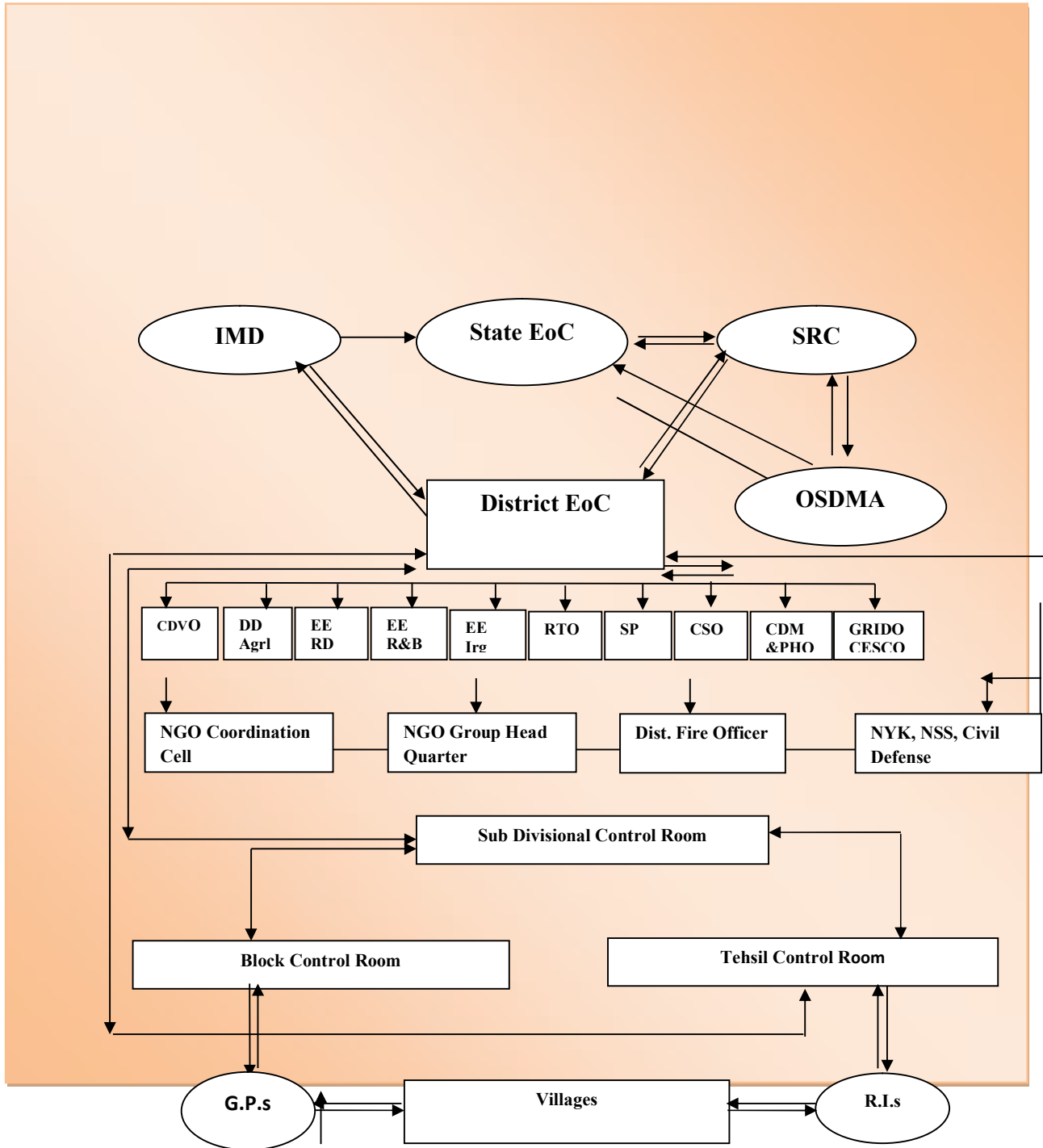


Table-4.7-Important Line Departments at the District.

	Department	Head of the Department at District	Name of the Nodal Officer	Contact No.
1.	Health	CDM&PHO	Dr. Sadhu Charana Dash	9439982249
2	Police	SP	Sri. Parmar Smit Parshottamdas, IPS	9438916490
3	DRDA	PD	Sri Krutibas Rout , OAS (S)	9437333757 8280405039
4	Water Shed	PD	Bhimsen Sethi	9438818708
5	Supply	CSO	Dasarathi Soren	9438200033/9437036316
6	Education	DEO	Mitrabhanu Katchhaba	9437082963
7	DSSO	DSSO	Tahir Husen	9178197979
8	DSWO	DSWO	Tahir Husen I/C	9178197979
9	DIPRO	DIPRO	Smt. Kalyani Das	9437240530
10	Veterinary	CDVO	Dr Hemanta Dash	7978522055
11	Agriculture	CDAO	Santosh Kumar Maharana	9861523495
12	RTO	RTO	Sabua Majhi	7735973701
13	NIC	DIO	Sri Raja Rammohan Majhi	9439643312
14	CS, Bargarh	DRCS	Trupty Kalyan Sethi	8763356911
15	PWD	E E	Sri Biranchi Kumar Mohanty	9437015415
16	PHD	E E	B.D.Mohanty	2412135
17	RD	E E	B.N Meher	9437255306
18	TPWODL	S E	Sri Surendra Hota	9437057387
19	TPWODL	E E	Sri Satyabrata Panda	9437057949
20	LI, Bargarh	E E	Surya Narayan Tripathy	9437554291
21	MI, Padampur	E E	Pradeep Sahu	9437210636
22	RWSS	E E	Fakir Mohan Sahoo	8280408033
23	Fire	A F O	Sushant Biswal	7008612320/9437827131

24	Forest	DFO	Sandeep Pratty	9437494810
25	Fishery	Dist Fishery Officer	Filisita Lakra	9437249849
26	DCPO	DCPO	Manju Ekka	8763345766 7978813292
27	DLO	DLO	Manabhanjan Pradhan	9937689896
28	Horticulture	Asst. Dir, Horticulture	Govinda Ch.Panda	9439973355

Figure-4.5-Information flow chart from Villages to District Emergency Operation Center (DEoC) without early warning

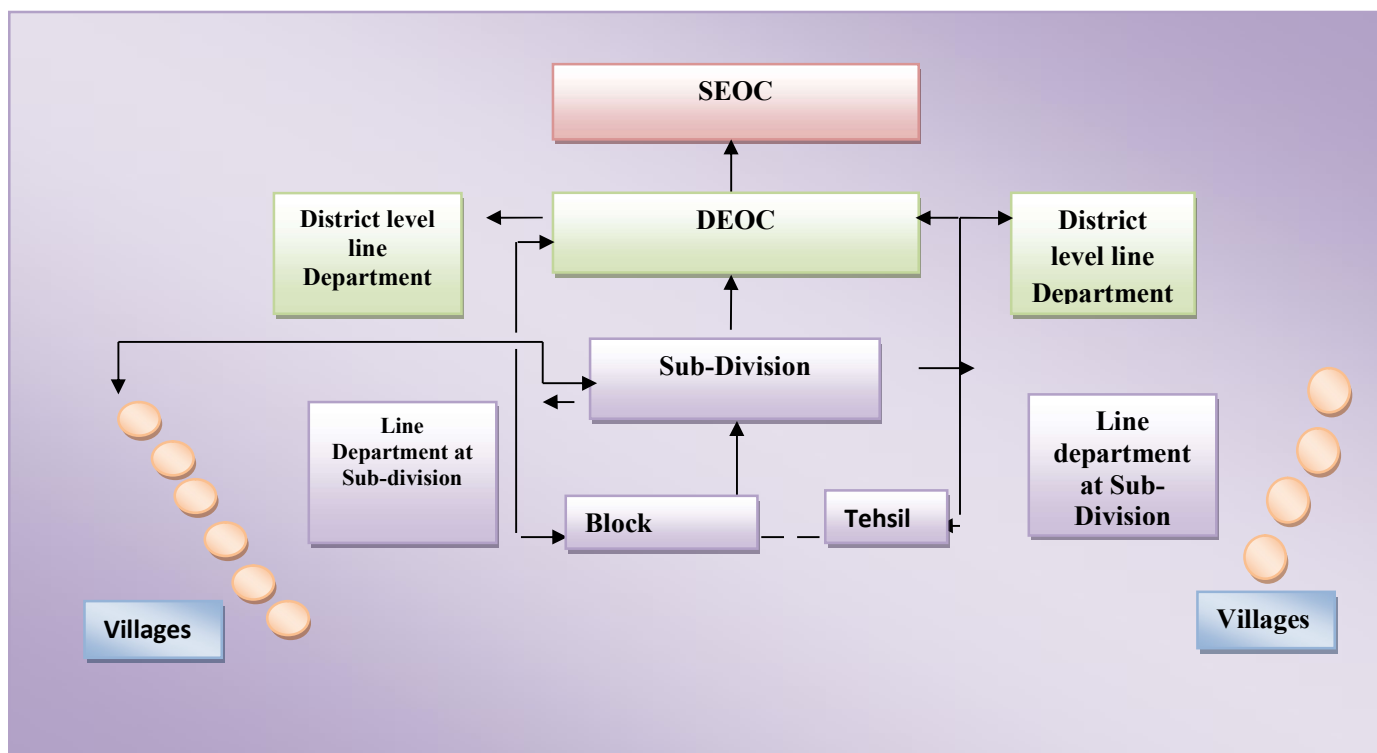


Table-4.8-Important Line Departments at the Block

Sl No.	Department	Head of the Department at Block	Name of the Nodal Officer	Contact No.
1	Health	CHC Bhukta	Dr Temram Dehury Block Public Health Officer	9777174211
2		CHC Attabira	Dr Rabi Narayan Mishra Block Public Health	9437421177

			Officer	
3		CHC Pahadsirgida	Dr Bimal Ku Sethi Block Public Health Officer	7894867103
4		CHC Katapali	Dr Toshabanta Seth Block Public Health Officer	9438538644
5		CHC Barpali	Dr Rajesh Ku Behera Block Public Health Officer	7894492004
6		CHC Agalpur	Dr Krupasindhu Sahu Block Public Health Officer	9437657061
7		CHC Bhatli	Dr Rajesh Ch. Padhi Block Public Health Officer	9439982479
8		CHC Bheden	Dr Susanta Kar Block Public Health Officer	9439536922
9		CHC Bijepur	Dr Sushanta Meher Block Public Health Officer	9777733566
10		CHC Gaisilet	Dr Mahesh Narayan Mishra Block Public Health Officer	8637275710
11		CHC Talpali	Dr Jashobanta Meher Block Public Health Officer	9937323949
12		CHC Dava	Dr Madhumita Meher Block Public Health Officer	6371256124
13		CHC Jamla	Dr Tyagraj Singh Block Public Health Officer	9776204332
14		CHC Bukuramunda	Dr Soumyaranjan Dash	7978620171

			Block Public Health Officer	
15		CHC Sohela	Dr Swastik Sahu Block Public Health Officer	9439982374
16		CHC Bargarh	Dr Radheshyam Agrawal I/C Block Public Health Officer	9437056857
17	BDO	Ambabhona	Anupam Ghosh, OAS	9439400997
18		Attabira	Sri Biswanath Sahu, OAS	9438326634
19		Barpali	Sri Tribikram Kumura OAS	9938581873
20		Bargarh	Sri Judhistir Meher , OAS	9437845185 7978275792
21		Bhatli	Sri Dhirendra Sethi OAS	9438648444
22		Bheden	Sri Raghunath Panigrahi, OAS	7873565755
23		Padampuur	Sankasan Behera , OAS	9437354449
24		Jharbandh	Sunil Kumar Meher ,OAS	7978995820
25		Paikmal	Sri Upanjali Majhi, OAS	7978916394
26		Bijepur	Trupti Majhi, OAS	8895562172
27		Gaisilet	Sri Prabin Ku Banua	6370907913 9437700271

28		Sohela	Sri Biswaranjan Kar,OAS	9437110229
29	BSSO	Ambabhona	Narayana Debta	9178365756
30		Attabira	Bhabani Meher	9583862201
31		Bargarh	Shantanu Panigrahi	9861034231
32		Barpali	Santosh Kumar Nayak	9777341816
33		Bhatli	Tanuja Mahananda	9937386730
34		Bheden	Dayaram Meher	9438073684
35		Bijepur	Pandaba Nanda	9937787899
36		Gaisilet	Rajanikanta Bohidar	7381332450
37		Jharbandh	Tikeswar Patel	9668369836
38		Padampur	Rajanikanta Bohidar	7381332450
39		Bargarh Mun	Ghanashyam Bhoi	9776527720
40		Paikmal	Ramesh Chandra Sethy	9437376803
41		Sohela	Atish Kumar Bhoi	9439569972
42		Attabira NAC	Pradeep Kumar Padhan	8018155745
43		Barpali NAC	Murali Suna	7205370454
44		Padampur NAC	Radheshyam Deep	8596885790
45	CDPO	Attabira	Smt. Anuradha Mohanty	9178355385
46		Barpali	SMT. SANJUKTA LENK	8280298823
47		Bhatli	Smt. Surama	9178355385
48		Bheden	Smt. Alphonsa Tete	9438042941
49		Bijepur	Smt. Swarna Manjari Samal CDPO	9437737620
50		Bargarh (R)	SMT Parbati Sahoo, CDPO	9437739070
51		Bargarh (U)	Smt. Annapurna Kundu	7008140789
52		Gaisilet	Smt. Swarna Manjari	9437737620

			.CDPO I/C	
53		Padampur	Suniti Debta,	9938040101
54		Paikmal	Smt.Kantilata Sahu	9668378738
55		Sohela	Raseswari Sahu,	9937162622
56		Ambabhona	Ahalya Bhue	9938075614
57		Jharbandh	SandhyaraniNepak,	7077593713

4.15.4 Any other Alternative Emergency Operation Center in the district (Note: Structure and function to be elaborated)

4.16 State Crisis Group (SCG)

The State Government has constituted a State Crisis Group for management of chemical accidents as per provision of the chemical accidents (emergency planning, preparedness, and response) rules, 1996 on 1st August 1996.

- a) The State Crisis Group shall meet at least once in three months and follow such procedure for transaction of business as it deems fit.
- b) Notwithstanding anything contained in sub-rule (2), the State Crisis Group may co-opt any person whose assistance or advice is considered useful in performing any of its functions, to participate in the deliberation of any of its meetings.

4.16.1 Composition of the State Crisis Group

The State Crisis Group comprising of the following members in pursuance of the Rule-6 of the chemical accident (Emergency Planning, Preparedness and Response) Rules, 1996.

Table -4.9-Composition of State Crisis Group

Sl No.	Members	Designation
1.	Chief Secretary, Odisha	Chairman
2.	D,C-cum-A.C.S & Chairman, SPCB	Member
3..	Secretary to Government, Labour & ESI Department	Member Secretary
4.	Secretary to Government, Home Department	Member
5.	Secretary to Government, Forest & Environment Department	Member
6.	Secretary to Government, Health & FW Department	Member
7.	Secretary to Government, Industries Department	Member
8.	Secretary to Government, H&UD Department (PH Engineering)	Member
9.	Special Relief Commissioner, Odisha	Member
10.	Secretary to Government, Transport Department	Member
11.	Labour Commissioner	Member
12.	D.G.Police, Odisha	Member

13.	D.G. of Police, Fire Services	Member
14.	Director of Factories and Boilers	Member
15.	Head, NDRF, Odisha, Bhubaneswar	Member
16.	Head, Tata Steel Ltd. Kalinga Nagar	Member
17.	Head (safety), IOCL, Paradeep	Member
18.	Prof. G.K.Roy, Ex-Director and HOD (Chemical Engg.), NIT, Rourkela	Member
19.	Director, RLI, (Directorate General of Factory Advice, Kolkata, GoI	Member
20.	Regional Director, Mines Safety (DGMS, Bhubaneswar, GoI	Member

4.16.2 Functions of the State Crisis Group

The State Crisis Group is the apex body in the State to deal with major chemical accidents and to provide expert guidance for handling major chemical accidents. Without prejudice to the functions specified under sub-rule (1), the State Crisis Group shall,

1. Assist the State Government in managing chemical accidents at a site;
2. Review all district off-site emergency plans in the State with a view to examine its adequacy in accordance with the Manufacture, Storage and Import of Hazardous Chemicals, Rules and forward a report to the Central Crisis Group once in three months;
3. Assist the State Government in the planning, preparedness and mitigation of major chemical accidents at a site in the State;
4. Continuously monitor the post-accident situation arising out of a major chemical accident in the State and forward a report to the Central Crisis group
5. Review the progress report submitted by the District Crisis groups;
6. Respond to queries addressed to it by the District Crisis groups;
7. Publish a list of experts and officials in the State who are concerned with the management of chemical accidents.

4.17 District Crisis Group

As prescribed in the chemical accidents (emergency planning, preparedness, and response) rules, 1996, the District Crisis Group has to be constituted.

The District Crisis Group is the apex body in the district to deal with major chemical accidents and to provide expert guidance for handling chemical accidents. Without prejudice to the functions specified under sub-rule (1). the District Crisis Group shall, -

1. Assist in the preparation of the district off-site emergency plan;
2. Assist the district administration in the management of chemical;
3. Continuously monitor every chemical accident;
4. Review all the on-site emergency plans prepared by the occupier of Major Accident Hazards installation for the preparation of the district off-site emergency plan;
5. Ensure continuous information flow from the district to the Central and State Crisis Group regarding accident situation and mitigation efforts;
6. Forward a report of the chemical accident within fifteen days to the State Crisis Group;

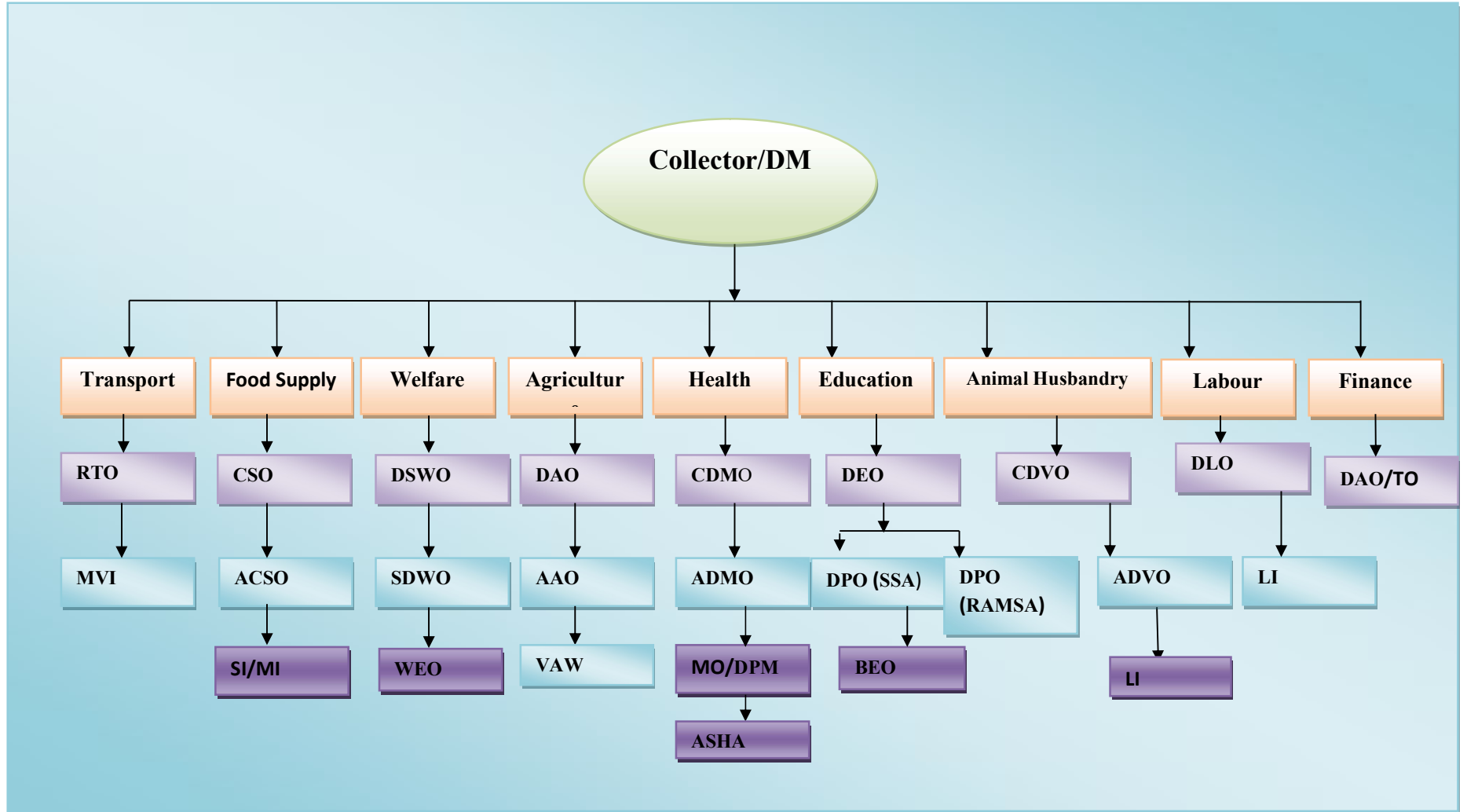
7. Conduct at least one full-scale mock-drill of a chemical accident at a site each year and forward a report of the strength and the weakness of the plan to the State Crisis Group.

4.17.1 Composition of the District Crisis Group

Table-4.10-Composition of District Crisis Group

SI No.	Member	Designation
1	Ms. Monisha Banerjee, IAS	District Magistrate Collector
2	Sri P.K Biswal	Asst Director of factories and Boilers, Bargarh
3	Sri. Sushant Biswal	District Fire Officer, Bargarh
4	Sri Satyabrata Panda	Executive Engineer (Electrical) TPWODL, Bargarh
5	Ms. Nirupama Budek	District Emergency Officer, Bargarh
6	Sri. Parama Smith Purusottam Dash	Dy Superintendent of Police, Bargarh
7		Regional Officer, Population Control Board, Sambalpur
8	Kalyani Dash	District Information & Public Relation Officer, Bargarh
9	Dr Sadhu charana Dash	C.D.M.O, Bargarh
10	Sri Manabhanjan Pradhan	District Labour Officer, Bargarh
11	Sri Sabua Majhi	R.T.O/M.V.I, Bargarh
12	Sri Santosh Kumar Maharana	District Agriculture Officer, Bargarh
13	Ms. Kalpana Majhi	Chairman Municipality, Bargarh
14	Rakesh Kumar Malik	District Project Officer, OSDMA

4.16-Figure 4.6-Coordination structure at the District level and down the line



Abbreviations: (To be placed after content)

- RTO: Regional Transport Officer
- MVI: Motor Vehicle Inspector
- CSO: Civil Supply Officer
- ACSO: Assistance Supply Officer
- SI: Supply Inspector
- MI: Marketing Inspector
- DSWO: District Social Welfare Officer
- SDWO: Sub-divisional Welfare Officer
- DAO: District Agriculture Officer
- AAO: Assistant Agriculture Officer
- VAW: Village Agriculture Worker
- CDMO: Chief District Medical Officer
- ADMO: Additional District Medical Officer
- MO: Medical Officer
- DPM: District Programme Manager
- ASHA: Accredited Social Health Activist
- DEO: District Education Officer
- DPO (SSA): District Programme Officer, Sarva Shiksha Abhiyan
- DPO (RMSA); District Programme Officer, Rashtriya Madhyamik Shiksha Abhiyan
- BEO: Block Education Officer
- CDVO: Chief District Veterinary Officer
- ADVO: Additional District Veterinary Officer
- LI : Life stock Inspector
- DLO: District Labour Officer
- LI: Labour Inspector
- DAO / TO: District Accounts Officer / Treasury Officer

**4.19 (Note: Elaborate on GO-NGO coordination cell in the district, if any)
(1 page)**

4.20 Role of Corporate Sector in the district relating to Disaster Management (1 page)

4.21 Public Private Partnership: Public & Private Emergency service facilities available in the district. (1/2 Page)

(Note: Brief description on Public and Private emergency service facilities in the district may be given)

Table-4.12-Contact Details of Private emergency services

Sl. No.	Name of the Contact Person	Contact No.

4.22 Multi Purpose Cyclone Shelters (MCS) in the district

- a) *(GIS Maps for location of MCS may be incorporated)*
- b) *(Details of Cyclone Shelter Management and Maintenance Committee (CSMMC) may be incorporated)*

Table-4.13-Details of CSMMC

Sl No.	Name of the MCS	Location	Name of President	Contact No.	Name of Secretary	Contact No.

- c) *Equipments provided to the MCS*

Table-4.14-Details of Equipment provided to MCS

Sl No.	Name of the MCS	Location	Equipments Provided	Status		Remarks
				Operational	Non-Operational	

4.23 Flood Shelters (FS) in the District

- a) *(GIS Maps for location of FS may be incorporated)*
- b) *(Details of Flood Shelter Management and Maintenance Committee (FSMMC) may be incorporated)*

Table-4.15-Details of FSMMC

Sl No.	Name of the FS	Location	Name of President	Contact No.	Name of Secretary	Contact No.

- c) *(Equipments provided to the FS)*

Table-4.16-Details of equipment provided to FS

Sl No.	Name of the MCS	Location	Equipment Provided	Status		Remarks
				Operational	Non-Operational	

Chapter – 5

Prevention & Mitigation Measures: -

5.1 Measure to be taken up:

Prevention, Mitigation, and Preparedness is the channel through which fatuous works to decrease a community's vulnerability to natural disasters such as landslides, floods, mudslides, epidemics, and earthquakes, catastrophic rain or snow, and prepares them to respond rapidly and effectively to natural disasters. In this way, the initiative also seeks to ensure that communities are empowered in the learning process. There are a variety of activities in each category, including: building community awareness, the provision of communications equipment (two-way radios), and mitigation projects, such as flood retaining walls.

The disaster management activities attempt to integrate several interrelated components in an orderly and coordinated manner. This includes activities before and pre-disaster, during and after the occurrence of the disaster. There is growing realisation universally to operationalise and formulation of appropriate legal and institutional frame work to deal with the disaster. The different activities involved in the process are:

- a) Reduce the risks associated with disaster through timely measure, short terms and long-term activities.
- b) Provide required assistance to communities during and after disaster.
- c) Ensure repaid, sustained recovery and rehabilitation after the occurrence of disaster.

5.2 Prevention & Preparedness Plan

- Control room at District functions for immediate reporting and during the disaster.
- For prevention of drought different water bodies have been created under MGNREGS.
- For prevention of cyclone, flood and fire, Pucca houses have been allotted to BPL families under IAY & Mo Kudia schemes.
- In Mo Kudia, there is provision for household affected due to Fire, Flood, Riots, and Elephant Menace.
- Under 3rd SFC grant there is a united fund available at GP, PS & ZP level for immediate repair and reconstruction of GP/PS roads and building.
- Under NRLM a number of GPLF has been formed & depending on the demands, CIF ranging from 5-25 lakhs are being provided. The GPLF are in tune are allowed to lend to SHGs to meet the immediate need of social need, consumption & economic activity arising during natural climates.

5.3 Disaster Specific Prevention Plan

Disaster prevention, thus, takes place at two different levels, structural and non- structural.

Non-structural preparedness measures include:

- Administrative and Regulatory Legislation
- Insurance Schemes
- Information, Education and Training
- Community Participation
- Community Action Groups
- Responding to Warning Systems
- Institution Building
- Creation of Public Awareness

Structural Preparedness Measures are proactive and reactive measures. These are used to arrest the adverse impact of disasters. These measures would vary from disaster to disaster.

Earthquake

As per the Sustainable Environment and Ecological Development Society, Earthquake preparedness or vulnerability minimization would focus on:

- Identification of weak structures
- Assessment of houses in earthquake-prone areas that do not comply with building norms
- Monitoring the compliance of renovations with the Building Codes
- Adherence to Building Byelaws and Structural Engineering
- Upgradation of Design Specifications
- Skills for retrofitting and reinforcement of old and weak structures
- Qualified advice to make sure houses are secured to its foundations
- Repair deep plaster cracks in ceilings and foundations. Get advice from experts if there are signs of structural defects
- Use of Seismic Bands at Plinth (Base) and Lintel (Beam) levels
- Secure falling and blocking objects
- Removal of heavy items of furniture to the floor
- Moving of heavy items such as pictures and mirrors away from places where people sit
- Storage of heavy objects, breakable items such as bottled foods, glass etc. in low, closed cabinets with latches
- Storage of chemical products and flammable products in closed cupboards with latches at the bottom shelves
- Development of a Household Emergency Plan (What to do at the time of an earthquake, where to hide, what not to do)

- Elaboration of an evacuation plan for your family
- Identification of safe places within your home, school or workplace
- Procurement of household insurance policy for damage cover
- Preparation of an Emergency Survival Kit
- Emergency telephone numbers (doctor, hospital, police etc.)
- Learning and training others on life saving skills like first aid, search and rescue etc.
- Chalking out plans for helping Public Works Department (PWD) at the time of disaster
- Construction of seismically strong infrastructure

Drought

For drought, preparedness measures would include:

- Practice of alternate cropping techniques, compensatory cropping schemes and crop diversification
- Practice of fodder cultivation
- Use of drought resistant crops
- Provision of grain and water banks
- Resources to rain water harvesting
- Drought proofing schemes like MGNREGS
- Spread of awareness on use of traditional irrigation methods
- Upkeep of storage space
- Maintenance of buffer stocks
- Provision of Emergency Health Centres
- Setting up of Pani Panchayats
- Construction of dams and check dams
- Watershed management
- Levelling and other soil conservation techniques
- Reducing deforestation and fire wood cutting
- Checking of migration and providing alternate employment for people
- Proper selection of crops for drought affected areas
- Promotion of insurance schemes
- Setting up seed banks, water banks and grain banks

Floods:

Some aspects of flood planning and preventive measures to be taken: -

- Strengthening coordination mechanism of different line departments of this district.
- Issuing warnings at the community levels
- Focus on capacity building of local youths on preventive & rescue measures.
- Embankments or clear debris from drainage areas, pile sand bags

- Stock pile needed materials
- Facilitating agricultural recovery
- Planning emergency supplies of flood and clean drinking water
- To conduct trainings on search and rescue for Search and Rescue
- Teams formed at District, Taluka and Village level from time to time.
- There is need for trained full-time fire brigade personnel in each municipality who will help in search and rescue.
- The health department needs to be equipped with more water quality monitoring centers for effective surveillance of water quality during flood events & stock of life saving medicines and snake bite medicines.
- Provision of wireless communication equipment to all tahsil offices so that
- Information about approaching cyclone can be relayed immediately.
- Involving NGOs supports to cooperate in taking preventive measures
- Ensuring the maintenance of Flood shelter centres and readiness of materials before disaster situations.
- Reviewing the Height of the embankment points identified for repair of the vulnerable/affected points

Heat Wave situations

Day by day the Heat wave situations are going to alarming in the District. If preventive measures not taken then the situations will become dangerous. Keeping on view of Heat wave situations & water crisis the following preventive measures taken at District level.

- Conducting Preparatory meeting of DDMA before begging of Heat wave situations to tackle any kind of unforeseen situations.
- Opening of 24 hours Control Room in the Office of District Emergency Operation Centre from 1st April
- Separate Staffs Deployed to monitor complaints / grievances & News Paper Clippings relating to Water Scarcity and Heat wave problems.
- Review on News Paper Clippings on Drinking Water Issues & Heat wave Situation of the District & Asked to Concerned officers / authorities for submission of Action Taken Reports

The positions reviews in GP, Block & District level MIS meetings & instructed to supply water through tankers where necessary.

- Heat wave action Plan of Govt of Odisha circulated to all BDOs & Tahasildars for follow up & reviews.
- Daily Reporting system is being operational from O/O CDMO regarding heat wave situations & treatment of patients.

Preventive Measures by The Line Departments

- To EE RWSS Deogarh for Immediately Repair Non functional Tube wells & non functional Pipe water Schemes of the District.
- To E.E. , TPWODL regarding solve the Electricity problems relating to Pipe water supply & ensure uninterrupted power supply for the Drinking water supply units, School hostels & uninterrupted power supply to people aside the reason of non payment of dues specially in the Heat wave periods.
- Opening of Jalachhatras in public gathering places by the BDOs & EO of ULBs

- Keeping ready of Heat wave beds for Sun stroke patients and stock & supply for life saving medicines and ORS packets till ASHA and AWC level by the CDMO ,Deogarh.
- Instructed to the CDVO , Deogarh for taking necessary arrangement for construction of vats near tube wells and sanitary wells for drinking water of animals.
- Instructed to Fire Officer to keep more alert to address any unforeseen situations during summer
- Instructed to RTO , DEO , DPC SSA , DWO , DSWO , DLO for change of timings of schools , working hours etc & keep ready of sufficient drinking water & ORS packets in public transport services.
- Requested to DIPRO for publicity of Awareness messages of Do & Don't and submission of news in any news papers relating to Water scarcity & heat wave situation for compilation & action taken report at our level.

Fires

- Fires services should be remaining more alert in all the periods and especially in summer & rainy seasons so as reach in time to prevent the severe disaster situations.
- Land line number of all the Fire offices circulated to all the Block & Tahasils for direct contact during emergencies to save time.

5.4 Ways & Means to prevent or reduce the impact of various disasters

5.1 Structural Measures:

Table-5.1

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting Date	Date of Completion	Cost	Funding Sources

5.2 Non-structural Measures

Table-5.2

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting date	Date of completion	Cost	Funding source

5.5 Scope for integrating different schemes for Disaster Risk Reduction (DRR) Activities

Table-5.3

Sl. No.	Schemes	Possible activities for DRR
1	National Health Mission (NHM)	<ul style="list-style-type: none"> ➤ Emergency Medical Response. ➤ Ambulances Service. Mobile Health Facility in Remote Areas.
2	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Rural Road connectivity to remote and unconnected villages.
3	Sarva Shiksha Abhiyan (SSA)	<ul style="list-style-type: none"> ➤ Construction of new disaster resilient school buildings. ➤ Retrofitting in existing school buildings. Disaster preparedness and planning at school.
4	Swachh Bharat Mission (SBM)	<ul style="list-style-type: none"> ➤ For clean and hygienic environment. Protection health.
5	Soil Health Card Scheme	<ul style="list-style-type: none"> ➤ Complete evaluation of the quality of soil. Corrective measures to improve productivity.
6	Pradhan Mantri Ujjwala Yojana (PMUY)	<ul style="list-style-type: none"> ➤ Smoke and pollution free environment. 1. Protection of women health by smoke free cooking.
7	Disease Control Programme	<ul style="list-style-type: none"> ➤ Routine vaccination of livestock and birds to prevent contagious disease.
8	Animal Health Camps	<ul style="list-style-type: none"> ➤ Routine animal health camps to increase the health status and immunity of livestock and birds.
9	Livestock Insurance	<ul style="list-style-type: none"> ➤ To manage the risk and uncertainties by providing protection mechanism to the farmers against any eventual loss of their animals due to death. ➤ To demonstrate the benefit of insurance of livestock to the people.
10	BGREI-STV (Stress Tolerant Variety)	1. Paddy-Sahabhagi.
11	Pradhan Mantri Gram Sinchai Yojana (PMGSY)	<ul style="list-style-type: none"> ➤ Irrigating the field of farmers and improving water use efficiency. 2. Enhance crop per drop by implementing water-saving technologies and precision irrigation.
12	Sansad Adarsh Gram Yojana (SAGY)	<ul style="list-style-type: none"> ➤ Development of model villages. 3. Social, cultural, economic and infrastructure developments in the villages.
13	Janashree Vima Yojna	<ul style="list-style-type: none"> ➤ Insurance protection. 4. Risk transfer.
14	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	<ul style="list-style-type: none"> ➤ Insurance protection. 5. Risk transfer.
15	Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	<ul style="list-style-type: none"> ➤ Insurance protection. 6. Risk transfer.
16	Pradhan Mantri Awas Yojana (PMAY) - Housing for all by 2022	<ul style="list-style-type: none"> ➤ Construct disaster resilient houses. 7. Vulnerable infrastructure risk reduction.
17	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	<ul style="list-style-type: none"> ➤ Construction of roads in remote areas. ➤ Construction of multi-hazard shelters. ➤ Plantation Activities. 8. Permanent Livelihood Activities.

18	Biju Krushak Kalyan Yojana (BKKY)	➤ To provide health security to the farmers and their families. To provide financial support through health and accident insurance.
19	Gopabandhu Gramin Yojana (Bijli,Sadak&Pani)	➤ Road connectivity. ➤ Water supply. 9. Installation of critical infrastructures.
20	Biju Setu Yojana (Rural Bridges)	➤ All weather road connectivity in remote areas. 10. Infrastructure development.
21	Mission Shakti	➤ Institution building. 11. Capacity building for risk reduction.
22	Integrated Child Protection Scheme (ICPS)	➤ To provide a safe and secure environment for overall development of the children. 12. Protection of child rights.
23	Odisha PVTGs Empowerment & Livelihood Improvement Programme (OPELIP)	PVTGs/PTGs Capacity Building. ➤ Institution Building. 13. Livelihood Improvement & Empowerment.
24	Odisha Tribal Empowerment & Livelihood Programme Plus (OTELP Plus)	➤ Livelihood support to tribal and vulnerable community. 1. Creation of durable structures.
25	Pradhan Mantri Fasal Bima Yojana (PMFBY)	➤ Crop insurance. 2. Firming risk coverage in natural calamities.

[Activities/ Projects for (Indicative Only):

- Construction of multipurpose cyclone and flood shelters.
- Removal of hoardings before specified cyclone period
- Trimming of trees and shrubs and removal of damaged and decayed parts of trees close to localities and critical infrastructure
- Public safety norms and constructions in places of worship and mass gathering
- Soil erosion control and riverbank stabilization
- Road and Highway Stabilization
- Bridge abutment stabilization
- Protection of Roads, Culverts and Bridges against flood- grass plantation
- Repair and Maintenance of Embankments against flooding and erosion. Retrofitting of vulnerable spots to prevent embankment breaches
- Cross Drainage Works: - Construction of causeways and culverts sufficient for carrying water more than historical records to prevent flash floods in downstream villages
- Drinking Water:
 - Habitations to be covered under pipe water supply scheme
 - Water supply in scarcity areas in during summer season
 - Raising of hand pumps in flood prone areas
 - Repair/ Replacement of non-functional hand pumps
- Sanitation:
 - Community Mobilization
 - Construction of Toilets
 - Municipal Waste Management
 - Sewerage System in ULBs
- Plantation: River bank plantation, AR, ANR, Hill Slope Plantation, Fodder Plantation, Agro forestry etc.

-
- *Soil conservation works.*
 - *Water harvesting*
 - *Prevention of Road Accidents:*
 - *Putting up of signage in accident prone zones*
 - *Light reflectors*
 - *Diversion boards for roads and bridges*
 - *Repair of potholes & construction of Speed breakers*
 - *Immunization*
 - *Preventive measures against vector borne diseases*
 - *Risk Transfer: Crop insurance/ livestock insurance*
 - *Measures against animal depredation- Trenching/ Fencing*
 - *Awareness generation programmes on disaster prevention and mitigation*
 - *Mainstreaming Disaster Risk Reduction (DRR) in development activities*

Chapter – 6

Climate Change Adaptation: -

6.1 Climate Change Adaptation & Mitigation

Weather and climate are the results of complex interactions Between anthropogenic and natural factors. Evidence of global climate change include higher average temperatures, changes in precipitation, ocean warming, ocean acidification, sea level rise, decreasing sea ice, and changes in physical and biological systems. Observed climate change can be linked with the increase of green house gas concentrations in the atmosphere since the industrial revolution. Global surface temperature change for the end of the 21st century is likely to reach 4°C if no drastic mitigation actions are taken. Various sources of climate data exist that can support planning for climate change.

Greenhouse gases (GHGs) are trace gases in the atmosphere that absorb and emit long wave radiation. They naturally blanket the earth and keep it at about 33° C warmer than it would be without these gases in the atmosphere. The table features the seven most important greenhouse gases as regulated under the Kyoto Protocol. The seven gases each have a different capacity to trap heat in the atmosphere, or a so-called “*global warming potential*” (GWP). They all belong to the group of long-lived greenhouse gases (LLGHGs), because they are chemically stable and persist in the atmosphere over time scales of a decade to centuries or longer, so that their emission has a long-term influence on climate. Some of the GHGs occur naturally (e.g. CO₂, CH₄ and N₂O) but increases in their atmospheric concentrations over the last 250 years are due largely to human activities. Other greenhouse gases are entirely the result of human activities (e.g. HFCs, PFCs, SF₆ and NF₃).

Table: 6.1

Greenhouse Gas	Global Warming Potential (GWP) (over 100 years)	% of Total Anthropogenic GHG Emissions (2010)
Carbon dioxide (CO ₂)	1	76%
Methane (CH ₄)	25	16%
Nitrous oxide (N ₂ O)	298	6%
Hydrofluorocarbons (HFCs)	124-14,800	< 2%
Perfluorocarbons (PFCs)	7,390-12,200	< 2%
Sulphur hexafluoride (SF ₆)	22,800	< 2%
Nitrogen trifluoride (NF ₃)	17,200	< 2%

6.2 Important Greenhouse Gases : Carbon Dioxide (CO₂)

Most important greenhouse gas (contributes ~64% to total radiative forcing by long-lived GHGs). Half of CO₂ emitted by human activities is being absorbed in the biosphere and in the oceans. Rest remains in the atmosphere for hundreds to thousands of years

The most important anthropogenic GHG is carbon dioxide (CO₂). It accounts for around 64% of total radiative forcing due to LLGHGs. Carbon dioxide does not have a specific lifetime because it is continuously cycled between the atmosphere, oceans and land biosphere and its net removal from the

atmosphere involves a range of processes with different time scales. CO₂ is primarily emitted as a result of burning of fossil fuels, deforestation and forest degradation and iron and steel production. Oceans and forests are the main sequesters of carbon i.e. sinks that can absorb CO₂ from the atmosphere. Carbon dioxide is the gas to which all other gases are compared when speaking of Global Warming Potential. Emissions of other greenhouse gases can be converted into *CO₂ equivalent emissions*.

Table: 6.2

Sl No	Name of the Industry/Plant/Firm	Location	Quantity of Co2 emission (PPM)	Ranking as per CO2 Emission (in the district)	Other major pollutants emitted (PPM)	Action taken for cutting down émission

6.3 Important Greenhouse Gases : Methane (CH₄)

Second most significant greenhouse gas (contributes ~18% to total radiative forcing by long-lived GHGs). Approximately 40% of methane is emitted into the atmosphere by natural sources. About 60% comes from human activities & Stays in the atmosphere for approximately 12 years.

The second most significant anthropogenic GHG is methane (CH₄) which contributes to approximately 18% of total radiative forcing due to LLGHGs. Approximately 40% of methane is emitted into the atmosphere by natural sources (e.g. wetlands and termites). About 60% comes from human activities (e.g. cattle breeding, rice agriculture, fossil fuel exploitation, landfills and biomass burning). Methane is mostly removed from the atmosphere by chemical reactions, persisting for about 12 years. Thus, although methane is an important greenhouse gas, its effect is relatively short-lived.

Table: 6.3

Sl No	Name of the Block	Major Sources	Annual emission (In PPM)	Ranking as per CH4 Emission (PPM)	Action taken for cutting down émission

6.4 Important Greenhouse Gases : Nitrous Oxide(N₂O)

The third most significant greenhouse gas (contributes ~6% to total radiative forcing by long-lived GHGs). Stays in the atmosphere for approximately 114 years. Nitrous oxide is emitted into the atmosphere from both natural (about 60%) and anthropogenic sources (approximately 40%).

Nitrous oxide is the third most significant GHG, contributing to about 6% of radiative forcing due to LLGHGs. The primary human sources of N₂O are fertilizer production and use in agriculture and various industrial processes. It is estimated that N₂O stays in the atmosphere for an estimated 114 years. Its impact on climate, over a 100-year period, is 298 times greater than equal emissions of carbon dioxide. It also plays an important role in the destruction of the stratospheric ozone layer which protects us from the harmful ultraviolet rays of the sun.

Table: 6.4

Sl No	Name of the Block	Fertiliser /Industrial processes	Annual Usage (In tonnes)	Ranking as per N ₂ O Emission (PPM)	Other major pollutants emitted (PPM)	Action taken for cutting down émission

6.5 Important Greenhouse Gases : Fluorinated Gases

Global warming effect up to 23,000 times greater than carbon dioxide. Stay in the atmosphere up to 50,000 years. Three main groups: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Mainly developed as substitutes for ozone-depleting substances

Fluorinated gases are a family of man-made gases used in a range of industrial applications. Sources include refrigerants, air-conditioning, solvents, aluminium and magnesium production, etc. Many fluorinated gases have very high global warming potentials (GWPs) relative to other greenhouse gases. That means small atmospheric concentrations can have large effects on global temperatures. They can also have long atmospheric lifetimes, in some cases, lasting thousands of years. Fluorinated gases are removed from the atmosphere only when they are destroyed by sunlight in the far upper atmosphere. In general, fluorinated gases are the most potent and longest lasting type of greenhouse gases emitted by human activities. There are three main categories of fluorinated gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

- Hydrofluorocarbons (HFCs) are the most common group of *F-gases*. They are used in various sectors and applications, such as refrigerants in refrigeration, air-conditioning and heat pump equipment; as blowing agents for foams; as solvents; and in fire extinguishers and aerosol sprays.
- Perfluorocarbons (PFCs) are typically used in the electronics sector (for example for plasma cleaning of silicon wafers) as well as in the cosmetic and pharmaceutical industry. In the past PFCs were also used in fire extinguishers and can still be found in older fire protection systems.
- Sulphur hexafluoride (SF₆) is used mainly as an insulating gas, in high voltage switchgear and in the production of magnesium and aluminium.

Table: 6.5

SI No	Name of the Industry/ Firm/Plant	Location	Annual émission (In PPM)	Ranking as per flourinated gas Emission (PPM)

6.6 Important Green House Gases : Chlorofluoro Carbons (CFCs)

Chlorofluorocarbons (CFCs) an important Green House Gas contribute about 12% to radiative forcing by long-lived GHGs has not been included in the Kyoto Protocol because they are already regulated under the Montreal Protocol on Substances that Deplete the Ozone Layer which entered into force in 1989. The Montreal Protocol includes, for example, chlorofluorocarbons (CFCs) which contribute about 12% to total radiative forcing by LLGHGs. CFCs can stay in the atmosphere for more than 1,000 years. CFCs have a global warming potential (GWP) that ranges between 4,750 and 14,400 (over 100 years' time span). CFCs are used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants.

Table: 6.6

SI No	Name of the Industry/ Firm/Plant	Location	Annual émission (In PPM)	Ranking as per flourinated gas Emission (PPM)	Action taken for cutting down émission

Source: UNFCCC (2009). Fact Sheet: The Need for Mitigation

6.7 Green House Gas Sequestration

In order to prevent dangerous anthropogenic interference with the climate system, actions need to be taken to stabilize greenhouse gas concentrations in the atmosphere. Such actions are referred to as “climate change mitigation”. More specifically, climate Change mitigation involves:

- reducing GHG emissions, e.g. by making older equipment more energy efficient;
- preventing new GHG emissions to be released in the atmosphere, e.g. by avoiding the construction of new emission-intensive factories;
- preserving and enhancing sinks and reservoirs of GHGs, e.g. by protecting natural carbon sinks like forests and oceans, or creating new sinks (“carbon sequestration”).

Major Greenhouse Gases Contributors (Anthropogenic) to Climate Change

Table: 6.7

Greenhouse Gas	Human Source (Examples)	% of Total Global GHG Emissions (2010)
Carbon dioxide (CO ₂)	Fossil fuel combustion, land use changes, cement production, etc	76%
Methane (CH ₄)	Fossil fuel mining/distribution, livestock, rice agriculture, landfills, etc	16%
Nitrous oxide (N ₂ O)	Agriculture (fertilisers) and associated land use change, etc	6%
Hydrofluorocarbons (e.g. HFCs)	Liquid coolants, etc	< 2%
Perfluorocarbons (e.g. PFCs)	Refrigerant, electronics industry and aluminium industry, etc	< 2%
Sulphur hexafluoride (SF ₆)	Insulator in electronics and magnesium industry, etc	< 2%
Nitrogen trifluoride (NF ₃)	Electronics and photovoltaic industries, etc	< 2%

Source: Reproduced from IPCC 2007, UNEP 2012, and FERN

The global community has committed itself to hold warming below 2°C (compared to pre-industrial temperatures) to prevent dangerous climate change. The 2013 IPCC report on the physical science basis of climate change provides a “budget approach” to this goal, looking at total allowable CO₂ emissions level to meet the 2°C target. The report states that in order to have a greater than two in three chance of keeping *global warming* below 2°C, cumulative emissions of CO₂ cannot exceed 1,000 Gigatonnes of carbon (GtC). As of 2011, more than half this amount, or over 500 GtC, has already been emitted since 1861-1880. When the effects of other greenhouse gases are included, even less CO₂ could be emitted to keep below a 2°C warming.

Current annual emission levels are at 9.5 GtC and are likely to grow every year due to population growth and economic development patterns. If annual emissions continue to grow as in past years (“business as usual” scenario) the carbon budget will be exhausted in the next three decades.

Source: IPCC (2013). Climate Change 2013 – The Physical Science Basis, Summary for Policymakers

6.8 Details of forest as a major Carbon sink (District)

Table: 6.8

Reserved Forest / Protected Forest (in Sq. KM)		Revenue / Village Forest (in Sq. KM)	Private owned Forests (in Sq. KM)	Others (If any) (in Sq. KM)	Total (in Sq. KM)
Reserve Forest (RF)	217.3455	Forest on revenue record (DLC)	NIL	NIL	975.49001sq.km
Protected Forest (PF)	0.3268				

Proposed Reerve Forest (PRF)	456.2214	284.16625 sq.km.			
Un-Demarcated Protected Forest (UDPF)	1.3785				
Demarcated Protected Forest (DPF)	0.1943				
VF (Social Forestry Plantation Notified by F.D)	15.85726				
Total	691.32376 Sq.Km	284.16625 sq.km			975.49001 sq.km

6.9 Sectors with High Mitigation Potential

Table : 6.9

SI No	Sectors	Mitigation Options
1	Energy	<ul style="list-style-type: none"> • Use of renewable heat and power (hydropower, solar, wind, geothermal and bio-energy) • Improved supply and distribution efficiency • Carbon capture storage (CCS) • Combined heat and power
2	Transport	<ul style="list-style-type: none"> • More fuel-efficient vehicles • Use of alternative energy sources (biofuels, cleaner diesel, etc.) • Better land-use and transport planning • Shift from individual transport to public transport systems • More efficient driving practices • Non-motorized transport (cycling, walking)
3	Industry	<ul style="list-style-type: none"> • Process-specific technologies that improve efficiency and reduce emissions • Material recycling and substitution • Heat and power recovery/cogeneration • Control of greenhouse gas emissions
4	Agriculture	<ul style="list-style-type: none"> • Manure and livestock management to reduce CH₄ emissions • Improved fertilizer application techniques to reduce N₂O emissions • Improved crop and grazing land management to increase soil carbon storage • Restoration of cultivated peaty soils and degraded lands • Agro-forestry practices
5	Forestry	<ul style="list-style-type: none"> • Reduced deforestation • Afforestation/reforestation • Forest management

Chapter 7

Inclusive Disaster Risk Reduction: -

7.1 Background: A need to include Persons with Disabilities

Different populations may face similar risks of exposure to the negative effects of environmental and man-made disasters, but their actual vulnerability is dependent on their socio-economic conditions, civic and social empowerment, and access to mitigation and relief resources. Individuals with disabilities are disproportionately affected in disaster, emergency, and conflict situations due to inaccessible evacuation, response (including shelters, camps, and food distribution), and recovery efforts.

Besides psychological impact of disasters, this population does not have adequate access to food, water, shelter and health services. There has been inadequate access to their specific needs including assistive devices, rehabilitation and interpreters. Disabled populations face discrimination and exclusion and therefore are confronted with considerable challenges in accessing the same opportunities as the rest of the population in disaster situations.

Common experience reveals that persons with disabilities are more likely to be left behind or abandoned during evacuation in disasters and conflicts due to a lack of preparation and planning, as well as inaccessible facilities and services and transportation systems. Most shelters and refugee camps are not accessible and people with disabilities are many times even turned away from shelters and refugee camps due to a perception that they need “complex medical” services.

Furthermore, the needs of persons with disabilities continue to be excluded over the more long-term recovery and reconstruction efforts, thus missing another opportunity to ensure that cities are accessible and inclusively resilient to future disasters. Thus it is important that the Indian Disaster management system includes the needs of persons with disability faced in disaster risk management.

7.2 Legal framework to support the inclusion of persons with disabilities

The United Nations Convention on the Rights of Persons with Disabilities was adopted in December 2006. The Convention marks a “paradigm shift” in attitudes and approaches to persons with disabilities. Article 11 on Situations of risk and humanitarian emergencies, pays particular attention to the obligation of States parties to undertake “all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters.” Furthermore, Article 4.1, states that “States Parties undertake to ensure and promote the full realization of all human rights and fundamental freedoms for all persons with disabilities without discrimination of any kind on the basis of disability” and Article 32, recognizes the importance of international cooperation to address the limited capacities of some States to respond to situations of risk and humanitarian crises.

The Millennium Development Goals have the potential to make life better for billions of people in the world’s poorest countries. However, disability is currently not included in indicators and targets to help evaluate and monitor the achievement of the MDGs. Furthermore, persons with disabilities are often excluded from international and national poverty reduction strategies. Environmental dangers and natural disasters can lead to the onset of many types of disabilities, and inaccessible environments prevent persons with disabilities from taking part in economic and social activities. Human and environmental recovery is vital for the achievement of MDG Goal 7, “Ensure Environmental

Sustainability”. The MDGs cannot be achieved without the inclusion of all persons in society, including persons with disabilities.

The Rights of persons with Disabilities act (RPWDA) 2016 of India and UNCPRD form the overarching legal framework which identify and protect disability rights in India. The RPWDA mandates the participation of persons with disabilities in the disaster risk management process. In the Act DRM is articulated in the article 8 which stipulates that persons with disabilities shall have equal protection and safety in situations of risk, armed conflict, humanitarian emergencies and natural disasters. The Act refers to the Disaster Management Act 2005 Clause (e) Section 2 for the safety and prevention of persons with disabilities

The District Disaster Management Authorities (DDMA) under Section 25 are specially mentioned to maintain the record of details of persons with disabilities in the district and inform such persons of any such situations of risk so as to enhance disaster preparedness. The authorities are to consult the state Commissioners in accordance with the accessibility requirements of Persons with Disabilities. The rights of Persons with Disabilities Act 2017 elaborate an implementable strategy specifically in accessibility of infrastructure, transport & communication technology which are important aspects in the context of disaster risk reduction

The Government of India approach to disaster management is that development cannot be sustainable unless disaster mitigation is built in to the development process. Built on this approach, the National Disaster Framework covering institutional mechanisms at the national, state & district exist where the disability related structures are also available which could be used to implement inclusive policies

7.3 Responding to the needs of persons with disabilities

Several studies show us that including the needs and voices of persons with disabilities at all stages of the disaster management process, and especially during planning and preparedness, can significantly reduce their vulnerability and increase the effectiveness of Government response and recovery efforts. However, despite an increasing worldwide focus on disaster risk reduction as opposed to mere disaster response, most city and related Government agencies fail to adequately plan for – or include – persons with disabilities in their disaster management activities. This causes severe inequities in access to immediate response, as well as long-term recovery resources for people who have disabilities prior to the disaster and those who acquire a disability as a result of the disaster.

Rehabilitation and reconstruction efforts must not only be inclusive and responsive to the needs of all people, including persons with disabilities, but should include the participation of persons with disabilities, to ensure that their needs and rights are respected. Women with disabilities are a particularly vulnerable group whose needs should be included at all stages of recovery and reconstruction efforts.

Actors involved in Disability inclusive Disaster Risk Reduction (DiDRR) include Government at the different levels, national to local including cities and communities at local level, the UN System, Academic Institutions, Disabled People’s Organizations Private actors, Armed Forces, Civil Society, Media, local community’s Local emergency response organisations.

7.4 Data Collection

Data is essential to understanding the risks that people face during disasters and climate change situations. It is important to give effect to policies and establish norms. The Census in 2011 identifies 2.68 Crore persons with disabilities constituting 2.21% of the country’s population.

7.5 Policy, Institutional Mechanisms and Inclusive Standards

Policies and their implementation need to be inclusive. Odisha State Disaster Management Plans has already laid the foundation of an inclusive strategy. OSDMA has set up a cell for persons with disabilities headed by a person with disability. The cell will look into inclusion in EWS, SER, rehabilitation and resettlement. Impart training for response forces ODRAF, Red Cross, Civil Defense and community level task force volunteers. Monitoring accessibility in shelters will also be work of the cell.

The Odisha State Disaster Management Plan 2017 takes note of the vulnerability of disabled persons and the specific provision provided is related to inclusive education of children with disabilities during disasters. It also makes special mention of children with disabilities and specifically 'mentally retarded' (Intellectual Disability).

For preparation of the inclusive DDMP the following data at district level are to be collected

Table-7.1-Information on PWD

Information on Population Requiring Special Care										
Sl. No.	Block	Gram Panchayat	Village	Total No. of HHs	Total Population	No. of HHs Having by PWD	No. of Persons with Physical Disability (PWD) per village		No of persons with Mental disability	
							M	F	M	F
1	Bargarh	27	62	39689	242335		1762	1625		
2	Attapura	24	81	38480	156452		867	800		
3	Bheden	21	98	31968	127400		781	721		
4	Barpali	23	74	28325	128262		740	684		
5	Bhatli	16	84	21986	90321		475	439		
6	Ambabhona	15	109	15310	65715		242	224		
7	Bijepur	23	103	28663	119201		590	544		
8	Gaisilet	19	103	25034	92899		621	574		
9	Jharaband	14	83	18876	78318		453	418		
10	Padampur	22	150	29474	135651		784	724		
11	Paikmal	22	128	29071	117274		449	414		
12	Sohela	27	129	36695	139254		691	937		
	Total	253	1204	343571	1493082		8548	7890		

Table-7.2-Information on vulnerable women and children

No. of HHs headed by	Child Population per village	No. of Widow per village	No. of Orphans per village
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Women	0-5 Years	6-14 Years		M	F
5367	4553	5098	34189	4	26

Table-7.3-Information on people needing special care (Aged and Pregnant Women)

Information on Population Requiring Special Care								
Sl. No.	Block	Gram Panchayat	Village	Total No. of HHs	Total Population	No. of Aged Persons (60 and above) per village		No. of Pregnant and lactating mothers per village during the information collection
						M	F	
1	Bargarh	27	62	39689	242335	1760	1625	3330
2	Attapura	24	81	38480	156452	867	800	1983
3	Bheden	21	98	31968	127400	781	721	1715
4	Barpali	23	74	28325	128262	740	684	1709
5	Bhatli	16	84	21986	90321	475	439	1224
6	Ambabhona	15	109	15310	65715	242	224	860
7	Bijepur	23	103	28663	119201	590	544	1533
8	Gaisilet	19	103	25034	92899	621	574	1544
9	Jharaband	14	83	18876	78318	453	418	1378
10	Padampur	22	150	29474	135651	877	810	2033
11	Paikmal	22	128	29071	117274	449	414	1985
12	Sohela	27	129	36695	139254	691	637	1813
	Total	253	1204	343571	1493082	8548	7890	21107

After compiling the database of the people who need special attention in the wake of a disaster and to make the district disaster management plan more inclusive, the following may be considered during District Disaster Management Plan preparation.

- **Pre-Disaster:** Identification of special needs of physically challenged and mentally challenged persons. Make necessary Planning for evacuation of people with special needs with special care and compassion. The DDMP should outline adequate training and orientation of field level functionaries who are normally engaged as frontline worriers of disaster management at grass roots. Special responsibility may be entrusted with the appropriate officials at block level to ensure the execution of the plan. The district must ensure that the committees and groups created in the district for the disaster management pursuits **has adequate representation from the vulnerable section of the society** as outlined above.

- **During Disaster:** Appropriate Relocation of the people in the shelter with special care, priority in meeting the needs of such population, organizing medical attention if needed.
- **Post disaster:** Ensuring careful & safe return of such people to home, prioritisation during relief distribution, prioritisation of rehabilitation & reconstruction efforts

Chapter – 8

Safety of Schools and Child Care Institutions: -

Implementation of School Safety Policy Guidelines 2016 (SSP-2016 Guidelines)

8.1 Order on WP(C) 483/2004 of Hon'ble Supreme Court

The Hon'ble Supreme Court vide orders of dated 14.08.2017 in WP (C) 483/2004, directs vide letter no 2437/2004/SC/PIL/(WRIT) dt. 23.08.2017 that the School Safety Policy (SSP) 2016 guidelines issued by NDMA are statutory in nature and shall be implemented in letter and spirit by all concerned authorities for all schools. The direction of the Supreme Court in Implementation of the School Safety Policy Guidelines Inter-alia postulates as follow:

- Time bound implementation of the Guidelines
- District Disaster Management Authority to ensure and monitor compliance of the said Guidelines
- District Education Officer of each District to be a "Nodal officer" with responsibility, liability and obligation as well as powers and functions to ensure strict compliance with the Guidelines within the district of his jurisdiction.
- Joint Monitoring Committee consisting of representations of both Department of School Education & Literacy, Ministry of HRD and NDMA
- Quarterly compliance reports from the Chief Secretary to MHRD and NDMA on the actions taken.

Hon'ble Supreme Court has also defined few actions at different levels to ensure school safety

<u>State & District Level</u>	<u>School Level</u>
<ul style="list-style-type: none"> • Policy for safety audits in all schools • 'Stability certificate' by Government-certified engineer. • Manual for fire safety procedures and other safety precautions • The National Building Code of India, 2005, to construct fire-safe buildings. (Revised 2016) 	<ul style="list-style-type: none"> • Schools must take appropriate safety measures and an emergency response plan that delineates staff responsibilities, communication modes, and training and updating procedures for all members of the faculty, staff and students. • Fire insurance coverage should be made mandatory for all schools. • Ensuring that the kitchen in the precincts of the school has adequate safety mechanisms.

8.2 Guidelines on School Safety Policy, 2016- NDMA

The School Safety encompasses “the creation of safe environments for children starting from their homes to their schools and back.” This as well includes safety from large-scale natural hazards, human made risks, pandemics, violence as well as more frequent and smaller-scale fires, transportation and other related emergencies and environmental threats that can adversely affect the lives of children.

Ref.: *Fire Safety Measures in Schools (Section 3.1 p-23) / Training of School Teachers & Other Staff (Section 3.1 p-25) /School Building Specifications (Section 3.1 p-27) Clearance & Certificates (Section 3.1 p-29) SC. Judgement on WP(C) 483/2004*

Vision:

- The Guidelines stand for a vision of India where all children and their teachers, and other stakeholders in the school community are safe from any kind of preventable risks that may threaten their wellbeing during the pursuit of education.
- Educational continuity is maintained/ resumed even in the immediate aftermath of a disaster so that Children are physically, mentally and emotionally secure within their schools.

Approach and Objectives

- All hazard approaches.
- All schools; all stakeholders 2. Strengthening existing policy provisions to make schools safer
- School Safety as an indicator of quality for continued planning, execution and monitoring
- Primary objective is to ensure the creation of safe learning environment for children.
- Also seek to highlight specific actions towards school safety that can be undertaken by different stakeholders within the existing framework of delivery of education.

Applicability

- The National School Safety Policy Guidelines apply to all schools in the country- whether government, aided or private, irrespective of their location in rural or urban areas.
- They apply to all stakeholders involved in delivery of education to Children in India

All hazard approaches

- School Safety efforts needs to take cognizance of all kinds of hazards that may affect the wellbeing of children.
- Hazards include structural and non-structural factors.
- Structural factors include dilapidated buildings, poorly designed structures, faulty construction, poorly maintained infrastructure, loose building elements, etc.
- Non-Structural factors include loosely placed heavy objects such as almirahs, infestation of the campus by snakes and any other pests, broken or no boundary walls, uneven flooring, blocked evacuation routes, poorly designed and placed furniture that may cause accidents and injury, inadequate sanitation facilities, etc.

Right to Education Act 2009

- The Act sets minimum norms and standards with regard to location and quality of schools and in Clause 19, lays down that no school shall be established, or recognized unless it fulfills the norms and standards specified in the schedule.
- One of the key standards is in relation to access to “all weather buildings”; in “areas with difficult terrain, risk of landslides, floods, lack of roads and in general, danger for young children in the approach...
- the State Government / Local Authority shall locate the school in such a manner as to avoid such dangers”.
- The Act lays down the formation of the School Management Committee for planning of infrastructure and other requirements with respect to operational functioning of schools.
- The School Development Plan, as laid out by the Act, spells out the physical requirements of additional infrastructure and equipment to meet the norms spelt out in the schedule (in relation to all weather buildings).

Key Action Areas**1. Institutional strengthening at the State & District levels**

- Co-opting senior officials of the Department of Education in SDMA and DDMA.
- Nomination of School Safety Focal Point Teacher & Sensitization of School Management Committee on DM.

2. Planning for Safety

- Structural Measures (including siting, design and detailing for structural safety).
- Nonstructural Measures.

- Preparation & implementation of School Disaster Management Plan.
 - Leveraging existing flagship programmes to make school campus safer.
3. **Capacity building for safe schools**
- Training for students and school staff
 - Specialized training and skill building of Education officers, representatives of SCERT and DIET, SDMA, DDMA, etc on school safety
 - Mock Drills
4. **Disaster Management in Core Curriculum**
5. **Regular monitoring of risk and revision of School Safety Plans (including Safety Audits & Availability of Emergency Equipment).**

8.3 Category & type of schools

Table-8.1

Name of the Block	Government Schools				Government Aided schools		Private Schools	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				

8.4 School Safety Advisory Committee (District)

1. Date of Formation
2. Institutional Architecture

Table-8.2

Sl No	Name & Designation	Contact No.	Email ID	Remarks
1	Monisha Banerjee, IAS Collector & Dist. Magistrate	9439779006/ 9937979181	dm-bargarh@nic.in	
2	Parmar Smit Parshottamdas, IPS Supdt. of Police, Bargarh	9438916490	spbgr.orpol@nic.in spbgr.orpol@nic.in	
3	Sushant Biswal Fire Officer, Bargarh	7008612320/ 9437827131	bargarhfirestation1970@gmail.com	
4	Bharat Bhusan Biswal, D.W.O., Bargarh	9439777774	d wobargarh@gmail.com	
5	Tahir Hussain , D.S.W.O, Bargarh	9439448468	dswobargarh@gmail.com	
6	Dr. Sadhu Charana Das, CDMO, Bargarh	9439982249	Cdmo.bargarh@gmail.com	
7	Niruapama Budek, Dist Emergency officer	9937056965	Deocbargarh13@gmail.com	

8	Birendra Kumar Hota, DPO, Bargarh	9437151450/9938629350	dpobargarh@gmail.com	
9	Fakir Mohan Sahu,EE, RWSS, Bargarh	8280408033	eerwss_bgh@nic.in	
10	Manoj Sahu, Principal, DIET, Bargarh	9439885768		
11	Mitrabhanu Katchhaba, DEO, Bargarh	9437082963	Deobargarh03@gmail.com	

8.5 Details of School Safety in the district

Table-8.3

Sl No	Activity	Total School	Achieved				
			Block 1	Block2	Block 3	Block 4	Total
1.	Schools having School Safety Advisory Committee (Number)						
2.	Schools having Scholl Disaster management Plan (Number)						
3.	Schools having conducted Safety Audits (Structural) (Number)						
B.	Safety Audits (Non-Structural) (Number)						
4.	Schools having conducted Annual Mock Drills (Number)						
5.	Schools Having Fire Extinguisher (Number)						
6.	Schools Adhering to safety norms in storing inflammable & Toxic Material (Number)						
7.	Schools confirming safety standards as per local building bye-laws (Latest) (Number)						
8.	Schools having issued Recognition certificate under sub-Rule (4)-Rule 15 of RTE rules 2010 (only to schools that						

	comply with Structural safety norms) (Number)						
9.	Schools where students & teachers undergo regular training on School Safety & Disaster Preparedness (Number)						
10.	Schools where disaster management is being taught as part of the curriculum (Number)						

8.6 Disaster management Education (School Safety and School Disaster Preparedness):

[Disaster management education should include organizing awareness generation programmes in schools and colleges and conducting basic mock drills for fire and other disasters. For the purpose, in the first phase district level high schools and colleges (both govt. and private) may be taken into consideration.]

Table-8.4

Sl. No.	Name of the Programme	No. of Schools, Colleges and Other Educational institutions to be covered during the year	Time Line	Remarks
1.	Awareness generation and mock drills for fire/earth quake etc.			
2.	Preparation of School disaster management plan			

8.7 Details of Child Care Institutions

Table-8.5

Sl No	Block/ ULB	Name and Address of the Organization	Boys	Girls	Total No of Children	Name and Contact no. of the Shift-in-Charge	Fire Safety Equipment (Fire Extinguisher, Alarm)	Staff Training on Fire Safety Equipment	Nearby open space for evacuation	Alternative Shelter/s Identified
1	Paikamal	Kasturba Gandhi Matru Niketan, Specilaized Adoption Centre AT/PO/PS- Paikamal/ Dist- Bargarh	2	5	7	Nirmala Kumar Giri, Contact No- 958355559	Yes 1 No of Fire extingnisher	Yes	Yes	Yes
2	Gaisilet	Gopandhu Sevasadan, Gopalpal ali, Janked, Gaisilat, Bargarh	22	22	44	Keshab Patel Contact No- 9668403824	Yes 3 numbers of fire extinguisher	Yes	Yes	Yes
3	Paikamal	Kasturaba Gandhi Matru Niketan, Paikmal	39	51	90	Nirmala Kumar Giri, Contact No- 958355559	Yes 4 nos of fire extinguisher	Yes	Yes	Yes
		Total	63	78	141					

Chapter- 9

Chemical (Industrial), Nuclear and Radiological Disaster: -

A. Chemical (Industrial) Disaster

The growth of chemical industries has led to an increase in the risk of occurrence of incidents associated with hazardous chemicals (HAZCHEM). A chemical industry that incorporates the best principles of safety, can largely prevent such incidents. Common causes for chemical accidents are deficiencies in safety management systems and human errors, or they may occur as a consequence of natural calamities or sabotage activities. Chemical accidents result in fire, explosion and/or toxic release. The nature of chemical agents and their concentration during exposure ultimately decides the toxicity and damaging effects on living organisms in the form of symptoms and signs like irreversible pain, suffering, and death. Meteorological conditions such as wind speed, wind direction, height of inversion layer, stability class, etc., also play an important role by affecting the dispersion pattern of toxic gas clouds. The Bhopal Gas tragedy of 1984—the worst chemical disaster in history, where over 2000 people died due to the accidental release of the toxic gas Methyl Isocyanate, is still fresh in our memories. Such accidents are significant in terms of injuries, pain, suffering, loss of lives, damage to property and environment. A small accident occurring at the local level may be a prior warning signal for an impending disaster. Chemical disasters, though low in frequency, have the potential to cause significant immediate or long-term damage.

A critical analysis of the lessons learnt from major chemical accidents exhibited various deficiencies. Laxity towards safety measures, no conformation to techno-legal regimes and a low level of public consultation are a few such shortcomings. The scenario called for concerted and sustained efforts for effective risk reduction strategies and capacity development under a national authority to decrease the occurrence of such incidents and lessen their impact. Although tremendous efforts have been made to minimise such accidents and to improve emergency preparedness at all levels, substantial efforts are still required to predict the occurrence of disasters, assess the damage potential, issue warnings, and to take other precautionary measures to mitigate their effects. Another pressing need is to properly assess the potential of chemical emergencies and develop tools for emergency planning and response to minimise the damage in case of any eventuality.

Odisha is also an Industrial State and many Large, Medium and Small-Scale Industries are operating in the state. Many large industries are operating in the districts like Jagatsinghpur, Angul, Jhasrsuguda, Sambalpur and Rayagada and many medium and small industries are operating in other districts of the State. The District administration of the industrial district must be prepared to face any kind of Chemical (Industrial) disasters and always be prepared with the Off-site Emergency Plan of the District. The Off-site emergency plan needs to be updated on regular frequency. Thus, it is highly essentials to take all the preparedness measures and minimize the risk of any Chemical (Industrial) disasters in the industrial districts of the State. The following information are required to be fulfilled and be updated every year in the District Disaster Management Plan of the District

9.1- Factories or Storage Unit Details of the District

Table-9.1

Organisation Name	Type (Large/ Medium /Small/ Micro)	Manufacturing Process & Capacity	Address	Lat/ Long	Site Operator Head Name	Site Operator Head Designation	Site Operator Head Email	Site Operator Head Mobile Number
. ACC Limited	Medium		Cement Nagar, Bardol, Bargarh					
Granular Fertilizer Plant	Medium		At/P.O. Bhatli Road, Bargarh,					
Sri Krishna Solvent Extraction (P) Ltd	Medium		Nagenpali Chowk, Dist. Bargarh.					
The Bargarh Co-op. Sugar Mills Ltd	Medium		At/P.O. Tora, Dist. Bargarh					
Balgopal Food Products (P) Ltd	Medium		Chakarkend, Bargarh.					

. Shree Deoserabali Oil Industries	Medium		Salhepali, Govindpur, Bargarh					
Bargarh Rice Miller Consortium (P) Ltd	Medium		.Govindpur, Bargarh					
Balgopal Food Products (P) Ltd.,	Medium		Chakarkend., Bargarh					
Shri Vaishnodevi Oil Industries	Medium		Chakarkend., Bargarh					
Sri Ram Oil, Dulampur	Medium		Chakarkend., Bargarh					

9. 2 Hazardous Chemical Storage Details

Table-9.2

Hazardous Chemical Storage Points Details											
Organi sation Name	Hazardous Chemicals/ Substances Name	Hazardous Chemicals Type (Flammable/ Reactive/ Explosive/ Toxic)	Hazardous Chemicals Quantity (Volumetric Capacity/ Max Qty can be Stored/ Inventory)	Type of Storage (Under Ground/ Submerged/ On the Ground/ Above Ground)	Type of Container (Spherical /Box Type/Cyli ndrical)	Type of Alignment (Horizontal/ Vertical)	Hazard Anticipated (Fire/Explo sion/ Toxic release)	MSDS (Material Safety Data Sheet) of the Chemicals	Vulnerable Zone in case of Emergency (Radius in Km/Meter)	Do wn wi nd Dis tan ce	Total Num ber of Peopl e in the Vuln erabi lity Zone
								YES / NO			

9.1 Critical Facilities/Infrastructure situated within close proximity of the Factories/Industries or Chemical Storage Points

Table-9.3

Factories/ Industries Name	Critical Facilities (with in Close Proximity) Name	Facility Type (School, AWC Hospitals etc)	Location Address	Lat- Long	Facility in-charge Name	Facility in charge email	Facility in charge mobile number	Total Population in the Close Proximity

9.3 Statutory Compliance of the Factories/Industries

Table-9.4

Statutory Compliance			
Organisation Name	Status of licence under different Acts/Rules	Status of Safety & Health Policy	Safety Management System
	Factories Act, 1948 & Orissa Factories Rules		Status of Stability Certificate wrt plant & buildings
	Consent under Air Act & Water Act from SPCB, Odisha		Constitution of Safety Committee and regular meetings
	NOC from Fire Department		Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001		Safety Report
			Safety Audit
			On Site Emergency Plan
			Risk Assessment Study
			Mock Drills
			Periodical Inspection
			Training & Awareness

9.4 Nearest Hospital Details of the Factories/Industrial Units Table-9.5

Hospital Details

Organisation Name	Nearest Hospitals (Govt/Private) Name	Hospital Address	District Name	City	Pin Code	Lat-long	Chief Medical Officer / Hospital Superintendent Name	Chief Medical Officer / Hospital Superintendent Mobile Number	Chief Medical Officer / Hospital Superintendent Email	Infrastructural Facilities
										ICU
										BURN WARD
										VENTILATOR
										AMBULANCE

9.5 Nearest Fire Station of the Factories/Industries**Table-9.6****Fire Stations Details**

Organisation Name	Area fire station name	Hospital address	District Name	City	Pin code	Lat-long	Fire Officer Name	Fire Officer Designation	Fire Officer Email-id	Fire Officer Mobile Number	Facilities Available
											Fire Tender/Capacity
											Foam Materials
											Hoods

9.7 Stakeholders to be informed in case of an Industrial Accident**Table-9.7**

Designation	Organisation/ Department name	Name	Mobile Number	Office Phone	Email
Nodal Officer, Controlling Officer, Supervising Officer	SRC				
	OSDMA				
	District Administration (Collector, Emergency Officer, ADM)				
	Home department				
	State pollution control board				
	RTO				
	Department of Factories and Boiler				
	CSO				
	NDRF				
	ODRAF				
	NGO				
	FIRE				
	OIL INDUSTRIES (HPCL, BPCL, IOCL)				

Nuclear & Radiological Disaster:

India has traditionally been vulnerable to natural disasters on account of its unique geoclimatic conditions and it has, of late, like all other countries in the world, become equally vulnerable to various man-made disasters. Nuclear and Radiological Emergencies as one such facet of man-made disasters is of relevance and concern to us. Any radiation incident resulting in or having a potential to result in exposure and/or contamination of the workers or the public in excess of the respective permissible limits can lead to a Nuclear/Radiological Emergency

For improving the quality of life in society, India has embarked upon a large programme of using nuclear energy for generation of electricity. As on date, India has 17 power reactors and five research reactors in operation along with six power reactors under construction. It is also planned to explore setting up Thorium based reactors to meet its ever-increasing energy needs. Further, the country utilises radioisotopes in a variety of applications in the non-power sector, viz., in the field of industry, agriculture, medicine, research, etc. Due to the inherent safety culture, the best safety practices and standards followed in these applications and effective regulation by the Atomic Energy Regulatory Board, the radiation dose to which the persons working in nuclear/radiation facilities are exposed to, is well within the permissible limits and the risk of its impact on the public domain is very low.

However, nuclear emergencies can still arise due to factors beyond the control of the operating agencies; e.g., human error, system failure, sabotage, earthquake, cyclone, flood, etc. Such failures, even though of very low probability, may lead to an on-site or off-site emergency. To combat this, proper emergency preparedness plans must be in place so that there is minimum avoidable loss of life, livelihood, property and impact on the environment.

Although, the State of Odisha does not have any major Nuclear/Radiological set up or power plants, still the Districts need to be prepared in case of any Emergencies especially Medical Preparedness and Capacity Building of the Response Forces. Mock Exercises on Nuclear and Radiological Disasters or Emergencies at regular intervals is also highly essential. Districts are required to keep and updated the following information given in the table ever year for minimizing the risk of Nuclear/Radiological Disaster.

9.8 Hospital Preparedness

Table-9.7

Sl No .	Name of the Hospital	No. of Decontamination Room	Radioactive Bio-Waste Disposal Facilities	No. of Medical Staffs Trained on Radiation Injury Management	Stocks of essential medicines	Data base of the Trained Medical Staffs being maintained	Name, Designation and Contact Details of the Nodal Officer

9.9 Specialized Response Forces**Table-9.8**

Sl No.	Name of the Response Forces	No. of Personnel trained on CBRN	No. of Personnel trained on MFR	Name and Designation of the Command in Charge	Contact No. of the Command in Charge

9.10 Mock Exercises on Nuclear/Radiological Disaster**Table-9.9**

Sl No.	During	Stakeholders to be Involved	Process to be followed	Details of the Nodal Officers for the ME

Chapter-10

Biological Disaster and Public Health in Emergencies: -

10.1 Biological Disaster Management & Medical Preparedness

Biological disasters, be they natural or man-made, can be prevented or mitigated by proper planning and preparedness. The primary responsibility of managing biological disasters vests with the state government. The central government would support the state in terms of guidance, technical expertise, and with human and material logistic support to develop the policies, plans and guidelines for managing biological disasters in accordance with the national guidelines and those laid down by SDMAs.

The H&FW would be the nodal Department for managing biological disasters in the State. Further, Home department will be the nodal for Bio-terrorism, Bio War, F&ARD Department will be the nodal department for animal health and Agriculture & Farmers Empowerment Department will be the nodal department for agro-terrorism. Besides, the community, medical care, public health and veterinary professionals, etc., must also remain in complete preparedness for such eventualities.

Table 10.1 Nodal Departments for Managing Biological Disaster

Sl No.	Bio Disaster	Nodal Department	Contact person	Contact details (Office/Mobile)
1	Biological Disaster	H&FW Department	CDMO (District)	9439982249
2	Bio Terrorism/War	Home Department	SP	9438916490
3	Animal Health Disaster	F&ARD Department	CDVO (District)	7978522055
4	Agro - Terrorism	A&FE Department	DAO	9861523495

10.2 Legal Framework

Stringent Legal frameworks must be drawn & enforced in order to:

- Prevention, mitigation and control of the spread of biological disaster at all level.
- Managing the prevailing and foreseeable public health concerns, threat of biological weapons by adversaries and cross-border issues.
- Notify the affected area, restrict movements or quarantine the affected area, enter any premises to take samples of suspected materials and seal them.
- Establish controls over biological sample transfer, biosecurity and biosafety of materials/laboratories.

10.3 Institutional & Operational Framework

SDMA will coordinate all the disasters including those of biological origin in the state. A multi-sectoral approach must be adopted involving H&FW, Home Department, PR&DW, SSEPD, F&ARD and A&FE.

- The intelligence and deterrence required & the management structure must be identified and strengthened so as to act as one crisis management structure, committees, task forces and technical expert groups preferably within the Nodal department

Table 10.2- Crisis Management Committee

SL	Member	Dept./Instt.	Contact Details

Table 10.3 Task Force

SL	Member	Dept./Instt.	Contact Details

Table 10.4 Technical Experts

SL	Member	Dept./Instt.	Contact Details

- A public health institution of eminence, matching international standards needs to be created, with following measures:
 - All existing public health institutions providing technical expertise in the area of field epidemiology, surveillance, teaching, training, research, etc., need to be strengthened. The core capacity needs to be developed for surveillance, border control at ports and airports, quarantine facilities, etc.
 - Each District will strengthen its public health infrastructure, including public health institutions which would collect epidemiological intelligence, share information with IDSP, provide for outbreak investigations and manage outbreaks.
 - Hospitals will develop capabilities to attend to mass casualties and public health emergencies with isolation facilities. In the districts, DDMA's will provide the requisite management structure for district DM, factoring in the requirements for managing biological disasters.
- The strategic approach for management of biological disasters must be done with responsible participation of the government, private sector, NGOs and civil society.

10.5 Nodal Public Health Institution

Name of the Institution, Address & Contact details of the contact (Nodal) Person	No. of trained Doctors (Biological Disaster)	No. of trained Paramedical staffs (Biological Disaster)	Facilities available	Equipment's available

10.6 Collaborative Institutions

Name of the NGO/CSO/ Private Sector	Expertise	Contact Person	Contact Details (Number & Email ID)	Address

10.4 Preventive Measures

Prevention and preparedness shall focus on the assessment of bio-threats, medical and public health consequences, medical countermeasures and long-term strategies for mitigation. The important components of prevention and preparedness would include

- An epidemiological intelligence gathering mechanism to deter a BW/ BT attack;
- A robust surveillance system that can detect early warning signs, decipher the epidemiological clues to determine whether it is an intentional attack;

- Capacity building for surveillance, laboratories, and hospital systems that can support outbreak detection, investigation and management.
- Developing a biological disaster response plan
- Pre-exposure immunisation (preventive, if available any) of first responders against anthrax and smallpox must be done to enable them to help victims' post-exposure.

10.4.1 Pre-Disaster Preventive Measures

- Important buildings and those housing vital installations need to be protected against biological agents wherever deemed necessary through security surveillance.
- Restricting the entry to authorised personnel only by proper screening,
- Installation of High Efficiency Particulate Air (HEPA) filters in the ventilation systems to prevent infectious microbes from entering the circulating air inside critical buildings.
- Those exposed to biological agents may not come to know of it till symptoms manifest because of the varied incubation period of these agents. A high index of suspicion and awareness among the community and health professionals will help in the early detection of diseases.
- Environmental monitoring can help substantially in preventing these outbreaks.
 - Water Supply: A regular survey of all water resources, especially drinking water systems, & proper maintenance of water supply and sewage pipeline will go a long way in the prevention of biological disasters and epidemics of waterborne origin.
 - Personal hygiene: Necessary awareness must be created in the community about the importance of personal hygiene, and measures to achieve this, including provision of washing, cleaning and bathing facilities, and avoiding overcrowding in sleeping quarters, etc. Other activities include making temporary latrines, developing solid waste collection and disposal facilities, and health education.
 - Environmental engineering work and generic integrated vector control measures including.
 - Elimination of breeding places by water management, draining of stagnant pools and not allowing water to collect by overturning receptacles, etc.
 - Biological vector control measures e.g. Gambusia fish, as an important measure in vector control.
 - Outdoor fogging and control of vectors by regular spraying of insecticides.

Table 10.7 Important/Critical Infrastructure

Sl	Infrastructure/ Institution Type	Dept./Instt.	Contact person with contact Details

10.4.2 Post-Disaster Preventive Measures

- When exposure is suspected, the affected persons shall be quarantined and put under observation for any atypical or typical signs and symptoms appearing during the period of observation.
- Health professionals who are associated with such investigations will have adequate protection and adopt recognised universal precautions.
- It often may not be possible to evolve an EWS. However, sensitisation and awareness will ensure early detection.
- Dead bodies resulting from biological disasters increase risk of infection if not disposed off properly. Burial of a large number of dead bodies may cause water contamination. With due consideration to the social, ethnic and religious issues involved, utmost care will be exercised in the disposal of dead bodies.

10.8 Infrastructure that can be used as quarantine centres

Sl	Infrastructure/	Dept./Instt.	Contact person with
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	Institution Type		contact Details

10.5 Disease Containment by Isolation and Quarantine Methodologies:

- Isolation refers to isolating suspected cases in hospital settings. In the case of biological disasters such as pandemic influenza which affects millions, home isolation may have to be recommended to those who can be treated at home.
- Quarantine refers to not only restricting the movements of exposed persons but also the healthy population beyond a defined geographical area or unit/institution (airport and maritime quarantine) for a period in excess of the incubation period of the disease.
- Restrictions in the movement of the affected population is an important method to contain communicable diseases. The status of the law-and-order mechanism of the state and district is an important factor in helping health authorities in this regard.

10.6 Preparedness and Capacity Development

An important aspect of medical preparedness in Biological Disaster Management includes the integration of both government and private sectors. The important components of preparedness include planning, capacity building, well-rehearsed hospital DM plans, training of doctors and paramedics, and upgradation of medical infrastructure at various levels to reduce morbidity and mortality. A biological disaster response plan is to be evolved on the basis of the national guidelines with due participation of health officials, doctors, various private and government hospitals, and the public at the national, state and district levels. The government health departments also need to be equipped with state-of-the-art tools for rapid epidemiological investigation and control of any act of biological threat. The important components of preparedness are.

10.6.1 Establishment of Command, Control and Coordination Functions

The incident command system needs to be encouraged and instituted so that the overall action is brought under the ambit of an incident commander who will be supported by logistics, finance, and technical teams etc. EOCs will be established in all the state health departments with an identified nodal person as Director (Emergency Medical Relief) for coordinating a well-orchestrated response.

- Human Resource Development: The DHO, in consultation with the state epidemiological cell, will develop a simple & informative format for daily data collection, depending upon quantum of information available at each level.
- Control rooms will be nominated/ established at different levels in order to get all the relevant information and transmit it to the concerned official. The addresses and telephone numbers of the district collector, DHO, hospitals, specialists from various medical disciplines like paediatrics, anaesthesia, microbiology etc., and a list of all stakeholders from the private sector will be available in the control room.
- Manning the health Facilities: The shortfall of public health specialists, epidemiologists, clinical microbiologists and virologists will be fulfilled over a stipulated period of time. Teaching/training institutions for these purposes will be established.

10.7 Training & Education

- Necessary training /refresher training must be provided to medical officers, nurses, emergency medical technicians, paramedics, drivers of ambulances, and QRMTs/MFRs to handle disasters due to natural epidemics/ Bio disaster.
- Structured education and web-based training must be given for greater awareness and networking of knowledge so that they are able to detect early warning signs and report the same to the authorities, treat unusual illnesses, and undertake public health measures in time to contain an epidemic in its early stage.
- Refresher training will be conducted for all stakeholders at regular intervals. An adequate number of specialists will be made available at various levels for the

management of cases resulting from an outbreak of any epidemic or due to a biological disaster.

- Standardised training modules for different medical responders /community members for capacity building in the area of disaster management developed by state government or national government should be followed to create adequate training facilities for the same.
- Selected hospitals will develop training modules and standard clinical protocols for specialised care, and will execute these programmes for other hospitals. Table-top exercises using different simulations will be used for training at different levels followed by full-scale mock drills twice a year.
- A district-wise resource list of all the laboratories and handlers who are working on various types of pathogenic organisms and toxins will be prepared.
- BDM related topics will be covered in the various continuing medical education programmes and workshops of educational institutions in the form of symposia, exhibition/demonstrations, medical preparedness weeks, etc.
- Biological disaster related education shall be given in various vernacular languages. Simple exercise models for creating awareness will also be formulated at the district level.
- Biological disaster plans will be rehearsed as a part of training every six months.
- Knowledge of infectious diseases, epidemics and BT activities will be incorporated in the school syllabi and also at the undergraduate level in medical and veterinary colleges.

10.8 Community Preparedness

Community members including public and private health practitioners are usually the first responders, though they are not so effective due to their limited knowledge of BDM. These people will be sensitised regarding the threat and impact of potential biological disasters through public awareness and media campaigns. The areas which need to be emphasised are:

- **Risk communication to the community**
 - Community education/awareness about various disasters and development of Dos and Don'ts.
 - The public will be made aware of the basic need for safe food, water and sanitation. They will also be educated about the importance of washing hands, and basic hygiene and cleanliness. The community will also be given basic information about the approach that health care providers will adopt during biological disasters.
 - Toll-free numbers and a reward system for providing vital information about any oncoming Biological disaster by an early responder or the public will be helpful.
 - Definition of predisposing existing factors, endemicity of diseases, various morbidity and mortality
 - indices. The availability of such data will help in planning and executing response plans.
- **Community participation**
 - Providing support to public health services, preventive measures such as chlorination of water for controlling the possibility of epidemics, sanitation of the area, disposal of the dead, and simple non-pharmacological interventions will be mediated through various resident welfare associations, ASHA /ANM, village sanitation committees, and PRIs.
 - Community level social workers who can help in rebuilding efforts, create counselling groups, define more vulnerable groups, take care of cultural and religious sensitivities, and also act as informers to local medical authorities during a biological disaster phase, will be created after proper training and education.
 - NGOs and Voluntary Organisations (VOs) will be involved in educating and sensitising the community.

- Supporting activities like street shows, dramas, posters, distribution of reading material, school exhibitions, electronic media, and publicity, etc., will be undertaken.

A legally mandated quarantine in a geographic area, isolation in hospitals, home quarantine of contacts, and isolation management of less severe cases at homes would only be possible with active community participation.

10.9 Medical Preparedness

Medical preparedness will be based on the assessment of bio-threat and the capabilities to handle, detect and characterise the microorganism. Specific preparedness will include pre-immunisation of hospital staff and first responders who may come in contact with those exposed to anthrax, smallpox or other agents. It further relates to activities for management of diseases caused by biological agents, EMR, quick evacuation of casualties, well-rehearsed hospital DM plans, training of doctors and paramedics and upgradation of medical infrastructure at various levels which will reduce morbidity and mortality. Medical preparedness will also entail specialised facilities including chains of laboratories supported by skilled human resource for collection and dispatch of samples. The major aspects of medical preparedness are e.g. Hospital DM Plan

Hospital planning will include both internal hospital planning, and for hospitals being part of the regional plan for managing casualties due to biological disasters. The major features will include the following:

- Hospital disaster planning will consider the possibility & needs to evacuate or quarantine or divert patients to other facilities.
- The plan will be ‘all hazard’, simple to read and understand, easily adaptable with normal medical practices and flexible enough to tackle different levels and types of disasters.
- The plan will include capacity development, development of infrastructure over a period of time and be able to identify resources for expansion of beds during a crisis.
- The plan will be based on the need assessment analysis of mass casualty incidents. There will be a triage area and emergency treatment facilities for at least 50 patients and critical care management facilities for at least 10 patients.
- The quality of medical treatment of serious/ critical patients will not be compromised. The development plan will aim at the survival and recuperation of as many patients as possible.
- Hospitals will plan to recruit a sufficient number of personnel, including doctors and paramedical staff, to meet the patients’ needs for emergency care.
- It is essential that all hospital DM plans have the command structure clearly defined, which can be extrapolated to a disaster scenario, with clear-cut job definitions when an alert is sounded. Emergency services provided must be integrated with other departments of the hospital.
- The hospitals will submit data on their capabilities to the district authorities and on the basis of the data analysis, the surge capacities will be decided by the district administration.
- There is no universal hospital DM plan which can be implemented by all hospitals in all situations. Therefore, on the basis of their specific considerations, each hospital will develop a disaster plan specific to itself. The plan shall be available with the district administration and tested twice a year by mock drills.
- The hospital DM plan will cater to the increased requirement of beds, ambulances, medical officers, paramedics and mobile medical teams during a disaster. The additional requirement of disease related medical equipment, disaster-related stockpiling and inventory of emergency medicines will also be factored into the hospital DM plan. The DM plan must be strengthened by associating the private medical sector.

- Networking between public and private hospitals must be done and hospital DM plans need to be updated at the district/state level through frequent mock drills.
- The registration and accreditation policy must make it mandatory to have a hospital DM plan.
- The existing infectious diseases hospitals will be remodelled to manage diseases with microorganisms that require a high degree of biosafety, security and infection control practices. There will be one such hospital in each state capital. In addition, the district hospitals and medical colleges will have isolation wards to manage such patients. Also, identified hospitals in vulnerable states will be strengthened for managing CBRN disaster victims by putting in place decontamination systems, critical care Intensive Care Units (ICUs) and isolation wards with pressure control and lamellar flow systems. The infectious control practices will include the following:
 - When dealing with biological emergencies, the health workers associated with the investigation of such exposures will have adequate personal protection.
 - Depending upon the risk, the level of protection will be scaled up from use of surgical masks and gloves, to impermeable gowns, N-95 masks or powered air-purifying respirators. They will follow laid down SOPs for use of PPE.
 - Infection control practices will be followed at all health care facilities, including laboratories.
 - Of the potential biological disaster agents, only plague, smallpox and VHFs are spread readily from person to person by aerosols and require more than standard infection control precautions (gowns, masks with eye shields, and gloves).
 - The suspected victims and those who have been in contact with them will be advised to follow simple public health measures such as using masks/handkerchief tied over the nose and mouth, frequent washing of hands, staying away from other people by at least a metre, etc.
- To handle biological disasters, a hospital DM plan will have the following facilities:
 - Medical and paramedical staff: It is important to train medical staff and paramedics properly in universal safety precautions, use of PPE, communication, triage, barrier nursing, and collection and dispatch of biological samples. A team of specialists must be made available to handle infectious diseases affecting various body systems and they will be suitably immunised against agents such as anthrax and smallpox.
 - Expansion of casualty area: If the hospital casualty ward is unable to accommodate a large number of casualties, provision will be made to use the patients' waiting hall, duly reoriented, to receive the casualties. Each major hospital will cater to at least 50 additional patients at times of disaster.
 - Isolation wards: Adequate number of isolation wards are required to be planned with surge capacity to accommodate a large number of patients of infective disease. If required, side rooms, seminar rooms, other halls can be improvised for this purpose.
 - Security arrangements: Hospital security staff will prepare SOPs to prevent overcrowding of hospitals by visitors, relatives, VIPs, and the media at the time of a disaster. Help of the district administration will be sought, if required.
 - Identification of patients: The process will start at the time of giving first aid and triage. A system of labelling and identifying patients during spot registration by giving a serial number to the patient and putting an identification tag around the wrist can be done. In mass casualties, it can be supplemented by giving colour coded tags, such as red for serious patients, yellow for moderately serious patients, blue for those in need of observation and black for the dead.
 - Brought dead: All those brought in dead and patients who die while receiving resuscitation will be segregated and shifted to the mortuary through a separate

route. Temporary mortuary facilities will be created to cater for a mass casualty incidence.

- Diagnostic services: All laboratories and radio diagnostic services will be kept fully operational and utilised as and when required. These services will be available within the emergency treatment areas.
- Communication: Both intra & inter communication facilities will be made available. These can be further augmented by the use of mobile phones.
- Medical supplies: Adequate supply of essential drugs and non-drug items will be made available for at least 50 patients in the emergency complex itself for immediate use. Additionally, hospital medical stores will have adequate buffer stocks.
- Blood bank services: The services will cater for an adequate supply of safe blood and its components. Voluntary blood donations will be encouraged to fulfil the increased demand of blood.
- Other logistic support: Adequate, uninterrupted supply of water and electricity will be ensured for proper management of casualties. The laying down of public health standards for hospitals and strengthening of CHCs across the nation for basic specialities on 24x7 basis under NRHM by GoI are steps in the right direction to strengthen medical care facilities in rural areas. NRHM initiatives will be expedited to reach every nook and corner of the country.

Table 10.9

Sl	Facility	Unit	Existing Capacity	Extension Capacity	Remarks
1	Medical Staff				
2	Paramedical Staff				
3	Specialists				
4	Technical experts				
5	Casualty Section				
6	Isolation wards				
7	Security arrangement				
8	Diagnostics Services				
9	Medical Supplies				
10	Blood Bank Services				
11	Mortuary				
12	Other logistics				

- **Mobile Hospitals and Mobile Teams**

States will acquire and locate at least one mobile hospital at strategic locations. These hospitals can be attached to earmarked hospitals for their use in non-disaster periods. These will be manned by trained manpower and perform the following functions:

- To be mobilised to the disaster site for management of cases at times of any epidemic outbreak or biological disaster.
- Provide on-site medical treatment to casualties as per triage and evacuation guidelines. The teams will also make a complete assessment of the situation and transmit information to the appropriate authorities.

- Additional medical teams will be mobilised to assist in handling the large number of casualties in the wake of a mass casualty event.
- Adequate stock of medical stores, including essential drugs, will be stocked and made available to the medical teams.
- The stocking of emergency medical stores shall be done by the state government. Brick of medical stocks capable of treating 25/50/100 casualties will be kept ready to move with mobile units at short notice.
- Drills will be conducted at regular intervals by mobile hospitals and mobile teams to keep them in a functional mode at all times.

Table 10.10 Mobile Hospitals & Health Teams

Sl	Mobile Hospitals & Health Teams	Nodal Person	Contact Details

- **Stockpile of Antibiotics and Vaccines**

- Government medical stores will stock sufficient quantities of essential drugs, antibiotics and vaccines based on the risk assessment. State and local public health authorities have to develop plans for distributing and administering these materials. There is a need to have a supply of readily available anthrax, smallpox and other vaccines, which will be administered rapidly in the event of an outbreak to contain the spread of the disease. All first responders will be vaccinated in an impending disaster situation.
- A plan will be prepared to define the availability of antibiotics, anti-virals, vaccines, sera and other drugs from private pharmaceutical companies who will be able to supply these items at short notice.

Table-10.11-Stockpile of Medicines

Sl	Medicine/Drugs	Actual Requirement	Present availability

- **Public Health Issues**

- Panic is a critical element in a disaster and, therefore, DM plans will address measures to allay public anxiety and fear arising out of Bio Terrorisms.
- Availability of safe food, clean water, and minimum standards of hygiene and sanitation will be ensured. Vulnerable groups such as children, pregnant women, the aged and patients suffering from diseases like HIV/AIDS will be given special attention.
- The routine training of medical undergraduates, nurses and health workers for mental health services is grossly inadequate. There is virtually no emphasis on the mental health aspects of disasters even in the routine postgraduate training in psychiatry. There is a need for coordinated training services and monitoring at the district and state levels.
- Most victims at the scene of a disaster suffer from psycho-social problems. Some people, including relief workers, may develop post-traumatic stress disorders. The plan will involve community level social workers who can help victims of psychosocial problems.

- Complete ban on the press or media is not the right approach in such circumstances. The media is very useful for disseminating proper information and educating the community during a disaster.
- **Emergency Medical Response**
A biological disaster can lead to mass casualty incidences, both intentional or otherwise. The development of infectious diseases depends on various factors such as type of agents, incubation period, immune status of individuals, amount of infectious agent entering the body, etc. However, a large number of cases arising in a short span of time may require prompt establishment of medical posts near the incident site. They would triage the patient, provide basic life-support if required at the site, and transport patients to the nearest identified health facility along with collection and dispatch of biological and environmental samples. If the incident command system is implemented, then the RRT/MFR will be integrated with the ICP and function under the overall directions of the incident commander. Important components of an EMR plan are as follows:
 - Pre-hospital care shall be established and operationalised using a trained medical force. EMR at the site will depend upon the quick and efficient response of MFRs.
 - MFRs must be trained in the use of PPE and in collection and dispatch of samples from air, water, food and biological materials. The standards for detection and basic life support (airway maintenance, ventilation support, anti-shock treatment and preparation for transportation) will also be developed. EMR will be integrated with ICP and will function under the overall directions of the incident commander
 - There will be periodic mock drills for checking response time and reducing it to a minimum. Periodic training and refresher training schedules will also be prepared.
 - The medical posts shall provide evacuation services, specialised health care, food, shelter, sanitation, etc. These will coordinate with other functionaries involved in search, rescue, helplines and information dissemination, transport, communication, power and water supply, and law and order.
 - SOPs for providing hospital care and a command control centre with the district collector as supreme head, will be laid down and rehearsed using mock exercises.
 - The modes of communication will be dovetailed with emergency services of the district. Inter-hospital and inter-services communication will be established at all levels.
 - Mechanisms for checking the status of coordination in planning, operations and logistic management will be developed.

10.10 Psycho Social Care

Disasters usually leave a trail of human agonies including loss of human life, livestock, damage to properties, loss of livelihood, and all development works. In any disaster the magnitude of psychosocial and mental health problems is enormous. Apart from logistic and material help, relief and rehabilitation, the sufferings of human beings will require psychosocial and mental health interventions. It has been recognized that most of the disaster affected persons' experience stress and emotional reactions after disaster as a 'normal response to an abnormal situation', and are able to cope well with a little psychosocial support. However, a significant proportion of people are not able to cope effectively with the situation in the absence of appropriate/ adequate support system and they experience significant signs and symptoms requiring psychosocial support and mental health services. The symptoms are directly related to trauma experience. The Greater the trauma, the more severe is the response if other factors are same.

Psychosocial support in the context of disasters refers to comprehensive interventions aimed to help individuals, families and groups to restore social cohesion and infrastructure along with maintaining their independence and dignity in the aftermath of a disaster. Psychosocial support helps in reducing the level of actual and perceived stress that may prevent adverse psychological and social consequences among disaster affected people.

10.11 Disaster Mental Health Services

The Psycho-Social Support and Mental Health Services (PSSMHS) should be considered as a continuum of the interventions in disaster situations. While psychosocial support will comprise of the general interventions related to the larger issues of relief work needs, social relationships and harmony to promote or protect psychosocial wellbeing, the mental health services will comprise of interventions aimed at prevention or treatment of psychological symptoms or disorders. The experiences of the people subsequent to the disaster have direct relevance to recovery. The more the problems and life difficulties the survivors experience during the recovery phase, the more persistent will be their emotional reactions. This warrants appropriate interventions in accordance with the phase of recovery of the affected population with the diminished social supports being built for speedy recovery.

Table-10.12 Nodal Psycho Social Health Institution

Name of the Institution, Address & Contact details of the contact (Nodal) Person	No. of trained Doctors (Psycho Social)	No. of trained Paramedical staffs (Psycho Social)	Facilities available	Equipment's (If required any) available

Table-10.13-Collaborative Institutions

Name of the NGO/CSO/ Private Sector	Expertise	Contact Person	Contact Details (Number & Email ID)	Address

10.12 Community Based Disaster Psychosocial Care

The psychosocial aspects of disasters on human beings have been acknowledged as an international agenda (WHO, 1992). However, in India, the psychosocial aspects have never been emphasized until very recently after tsunami, 2004. The Bhopal gas tragedy (1984) was the most important disaster to draw the national attention due to its severe impact and the sensitivity of the politico-economic issues involved. The psychosocial impact was studied systematically although intervention programmes were more of psychiatric in nature. Marathawada earthquake (1993), and Andhra Pradesh Super Cyclone (1996) were disasters in which mental health professionals took an active part in terms of providing mental health services and undertaking research to study the psychosocial impact of these disasters.

The ICMR studies over last twenty years have provided strong base for integration of mental health services with general health care services and sensitization of the community members and rescue workers. Further, In the post Tsunami phase in India, the WHO along with the Department of Social Welfare, United Nations Team for (UNTRS), and partners have developed a model for providing sustained, low-cost community-based volunteer provided support systems. Community level workers who are the anchor for this programme are selected from various categories of people, including teachers, health workers, and members of Self-Help Groups etc, who have volunteered for this purpose. However, the finer details of the mechanisms and strategies for integration of mental health services with general health care services still need to be worked out.

Table-10.14 Volunteers & Paramedical Staffs (Community)

Name of Volunteers	Institution/ Organisation	Contact Person with contact details	Contact Details (Number & Email ID)	Address

Concept of Social Support Network

The psychological response to a disaster depends on three main factors

Table-10.15

Disaster	Community	Survivor
<ul style="list-style-type: none"> » Place of occurrence » Magnitude » Suddenness » Type 	<ul style="list-style-type: none"> » Level of preparedness » Social support network » Leadership » Past disaster experience 	<ul style="list-style-type: none"> » Age / Sex » Level of education/ exposure » Marital status » Physical health / » Disability » Personality/ » Coping skills » Magnitude of losses » Social support available

The psychological reactions that people experience as a result of the disaster may be either adaptive or maladaptive.

Table-10.16

Adaptive	Maladaptive
<ul style="list-style-type: none"> • Adaptive responses allow individuals to overcome the difficulties caused by the disaster. • For instance, obtaining information or developing effective survival skills. 	<ul style="list-style-type: none"> • Maladaptive reactions can include denial, ineffective actions etc. reactions can be prevented from occurring and if they do occur then they can be treated. • The incident of a young girl can be considered here from Orissa cyclone. The rescue team saw her hanging from a tree after five hours, but she was not having any clothes on her body. After accepting the clothes from the rescue team, she immediately jumped in the floodwater and committed suicide.

After a disaster there are four main phases, which the survivors go through. The first phase is considered as rescue which is up to 72 hours after the disaster. The second phase is relief which continues for three months after the disaster. The third phase is rehabilitation, which lasts for one to two years and the last phase is rebuilding, or reconstruction, which extends over lifetime. Reconstruction phase is the longest period when the population rebuilds personal skills, social support and leadership. This overlaps with the rebuilding phase.

Table-10.17

Phases after a Disaster	Duration	Characteristics
Occurrence of the disaster	Hours	Apathy, Disorientation, Wandering Surprise, Fear, Perplexity Anxiety, Helplessness

Heroic	Up to 1-2 weeks	Feeling strong, Direct feeling of saviour, eroism, Solidarity, Optimism
Honeymoon	2 weeks to 3 to 6 months	Great solidarity, Eagerness to rebuild, Sharing of common experience
Disillusionment	2months to 2 years	Withdrawal, Loneliness, Anger, frustration, Community disorganization, Negativity, Hostility, Impulsiveness, Violence, Alcohol and drug abuse
Reconstruction	2-5 years and Lifetime	Acceptance of losses Realistic assessment of the situation, Search for alternatives to rebuild lives

10.13. Coping with Loss & Circles of Support

It is very clear that the usual social support systems are eroded after a disaster. The family and the neighbourhood no more exist as a functional unit. The tertiary level of support system exists to some extent in terms of larger community, government and other external agencies. So, it is essential to pull these external resources (out of the affected community) for rebuilding the social support system and normalize the life of the survivors. At the third level the government and external agencies take the main role to rebuild the entire support system. Apart from the government agencies a lot of other players also come to the forefront. These include:

- Professionals from the medical, legal and other such fields.
- Student volunteers
- Religious social service groups
- Non-government organizations both national and international
- Business communities
- Civil society bodies
- Individuals in their own capacity contributing their skills or money

10.14. Needs of More Vulnerable Groups

The reactions to and impact of a single disaster event may vary among specific groups of survivors within the affected community, i.e. people with special needs or more vulnerable groups viz. children, people with disability, women, elderly people and people needing special medical care facilities. Lot of inter group and intra group variations are there in terms of vulnerabilities as detailed below

Table-10.18

Category	Exposure/Vulnerability
Children	<ul style="list-style-type: none"> • Children who were physically, neurologically, mentally and sensory challenged in the pre-disaster period and those who became disabled after the disaster • Children who need critical medical care facilities e.g. children suffering from cancer, diabetic, asthma, poor heart condition, blood borne diseases, HIV-AIDS, etc. • The children with special needs who become orphans after a disaster, are most vulnerable to different types of exploitation. • Orphaned and unaccompanied Adolescent children, especially girls Children whose parents are missing or remarried

Women	<ul style="list-style-type: none"> • Pregnant and lactating women • Disabled women • Women on critical health care facility • Women who lost their children and plan to undergo recanalization surgery • Elderly women • Women with prior history of psychiatric illness
Elderly	<ul style="list-style-type: none"> • Reduced physical & mental capabilities, delayed response syndrome, • increased transfer trauma & the array of emotional difficulties, • dementia, and rigidity

As per the PWD Act (1995) of Govt. of India, people with disabilities are a highly diverse group. Thus, each disability has its unique characteristics and disability specific needs. Since, their life conditions even prior to disaster are at a higher deprivation level, life conditions after a disaster become even worse. This could induce higher level of psychological distress and negative emotional reactions, which in turn could jeopardize their whole life functions. Therefore, psychosocial care givers should take extra caution to safeguard their self-respect and cater to their mental health needs. In case special intervention programme is needed to address their overall safety, dignity and needs, more emphasis should be placed on the inter-sectoral collaborations for their betterment. The following aspects & vulnerabilities should receive special attention of the care givers in the post-disaster phase:

- Accessibility to shelters and availability of basic amenities
- Availability of auxiliary aids, equipment's and services during the relief
- Special livelihood programme
- Treatment for any associated psychiatric illness
- Long-term community rehabilitation
- People on Dialysis
- People with organ transplantation
- Alcohol/drug dependents
- Heart patients
- People living with HIV/AIDS (PLWHA)
- People on Specific therapies (such as Cancer patients)
- Insulin dependent diabetics on high doses of insulin

10.15. Principles of Psychosocial Support

- No one who experiences or witnesses the event is untouched by it
- Disaster stress and grief reactions are normal responses to an abnormal situation
- Disaster results in two types of trauma i.e. individual and collective trauma. Individual trauma manifests itself in stress and grief reactions, while collective trauma can lead to deterioration in the social ties of survivors with each other.
- Disaster mental health services must be tailored to the needs of specific communities to be served
- Interventions must be appropriate to the phase of disaster 1. Initial phase: listening, supporting, ventilation, catharsis and grief resolution are helpful and 2. latter phase: handling frustration, anger and disillusionment
- Support systems are crucial for recovery
- Attitude of the caregiver

10.16. Basic Techniques of Disaster Psychosocial Care

- Ventilation: ventilation is a process to help the disaster survivors in expressing their thoughts, feelings and emotions related to the disaster and the resulting living conditions.

- Empathy: “looking at the event from the other person’s perspective and trying to realise the trauma of the other person by keeping himself/herself in that situation”. This skill of developing empathetic attitude towards survivors comes
- through regular habit of active listening of the survivor.
- Active listening Active listening is an important skill to facilitate ventilation and develop empathy, which in turn facilitate the whole process of providing emotional support. The following guidelines can help the care givers in achieving better results.
 - Look at the person while he/she is talking:
 - Respond occasionally while listening:
 - Avoid interruptions
 - Be tolerant & Empathise:
- Social support: Social support networks are extremely important for feeling comfortable and secure. In a disaster situation all the support systems get disrupted, hence the need to rebuild and restore.
- Externalization of Interests: Engaging them in small but productive activity/work (keeping age, gender, physical status, skills and interest as considerations) would help them in imbibing a positive thinking and feelings.
- The Value of Relaxation: Introducing relaxation activities for children (for instance some games, songs, dancing, painting, colouring and other things) and adults involving physical movement has proved to be very beneficial in helping survivors recover from their trauma and pain.
- Turning towards Religion and Spirituality: Helping people to turning towards his/her practiced religious rituals and practices (e.g. daily worship, prayer and related activities) would also facilitate the ventilation process, whereby there is a possibility of verbal/nonverbal expression of feeling/emotions and thus, making the survivor more peaceful in mind.

10.17. Understanding of Stress Symptoms & Management

The concept of stress was first used by Selye (1956) in his biological stress theory. It was defined as a set of specific physiological responses to environmental stimuli, e.g. chronic fatigue, nervous breakdown, physical damage etc. The important role of psychological factors remain in understanding the occurrence and modification of stress response.

Table 10.19

Emotional	Interpersonal	Sensational	Biological	Behavioural	Cognitive
Anxiety Guilt Embarrassment Depression Hurt Jealousy Feel like dying Cry frequently Moody	Cannot keep relationships Suspicious Gossip Competitive Withdraw Fearful and unassertive Aggressive	Heart rate Headaches Nausea Aches and pain Tremble Fainting Numbness Dry mouth Stomach cramps Sweaty Indigestion	Digestion problems Blood pressure Heart problems Tiredness Allergies Low immunity Mental problems	Substance dependence Sleep problems Tea smoking Restless Eating problems Aggression Irritation Speech problems Accident prone Eat, talk, walk faster Unkempt and	I must do well Life should not be like this I must have what I want This is terrible I cannot take this any longer Everyone should like me Working

				untidy Low productivity Bad time management	long hours » Not getting time to relax and take care of personal issues » Not able to contact the family members » The weather in the area etc
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Diverse Stress Responses

Table 10.20

Cognitive Responses:	Emotional Responses:	Self-image	Psychosomatic/Physiological Responses
Low awareness of the environment » Restricted scope of perception » Lowered ability to concentrate » Disturbed memory functions » Hesitation in decision making » Change in content of thinking » Low creativity and change in performance » Less ability to utilise relevant information	» Feelings of deprivation, guilt, anxiety, tension, aggression, irritation, worry, sadness, hopelessness and maladjustment.	» Low self confidence » Identity problem » Depression & Helplessness	» Headache & Body Ache » Muscular tension and pain » Gastrointestinal disorders/low appetite » Sleeplessness » Difficulty in breathing » High Blood Pressure (Source: Zimbardo, 1979) » Vague pain in different parts of the body » Increased heart beat & palpitation » Sweating in palms and feet » Shaking of the body & Fatigue » Butterfly sensation in the stomach

Relaxation Exercises

Table 10.21

Abdominal breathing	» Sit comfortably » Close your eyes » Put one hand on the abdomen » Focus on your breathing and try and see that you are breathing from your abdomen rather than your chest
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	» Concentrate on the fact that your stomach is rising as you breath in and falling as you breath out
Count breathing	Sit comfortably » Close your eyes » Count 1-2 two as you inhale » Release your breath slowly counting 1-2-3-4 (double the count of your inhalation) » Practice this till you feel relaxed
Nostril breathing	» Inhale naturally and then let out with a whooshing sound. Hold for some time and then let out again » Breathe through one nostril and breathe out through the other one » Combine breathing with visualization that you are getting energy and refreshment » Listening to some music while practicing these will enhance positive impact of the techniques
Free Meditation	» Sit comfortably or lie down and close your eyes » Put on some music and listen to the music » Do not try to think of anything, just concentrate on your breathing » If any thoughts come in do not try to control them or force them out, instead spend time on them and let them go as they come » Do it initially for about 5 minutes and slowly as you become better at it go on increasing the time period to about 20 –25 minutes and it would prove to be very relaxing
Candle meditation	» Sit comfortably » Light a candle or a lamp in front of you » Concentrate on the flame » Spend time just looking at the flame glowing and flickering » If you feel after some time close your eyes and look at the image in your mind » Slowly open your eyes after you are completely at ease » Do it initially for about 5 minutes and slowly as you become better at it go on increasing the time period to about 20 –25 minutes. It would prove to be very relaxing
Relaxation	» Lie down on the ground » Slowly move from your feet to your head saying the following to yourself

Disaster Psychosocial Referrals

Table-10.22

Within Caregiver's Control if the Survivor: » Is aware of who s/he is, where s/he is, and what has happened with him/her. » Is only slightly confused or dazed or show slight difficulty in thinking and decision making or finding difficulty in concentrating	Referral if the Survivor: » Is unable to tell/recall his/her name, name of the place and what has happened to him/her in past 24 hours » Complains about what is happening with him/her
Behaviour	
Is restless, mildly agitated and excited » Has sleep difficulty and decreased appetite	Is apathetic, immobile and unable to move around

» Sad, rigid, clenches the fists	» Is withdrawn and mutilates himself/herself, does not take care of self » Violent and causes harm to others » Uses alcohol or drugs » Repeats ritualistic acts as compulsions
Emotions	
Within Care giver's Control if the Survivor » Is crying and weeping consistently by reiterating about the incident » Has blunt emotions, is numb and hardly reacts correctly to his/her environment » Easily irritated and angered over trivial issues » Shows high spirits or laugh excessively » Very quiet with no emotions	Consider Referral if the Survivor » Is unable to be aroused and is completely withdrawn » Is excessively emotional and shows inappropriate emotions » Is excessively happy, or sad and depressed
Perception	
Has all senses intact and has no perceptual disturbance, like seeing the ghosts of those expired	Hears voices in absence of the actual living organism » Sees things in absence of any living organisms' existence » Has complaints about vague bodily sensations » Takes a constant peculiar body position for days together
Within Care giver's Control if the Survivor » Talks excessively about the disaster » Refuse to talk much » Has rapid or stammered speech	Consider Referral if the Survivor » Is talking irrelevant » Shows overflowing of incoherent speech » Does not talk at all for days together
Thought	
Has a feeling of despair and worthlessness » Has a doubt on his/her own recovery » Is over concerned about unimportant things and neglects important things » Denies what happened to him/her and blames Others	Is excessively preoccupied with one idea or thought » Has bizarre thoughts, which have no answerable reason in that situation » Has a false but extremely firm and strong belief of something that is going to happen to him/her » Is attempted suicide or has suicidal thoughts

10.18. Ethics & Confidentiality

- Never make false promises to the survivors
- Maintain the confidentiality of the very private information/problems what the survivors share with you.
- Have the commitment and strive to help and support the survivors in an unbiased manner
- Helping the co-workers and taking care of your self is very crucial.
- Whenever, the pressure of work or dealing with human suffering become stressful for you, seeking help and support is a must.
- Keep smiling and spread smiling among others

Chapter – 11

Capacity Building: -

11.1 Approach

Developing a DDMP without building capacity or raising awareness amongst stake- holders 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

Developing institutional capacity is very important. At the same time, by making the local community part of the process and solution would help in ensuring that disaster mitigation measures are more likely to be implemented and maintained over time.

11.2 Capacity Building Programmes of Govt. Officials at District and Sub-District Levels

[Note: a training strategy should be formulated for training of major government and non-governmental cadres in the district who can aid in disaster management. Programmes to be finalized by the district based on need and requirement.

Districts to first utilize the funds available under different schemes at the district level, for capacity building activities. Besides, funds are also available under State Disaster Response Fund (SDRF). District Administration to prepare the Capacity Building plan for the district and send the same with detailed budget to SDMA for necessary funding.

11.3 Indicative Training Programme for District Level Officials of Government Departments as per the Capacity Building Frame Work of the State

Table-11.1

Sl No.	Departments/ Sector	Participants	No. of Batches
1.	Agriculture and Farmers Empowerment	DAO, DHO, AAO, ADH, ADSC, SCO, ASCO, PD Watershed, SMS	30
2.	Commerce & Transport Department	RTO, MVI	9
3.	General Administration and Public Grievance	Lokayuktas	2
4.	Cooperation	District Central Cooperative Banks, Registrar Cooperative Society, Asst RCS & JRCS, Ware house In-charges	8
5.	Electronics and IT Department	District Data Managers, OSWAN	3
6.	Energy	EE/AEE/J E- 90 Discom	3
7.	Excise	Superintendent of Excise, Dy SE, IE	15
8.	Finance	Lead District Managers	3
9.	F&ARD	District Fisheries Officers, Adl FO, CDVO, ADVO, SDVO	15
10.	Food, Supplies and Consumer Welfare Department	CSO and ACSO	18
11.	Forest & Environment	DCF/AC CF/DFO, ACF/SDFO, Rangers	48

12.	Handloom Textile & Handicrafts	Primary weavers Cooperative Society, Mills & Looms	51
13.	Higher Education	Principals, NSS Coordinators	108
14.	Health & Family Welfare	CDMO, ADMO and Medical Officers	39
15.	Housing and Urban Development Department	SE Circle, PH Divisions, PH Sub Divisions, Dist. Town Planning Units, Special Planning Authorities	15
16.	Industries	Dy. Dir, ADF	3
17.	Information & Public Relations	DIPRO	3
18.	Labour and ESI Department	District Labour & Employment Officer	3
19.	Law	Head of DLSSA & Juvenile Justice Boards	3
20.	MS & ME Department	GM-DIC, IPO	36
21.	Planning & Convergence	District Planning Officer	3
22.	Revenue & Disaster Management	ADMs, Sub Collector, Emergency Officers, District Project Officers	12
23.	Rural Development	SE, EE	9
24.	Social Security & Empowerment of Persons with Disability	DSSO, Heads of Special School	36
24.	Sports & Youth Services	District Sports officer, Coaches	3
25.	ST&SC Development Department	PA, ITDA, DWO, DSWO, Special Officer, Micro Projects Heads, Cluster Heads	18
26.	Steel and Mines Department	.MO & DDM, JDCA & DDCA, ADG, JDG, DDG	3
27.	Tourism	Tourist Officers, Heads of Tourism Units	9
28.	Water Resources	CE, SE	9
29.	Women and Child Development Department	DSWO, Committees for Women & Childs	6
30.	Works	DIPR, SE, EE, RDQPSE, EE, OBCC, Technical Person, Architect, Procurement, Design, Building, SE, EE NH-SE, EE	21

(For the Training Schedule and Module of the above-mentioned training programmes Capacity Building Frame Work of the State may kindly be referred)

11.4 Indicative list of Training Programmes for Sub District Level Officials of Government Departments as per the Capacity Building Framework of the State

Table-11.2

Sl No.	Departments/Sector	Participants	No. of Batches
1.	Agriculture and Farmers Empowerment	AO, HO, JSCO, VAW	
2.	Commerce & Transport Department	Empanelled Driving Training Schools	6
3.	General Administration and Public Grievance	Advocates	20
4.	Cooperation	District Central Cooperative Banks, Registrar Cooperative Society (RCS), Asst RCS & JRCS, Ware house in charges	8
5.	Electronics and IT Department	Block Data Managers, OSWAAN	30
6.	Excise	SIE, ASIE, House Constables	116
7.	Finance	Bank Mangers	30
8.	F&ARD	AFO, SFTA, JFTA, BVO, VAS, LI, VT	777
9.	Food, Supplies and	Inspector of Supplies, Marketing	51

	Consumer Welfare Department	Intelligence Officer	
10.	Forest & Environment	Forester, Forest Guards	48
11.	Handloom Textile & Handicrafts	Tasar & Mulberry Societies	9
12.	Higher Education	Universities/Colleges	108
13.	Health & Family Welfare	MO-CHC, MO-PHC	681
14.	Housing and Urban Development Department	Chairman, Executive Officers, Municipality & NAC, PD	21
15.	Revenue & Disaster Management	Tahsildars, Revenue Supervisors, RIs & ARIs	1362
16.	Rural Development	Project & Support Staff	207
17.	Social Security & Empowerment of Persons with Disability	Child Care Institutions, Specialised Adoption Agency & Open Centres	36
18.	Sports & Youth Services	Coaches	33
19.	ST&SC Development Department	Hostels, Schools	387
20.	Steel and Mines Department	Director ate of Geology; Director ate of Mines	165
21.	Water Resources	CE, SE	102
22.	Women and Child Development Department	DSWO, Committees for Women & Childs	30

(For the Training Schedule and Module of the above-mentioned training programmes Capacity Building Frame Work of the State may kindly be referred)

11.5 Community Capacity Building and Community Based Disaster Management:

(District to provide detailed information on formation of village disaster management committees and task forces, their orientation and preparation of village disaster management plans)

Table 11.3

Sl. No.	District	Block	GP	No. of Vulnerable Villages covered in first phase	No. of VDMC Constituted	No. of Task Force Formed	No. NGOs involved in the process	Remarks

(GP wise village list for the first phase to be given in Volume II of the DDMP as per the following Table]

Table 11.4

Sl	District	Block	GP	Village	Name of the VDMC	Name of President	Contact No.	No. of Task Force Teams Formed	Name of the NGO	Contact Details

11.6 Training Programmes for Cyclone and Flood Shelter Maintenance & Management Committee (CSMMC & FSMMC) and Task Force members:

(Indicative list of Training Programmes for CSMMC, FSMMC and Task Force Volunteers)

Table- 11.5

Sl No.	Training Programmes	Participants
1.	Basics on Disaster Management with Early Warning	Members of CSMMC & FSMMC
2.	Training on Personal Hygiene, Relief Distribution and Logistics Management	CSMMC / FSMMC and Village Volunteers
3.	Shelter Management	CSMMC / FSMMC Member
4.	Shelter Level Mock Exercise	CSMMC/FS MMC/Task Force/Volunteers
5.	Specialized training on basic survival skills	Task Force members (S&R and First Aid)
6.	Safety and Protection	Task Force members (S&R and First Aid)
7.	Specialized training on Search & Rescue	Search and Rescue Group

11.7 Mock Drills at Shelter level:**Table-11.6**

Sl. No.	Type	No. of Cyclone/ Flood Shelters to be covered	No. of villages to be covered.	Month/ Date
1.	Cyclone Mock drill			
2.	Tsunami Mock drill			
3.	Flood Mock drill			

11.8 District/ Block level Mock Drills:

(Periodic mock drills to be organized involving district and block level officials/ institutions to assess the capacity and preparedness to face certain disasters. All recommendations and findings will be incorporated in updating of DDMP)

Table-11.7

Sl. No.	Type of Mock Drill	Officials/ Institutions to be involved	Month/ Date	Remarks
1.	Tsunami			
2.	Flood			
3.	Cyclone			
4.	Earthquake			
5.	Industrial Accidents/ Industry Specific Mock drills			
6.	Crowd Management			

Chapter 12

Preparedness: -

Disasters can be minimized by a well preparedness and identification of the most vulnerable location is the foremost action in this regard. The communities itself are the first responders for rescue of disaster victims and their role is very crucial. Hence, there is no alternate other than preparedness that they are competent to respond to any incident in an effective way. The service of NDRF, ODRAF, Fire, Police, Home Guard, NCC, NSS, NYK, NGOs, VO as well as entire Emergency Machinery of Government and Private are also bears importance in the local level activities to combat any disaster.

12.1 Relief Lines: District to Blocks

Table-12.1

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (Blocks)
	From	To			
1	Bargarh	Jharbandh	Bituminus Road & 135 K.M.	No	4
2	Bargarh	Bijepur	Bituminus Road & 25 K.M.	No	1
3	Bargarh	Bhukta	SH 45 km	No	2
4	Bargarh	Gaisilet	MDR - 70 KM	No	3

12.2 Relief Line Channels: Block to GPs & Villages

Table-12.2

Sl. No	Name of the Road	Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (In Nos.)
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	From	To			Village	Population
1	Jharbandh	Kumir via Jagdalpur	Bituminus & Partly Hilly Terrain	Jagdalpur to Sankunjari, Chi roli	2	2000
2	Cherengam und a (Bijepur)	Satbandh	Earth & 1.5 K.M.	Heavy rain	1	591
3	Bhukta	Chikhili	9 km	Heavy rain	1	
4	Bhukta	Beniapali	8 km	Heavy rain	1	
5	Bhukta	Antaradi	5 km	Heavy rain	1	
6	Gaisilet	Changaria & Jankeda	PWD & 10 Km	Nil	2	1936
7	Lakhmara	Chardapal i	Ang River Moorum Road	Cross the Ang river by Boat	5	3153
8	Lakhmara	Saraikela	Ang River Moorum Road	Cross the Ang river by Boat	4	4911
9	PDM	Gaisilat	RD Road & 13 KM		2	

12.3 Resources Available: Response Forces & Volunteers
Table-12.3

Sl. No	Response Forces/	Capacity (In Nos.)	No. of trained person			Name of Nodal Person	Contact Details (Mobile/Phone)
			Search /Rescue	First Aid	Relief line Clearance		
1	NDRF					M.K. Yadav	09439103170
2	ODRAF	50	41			Ashish Kumar Singh,IPS	8895046814
3	Police	465	87			Rahul Jain, IPS	9438916490
4	Home Guards	344				Sadananda Pujari	9438916506
5	Civil Defense						
6	NCC	4540				Amrit Lal Behera	7978737723
7	NSS	2200				Babita Sarangi	9437257063

8	NYK	16562(NYK)/ 10297(Youth Club)				Sri. G. RoshanTandon	8770928068
9	Trained Task Force						
10	Apada Mitra Volunteers						

12.3 PROCEDURE FOR USING INMARSAT ISAT PHONE 2

1. Stand outside with a clear view to the sky with the phone antenna pointing upwards.
2. There must be a clear line of sight between the phone's antenna and the satellite.
3. Point the antenna towards **South-East** direction.
4. Switch on the phone by pressing the Red power button of the phone for few seconds. Until the screen lights up.
5. Align the antenna for getting the maximum satellite signal strength (minimum two bars)
6. The screen will show "searching for satellite" "registering with network".
7. The screen will show "ready for service". Inmarsat name will come in top right corner.
8. Then the phone is ready to operate
9. Simply dial the desired no:
 - i. From satellite to landline: Dial **00** + Country code 91+ **STD code (without 0)** + desired **Telephone No**
 - ii. From **Satellite to mobile**: Dial 00 + 91+ Mobile Number
 - iii. From **Satellite to satellite**: 00+ satellite phone number
 - iv. From **Landline** (should have ISD facility) to **satellite**: 00 + satellite phone number
 - v. From **Prepaid mobile** (should have ISD facility with sufficient balance) to **satellite**: 00 + satellite phone number
10. To end the call Press 'red' button

NOTE:

- A delay in microseconds will be observed so the user is advised to listen to one end and then speak.
- The user is also advised to SPEAK SOFTLY to get better voice quality at the other end.
- Check the Battery. (Display will show a rectangular block that will be filled according to the charge in the battery). Always charge the battery till it gets charged 100%.
- For more detail information please follow the **User Guide document**.

12.4 Allotted Satellite Phone Numbers**Table 12.4**

Sl	Districts	Calling Numbers	Sl	Districts	Calling Numbers
1	Collector Angul	870776146926	27	Collector Rayagada	870776146919
2	Collector Balasore	870776146936	28	Collector Sambalpur	870776146920
3	Collector Bargarh	870776146928	29	Collector Sabaranpur	870776146951
4	Collector Bhadrak	870776146927	30	Collector Sundargarh	870776146952
5	Collector Bolangir	870776146930	31	ODRAF Cuttack, OASP 6th Battalion	870776146961
6	Collector Boudh	870776146929	32		870776146962
7	Collector Cuttack	870776146932	33	ODRAF Bhubaneswar, OSAP 7th Battalion	870776146959
8	Collector Deogarh	870776146931	34		870776146960
9	Collector Dhenkanal	870776146934	35	ODRAF Baripada, OSAP 5th Battalion	870776146957
10	Collector Gajapati	870776146933	36		870776146958
11	Collector Ganjam	870776146949	37	ODRAF Rourkela, OSAP 4th Battalion	870776146955
12	Collector Jagatsinghpur	870776146950	38		870776146956
13	Collector Jajpur	870776146947	39	ODRAF Koraput, OSAP 3rd Battalion	870776146953
14	Collector Jharsuguda	870776146948	40		870776146954
15	Collector Kalahandi	870776146945	41	ODRAF Jharsuguda, OSAP 2nd Battalion	870776146908
16	Collector Kandhamal	870776146946	42		870776146909
17	Collector Kendrapada	870776146943	43	ODRAF Chatrapur, OSAP 8th Battalion	870776146906
18	Collector Keonjhar	870776146944	44		870776146907
19	Collector Khorda	870776146935	45	ODRAF Balasore	870776146904
20	Collector Koraput	870776146942	46		870776146905
21	Collector Malkangiri	870776146918	47	ODRAF Bolangir	870776146902
22	Collector Mayurbhanj	870776146925	48		870776146903
23	Collector Nabarangpur	870776146924	49	ODRAF Jagatsinghpur	870776146963
24	Collector Nayagarh	870776146923	50		870776146964
25	Collector Nuapada	870776146921	51	Special Relief Commissioner (SEOC)	870776146917
26	Collector Puri	870776146922	52	Managing Director, OSDMA	870776146916

12.6 Preparedness at District level: (The list is Indicative & may be extended further as per need & requirement)**Table-12.5**

Task	Activity
District Emergency operation Centre (DEOC)	<ul style="list-style-type: none"> • Test Checkup of all communication Interfaces in regular interval • Proper manning of the Control Room as per Para-10 of the Odisha Relief Code • A dedicated vehicle must be earmarked for Control Room
Upward & Downward Communication	<ul style="list-style-type: none"> • Have a list of Nodal persons with contact details • Establish regular linkages with all important stakeholders • Contact SEOC regularly
Meeting of DDMA (Heads of the department & stakeholder)	<ul style="list-style-type: none"> • DDMA must meet twice every year & before any disaster • Fix time & venue for regular Preparedness meeting to Assess preparedness of District /Department /Civil Society /Block Community /Family /Individual level regularly • Circulate the minutes of the meeting with clear-cut role & responsibility
Capacity Building	<ul style="list-style-type: none"> • Identifying & designating Nodal Officer for different Dept. • Capacity building & skill upgradation of ODRAF/Fire services/ Police/Home Guard • Identify Volunteer like Civil Defense/Cyclone shelter Task Force/NCC/NSS/Scout & Guide & train them on Search & Rescue, First aid, evacuation etc. • Take stake of required materials for search & rescue, first aid, casualty management, evacuation, relief etc. & update IDRN portal regularly • Assess preparedness through Mock drill at District, Block & Community level
Shelter Management	<ul style="list-style-type: none"> • Take necessary steps for operation & maintenance of shelters • Test Check of various Equipment at shelter level & repair of the defective ones • Ensure regular meeting of Shelter committee • Assess Shelter level preparedness through Mock drill I
Planning & Reporting	<ul style="list-style-type: none"> • Collect & transmit Rain fall data regularly • Collect & transmit weather report regularly • Ensure preparation of Disaster Management Plans & Safety plans at all levels • Capacity building of all Stake holders • Integrate the District plan with block & Village disaster management Plans • Develop healthy media partnership

12.7 Preparedness at Community Level**Table-12.6**

Task	Activity
Early Warning Dissemination	<ol style="list-style-type: none"> 1. Build regular linkages with BEOC & DEOC 2. Test Check of various Equipment at shelter level & repair of the defective ones 3. Keep updates from BEOC/DEOC 4. Monitor & Transmit updates to BEOC 5. Supply required information to BEOC & DEOC
Ensuring Preparedness	<ol style="list-style-type: none"> 1. Have a list of Nodal person deployed in the village with contact details 2. Identification of safer routes & shelters 3. Identify possible ways to reach persons like Farmers/Fisherman/NTFP collectors etc. who ventures into fields, sea & forest respectively 4. Build teams from among the task force on Search & Rescue, First aid, Damage & loss assessment 5. Assess preparedness at Family/Individual level 6. Test Check-up of equipment's
	<ol style="list-style-type: none"> 1. Understand Local dynamics exposed & vulnerable to different disaster 2. local Social Economic & weather conditions 3. Develop Village DM plan 4. List of emergency contact Nos. & display it in Centre places. 5. Participate in the activities of Preparing village Disaster Management, developing Safety plans, Capacity building Programmes & Mock Drills

12.8 Preparedness at Family Level (The list is Indicative & may be extended further as per need & requirement)**Table-12.7**

Task	Activity
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Warning Communication	<ol style="list-style-type: none"> 1. List the minimum Important requirements Keep all the important Documents in a water proof polythene 2. Record the Safe & alternative routes to shelter 3. Keep News update in Radio/TV
Preparedness	<ol style="list-style-type: none"> 1. Always keep in readiness a “Ready to go Emergency Kit” containing Dry food (for 72 hours x Family member), Drinking water (2ltr/per person per day), Hand wash/soap, Important Documents/Valuables, Whistle/match box/lighter/ torch/battery/ umbrella, Mobile & charger / radio 2. Family must have a “Ready to go First Aid Kit” containing Iodine/ Band aids/ Cotton/ Medicines/ ORS/ ointments/ scissor/ halogens etc. 3. Assess preparedness on a regular basis by checking Radio/Mobile/ Emergency Kit/First Aid Kit/Fuels & Kerosene (as per need) 4. Replace the damaged outdated or expired materials with new ones.
Capacity Building	<ol style="list-style-type: none"> 1. Participate & involve in the activities of village disaster Management plan, preparation of Safety plans, participate in Capacity building Programmes & involve in Mock Drills

12.9 Preparedness at Individual Level (The list is Indicative & may be extended further as per need & requirement)

Table-12.8

Task	Activity
Early Warning Dissemination	<ol style="list-style-type: none"> 1. List & keep a ready to go minimum Important requirements 2. Record the Safe & alternative routes to shelter 3. Keep News update in Radio/TV
Ensuring Preparedness	<ol style="list-style-type: none"> 1. Every individual/child must have a Personal Identity information like a copy of Aadhar card/ Voter ID / School Identity Card & Contact numbers of Preferably two who can be contacted in time of emergency 2. Family members especially kids must be sensitized about family gathering point during disaster & crowded places 3. Assess preparedness on a regular basis by checking Radio/Mobile/ Emergency Kit/First Aid Kit/Fuels & Kerosene (as per need)

Capacity development	<ol style="list-style-type: none">1. Participate & involve in the activities of2. Disaster Management3. Safety plans4. Capacity building Programmes13 Mock Drills & FAMEX
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12.10 Preparedness of Departments (The list is Indicative & may be extended as per need & requirement)**Table-12.9**

Name of the Department	Normal Time
Collector/ADM / Emergency Officer	<ul style="list-style-type: none"> • Ensure regular meetings of District Disaster Management Authority • Develop & update Disaster Management Plan, carry out Hazard analysis in the district • Identify safe alternate routes to cyclone shelters. • Keep a list of Contacts of EoCs, Nodal officer of different departments, Important stake holders, Village leaders, shelters • List of Relief lines & storage places • List & maintenance of SAR equipment • Capacity building of stakeholders & volunteers • Asses preparedness through Mock Drills for different disasters at district department, block & community level • Adopt sustainable mitigation measures • Integrate DM & DRR features in development programmes
CDMO	<ul style="list-style-type: none"> • Disaster Management Plans & Safety plans for Hospitals • Capacity building of Medical & Para Medical Staffs • Assess preparedness through Mock Drills & familiar exercises • Integrate department plans with plans with Village & Block Plans and development programmes • Develop media partnership • Develop capacity of hospitals with advance equipment, proper manning & disaster resilient infrastructures • List out the staff with contact address • Stock position of the sub-center and PHC/ AWCs • Prepare the plan and indent for stock • Train paramedical staff/ ANMs/ Male Health Workers/ Volunteers/ Task Forces/ Anganwadi Workers for use and providing minimum health services to the community. • Arrange for mobile health unit for inaccessible areas • DDC at village level • Health Awareness Campaign

	<ul style="list-style-type: none"> • Reinstall telephone connection • Arrangement of vehicle for uninterrupted mobility • Repair of Sub Centers buildings • Registration of Birth/ Death and other vital events • Dis-infections of Drinking water Sources thrice before flood season at least, one month before
Superintendent of Police (SP)	<ul style="list-style-type: none"> • Ensure functioning of the warning system. • Formation of team • Delegation of areas • Formation of Zones/ Sub-Zones
Revenue Department	<ul style="list-style-type: none"> • Holding of natural calamity meeting in the month of May and October. • Joint inspection • Formation of Zones/ Sub-Zones • Review progress • Arrangement of boats and transport, based on the risk assessment, for evacuation • Provision/ arrangement of rescue kit at risk prone area. • Equipments to be ready • Formation of team • Delegation of areas
EE- RWSS	<ul style="list-style-type: none"> • Installation of tube-wells • Site visit and report preparation • Awareness generation for using bleaching • Helping BDO during emergency • Supply of drinking water during emergency • Site selection and water test in Palasuni (BBSR) • Collection and storing of K-018H2s test stripe, bottle, bleaching, halogen tablets, tube well accessories • Area wise deployment of staff, fitter, Mason, APD

EE- Irrigation	<ul style="list-style-type: none"> • Holding of natural calamity meeting in the month of May and October • Awareness Generation • Formation of Zones/ Sub- Zones • Review Progress • Provision/ arrangement of sand bags in risk prone area • Equipments to be ready • Formation of team • Arrangement of vehicle • Delegation of areas
DAO- Agriculture	<ul style="list-style-type: none"> • Information provided about the disaster and likely damages to crop and plantation • Organized transport, storage and distribution of seeds/fertilizers/pesticides • Cleaning operation carried out to avoid water-logging and salinity • Surveillance for pests and diseases being carried out. • Establishment of public information centers requirements for salvage or re-plantation assessed damage. • Identification of different areas to be affected by different hazard • Listing of irrigation sources with status.
EE- Public Works	<ul style="list-style-type: none"> • Route strategy for evacuation and relief marked will be prepared • Clearance of blocked roads • Community assistance mobilized for road clearing. • All staff informed about the disasters, likely damages and effects
DTO-Telecom	<ul style="list-style-type: none"> • Inspection and repair of poles etc. • Standby arrangements for temporary electric supply or generators • Identification of materials required for response operations • All staff informed about the disasters, likely damages and effects
CDVO	<ul style="list-style-type: none"> • Arrangement of repairs/alternative arrangements in case the facilities related to animal husbandry and veterinary services are disrupted. • To make arrangements to necessary medicines, vaccines and other material, for treatment of animal
RTO/MVI	<ul style="list-style-type: none"> • Designate one of the officers as nodal officer for management of the disaster in the district. ® • Prepare the Disaster Management Plan of the department at the District level.

	<ul style="list-style-type: none"> • To identify and designate the buses bunches which can be plied in response to the specific disasters. • Issue standing instructions to the private bus and truck operators and assign the responsibilities for them in case of disaster situation
DFO-	<ul style="list-style-type: none"> • To take care of public shelters, other places to be used for evacuation with primary facilities like water. • To prepare a list of public properties in the damage prone forest areas and will make advance arrangements to lessen the damage • To take care of public shelters, other places to be used for evacuation with primary facilities like water • To prepare a list of public properties in the damage prone forest areas and will make advance arrangements to lessen the damage
EE- Electricity	<ul style="list-style-type: none"> • Regular identification of faults • Regular checking and repair of weak points. Transformers • Stockpiling of equipment/ accessories • Skill development training / orientation • Precautions/ protections near high voltage electric equipment installed • Stopping illegal consumption of electricity
EE - PHED	<ul style="list-style-type: none"> • Super chlorination of water sources • Sinking pump machines • Installation of water storage tanks • Installation of DG sets
DEO- School & Mass Education	<ul style="list-style-type: none"> • Repairing of school buildings • Repairing of roads and approaches to school buildings • Creating awareness among the parents & students regarding different disasters
DEO - Higher Secondary Education	<ul style="list-style-type: none"> • Repairing of college buildings • Repairing of roads and approaches to college buildings • Creating awareness among the parents & students regarding different disasters

SoP for the Departments to be done accordingly

Chapter-13

Response: - 13.1

Response refers to activities done for handling disaster to bring the situation to normalcy not exceeding fifteen days from the abatement of disaster. The onset of an emergency creates the need for time sensitive actions to save life and property, reduce hardships and suffering, and restore essential life support and community systems, to mitigate further damage or loss and provide the foundation for subsequent recovery. Effective response planning requires realistic identification of likely response functions, assignment of specific tasks to individual response agencies, identification of equipment, supplies and personnel required by the response agencies for performing the assigned tasks. A response plan essentially outlines the strategy and resources needed for search and rescue, evacuation, etc.

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In addition to the various types of disasters, there are different phases of the emergency response to them. For example, in most rapid onset disasters the very first stage is search and rescue. Search and rescue operations usually involve specialized units. Rescue is times when specialized units are available locally or sent in by another safe place. The local population acts immediately to search for victims and bring them to safety. This stage of an emergency response is immediate and usually lasts just three to four days after a disaster event.

The follow-up stage to search and rescue consists of emergency relief. This stage is unpredictable in terms of its duration. The short-term emergency relief for its disaster-affected population before moving quickly to rehabilitation and reconstruction. There could also exist variations within a disaster-affected population with economically well-off groups recovering more quickly from a disaster event than those less well-off. Some countries may be very hard hit by a disaster event and require emergency relief over a long period of time.

This is achieved primarily by ensuring participation of the disaster-affected population in program design and building on local capacities. As an emergency situation stabilizes the affected communities and humanitarian actors move into the transition stage of rehabilitation and reconstruction, and, if all goes well, to development.

Forecasting and Warning:

A reliable and timely warning of disasters can save a lot of human lives. In India various upgraded and modernised the monitoring, forecasting and warning systems to deal with flood, earthquake and drought.

Floods

The central water commission has a flood forecasting system covering 62 major rivers in 12 states with 157 stations for transmission of flood warning on real time basis. The forecast are issued with an accuracy of up to 95 percent. There are also 55 hydro-meteorological stations in the 62 river basins. VHF/HF wireless communication systems is used for data collection with microcomputers at the forecasting centres. Hydrological models are increasingly used for inflow and flood forecasting and the forecasts are communicated to the administrative and the engineering departments for dissemination.

Droughts

The IMD has divided the entire country into 35 meteorological subdivisions. It issued weekly bulletins on rainfall indicating normal, excess and different levels and also the percentage of departure from the normal. The CWC monitors the level of 60 major reservoirs with weekly reports of reservoir levels and corresponding capacity for the previous year and the average of the previous 10 years. Similar monitoring of smaller reservoirs by the irrigation Departments of the state governments gives advance warning of hydrological droughts with below average stream flows, creation of stream flows and decrease in soil moisture and ground water level.

Based on the input from IMD and CWC on the rainfall behaviour and the water levels in the reservoirs respectively and the information on crop situations received from the local resources, the National Crop Whether Watch Group monitors the drought conditions based on vegetative and moisture index status.

Earthquake

On the basis of past earthquake of magnitude 5 and intensities ranging from V to IX superimposed on the magnitude information and also drawing upon tectonic feature in the near past, Earthquake Zone maps have been prepared. IMD operates network of 36 seismic monitoring stations.

Activation of Emergency Plan:

Responses are structured as per the nature of disaster. Three level of disaster have been identified – potential, limited and full emergency conditions. Emergency plan of each level

should be prepared by the District, Block and GP level. An elaborated communication process enables identification of the particular emergency plan, which should be implemented.

Trigger Mechanism

Trigger Mechanism has been conceptualized as an emergency quick response mechanism which, on energising would spontaneously set the vehicle of management into motion on the road to disaster management process. The underlying assumptions behind this conceptualization is that the process and mechanism of responding have been planned earlier and response activities would start as soon as the information is received about a disaster or impending disaster by any point in the whole mechanism. To have an effective Trigger Mechanism for the disaster managers are:

- i. Evolving an effective signal/warning mechanism.
- ii. Identification of activities at their level.
- iii. Identifying sub activities under each activities/level of activity.
- iv. Specifying authorities for each level of activity and sub activities.
- v. Determining the response time for each activity.
- vi. Working out individual plans of each specified authority to achieve the activation as per the response time.
- vii. Having quick response teams for each specified authority.
- viii. Having alternative plan and contingency measure.
- ix. Undergoing preparedness drills.

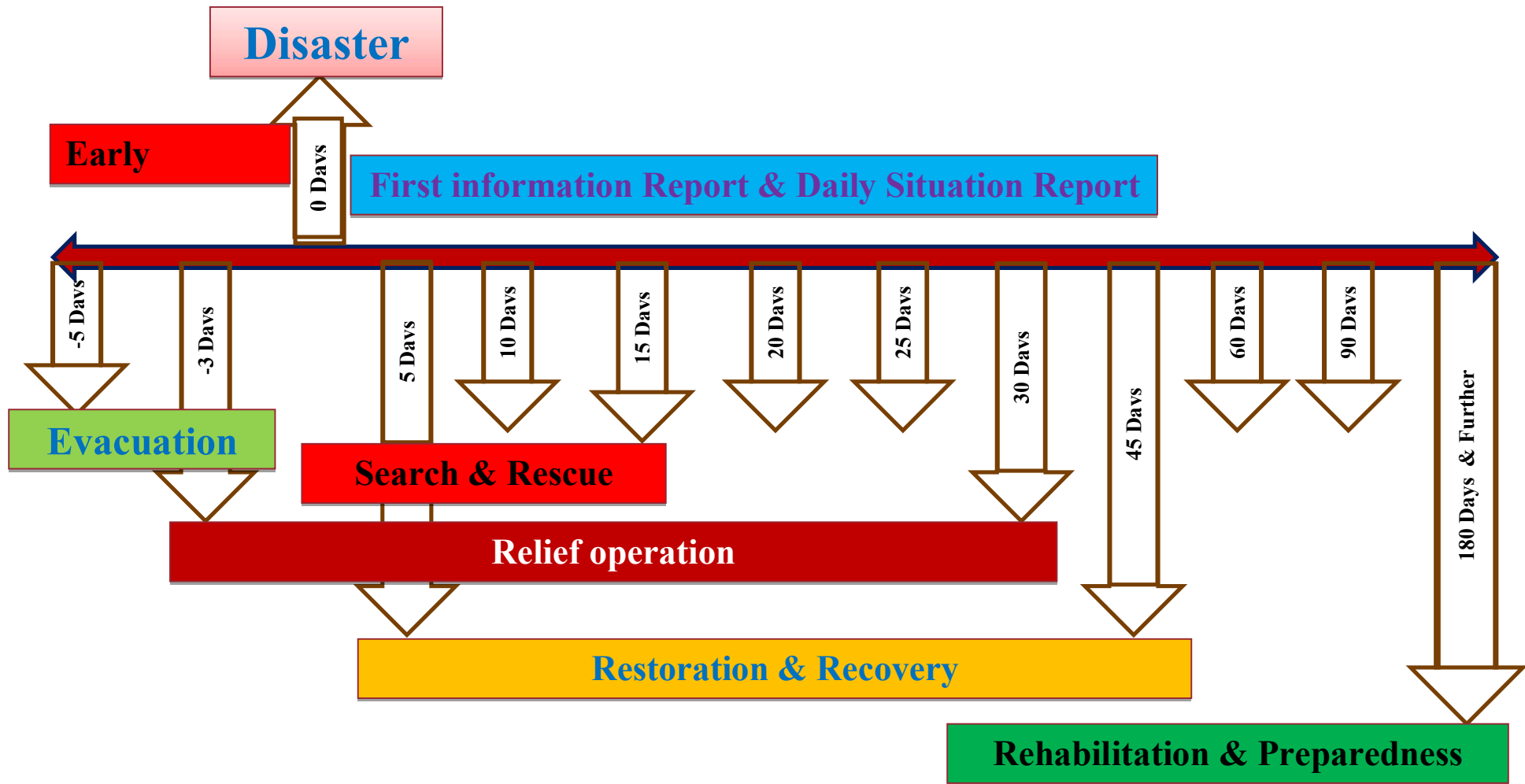
Supply and Management System (SUMA)

The SUMA is a management and training system and can be visualized as a technical cooperation project. It is a powerful indicators and tools for transparency and accountability and contributes significantly of storage systems. The SUMA system performs the following functions:

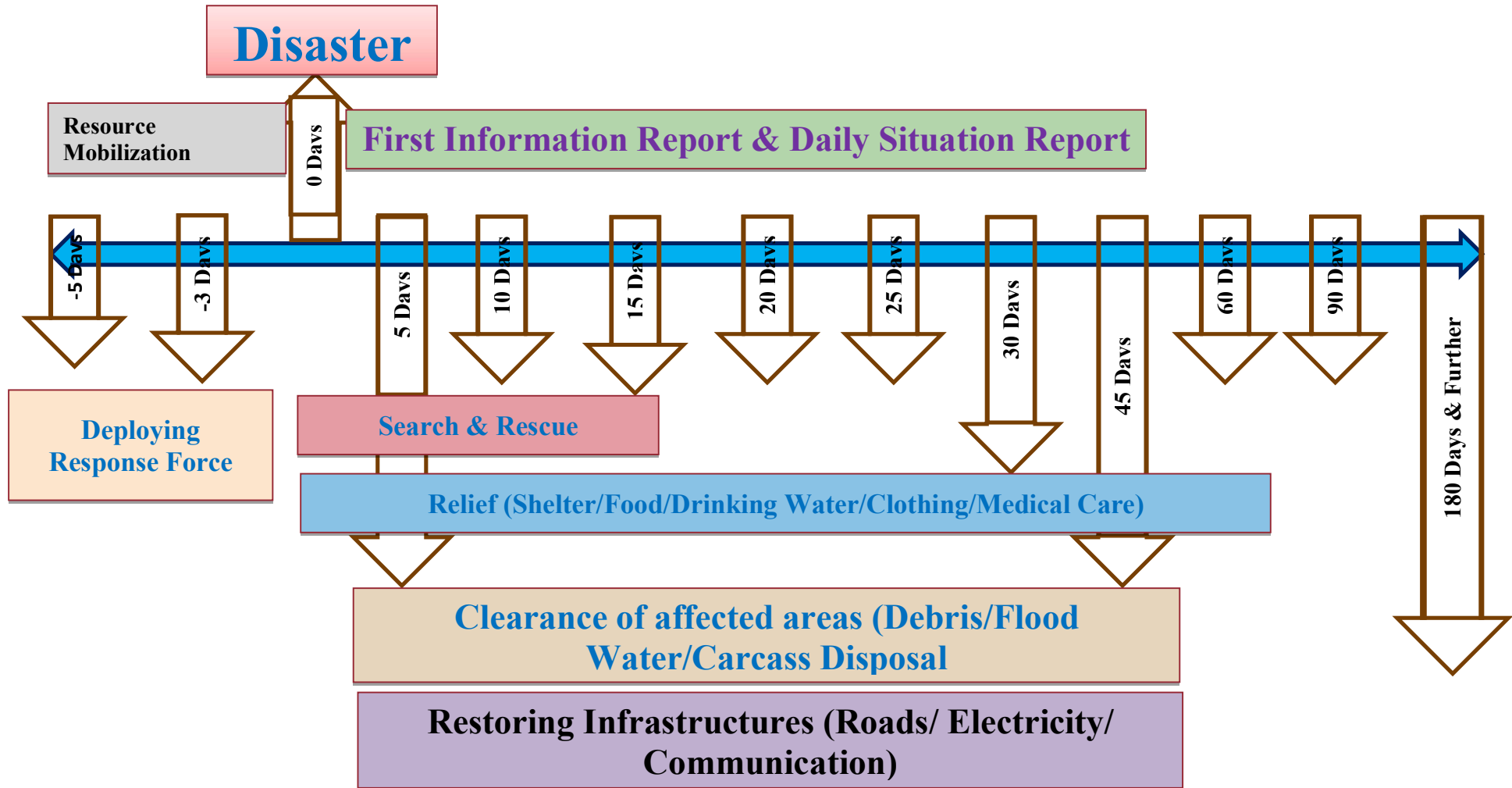
- i) Registering- Every arriving materials to be registered in the entry point.
- ii) Classifying- The system classifies the incoming supplies regardless of ownership as per the pre-established category.
- iii) Sorting- Under SUMA the incoming supplies are sorted out accordance to priority into three categories. These are as
 - a) Items urgently needed.
 - b) Items of potential usefulness.
 - c) Items of no use.

13.2 Phases of Response: Timeline (Indicative)

Figure- 13.1



13.3 Relief Management: Timeline
Figure - 13.2



13.4 Response: District (The list is Indicative & may be extended further as per need & requirement)**Table- 13.1**

Task	Activity
Warning Communication	<ul style="list-style-type: none"> Warning dissemination to the list of Nodal person & concerned BDOs Recording the receipt of information & regular Status update Transmitting updates to SEOC in regular interval as instructed
Meeting of DDMA (Heads of the department & stakeholder)	<ul style="list-style-type: none"> Collector to take up a department coordination meeting & distribute works among all the Departments Collector issues circular to keep Govt. offices open cancelling all holidays. A fixed time to be finalized every day for reporting at all level. A nodal officer is identified for media management Circulate the minutes of the meeting with clear-cut role & responsibility
Pre-positioning of staff, resources & Evacuation	<ul style="list-style-type: none"> Identifying & designating Nodal Officer for different stages of disaster & affected areas. Positioning of ODRAF/NDRF/Fire services/ Police/Home Guard in the affected areas Pooling Volunteer services (Civil Defense/Task Force/NCC/NSS/Scout & Guide) Take stake of required materials for search & rescue, first aid, casualty management, evacuation, relief etc. Make necessary arrangements of shelters for evacuation Constitute a special team for special care to vulnerable section like Specially abled, Sr. Citizen, Pregnant & lactating women, Infants & children etc.
Response	<ul style="list-style-type: none"> EOCs to Ensure back up (Power/Fuel/internet/ Communication at Dist/Dept. & Block levels Response force under guidance of Nodal officers ensure complete Evacuation (Human/ Animal), carry out Search & Rescue, clear relief lines, Collector to submit requisition of vehicle/boat/ helicopters & list of support from state & Centre to all concerned authorities CSO to store required relief materials (Chhuda. Gur, Dry Foods) in the nearby storage points CDVO to store, transport & distribute required foddors for animals to the affected areas

	<ul style="list-style-type: none"> • Cyclone shelter committee & Village Disaster management committee to organize free kitchen in the shelters with help of revenue dept. • EE- RWSS & CDMO to ensure supply of drinking water, disinfection of water & maintain Health & hygiene in the shelters • CDMO to carry out First aid & casualty management <ul style="list-style-type: none"> • Collector to collect & transmit First Information Report (FIR) & Daily Situation Report as per requirement
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13.5 Response: Community Level (The list is Indicative & may be extended further as per need & requirement)

Table-13.2

Activity
<ul style="list-style-type: none"> • DEOC to disseminate warning communication to BEOC & Community • Response force to ensure Power/Fuel/internet/ Communication at Shelters back up • Supply Inspectors & Marketing Inspectors to distribute relief materials with response force, Task force & volunteers • Response force to carry out Search & Rescue measures, Emergent relief operation, Relief line clearance, distribution of relief • Doctors to carry out First aid & casualty management, Carcass disposal & sufficient mortuary facility in the affected areas

13.6 Response: Family & Individual Level (The list is Indicative & may be extended further as per need & requirement)

Table-13.3

Task	Activity
Response	<ul style="list-style-type: none"> • Listen to the instruction of the response force & warnings • Economic use of “Ready to go Emergency Kit” Ready to go First Aid Kit • Cooperate the response force/officers & Render volunteer service if asked for • Maintain cleanliness & hygiene at shelter

13.7 Response: Standard Operating Procedures for Departments (The list is Indicative & may be extended as per need & requirement)

Table-13.4

Name of the Department	On Receiving Warning	Response time	Post Disaster
Collector/ADM / Emergency Officer	<ul style="list-style-type: none"> • Review the situation in DDMC • Activate EOC & Early Warning • Work distribution for operation • Circular to keep offices open • Arrange vehicle & activate Evacuation (Normal/Forceful) • 	<ul style="list-style-type: none"> • Activate Search & Rescue • Arrange temporary shelters • Arrange logistics in shelters • Workout financial estimates (evacuation / relief /recovery) 	<ul style="list-style-type: none"> • Activate relief line clearance • Proper relief Distribution • Start damage assessment • Facilitate Ex-gratia & Compensation • Start primary damage estimate • Pool resources for SAR/shifting of critical patients
CDMO	<ul style="list-style-type: none"> • Disseminate the alert to all concerned (Staff list) • Arrangement of medicine, First aid kits & teams • Mobile Health units for inaccessible pockets • Identifying & shifting patients requiring intensive care to safer places • Supply of medicines & pre-positioning of medical teams to vulnerable areas • Vaccination for prevention of communicable diseases • Measures to dis –infect drinking water • Availability of Blood Banks/Ambulance 	<ul style="list-style-type: none"> • Mass Casualty Management units & Triage • First Aid Centers • Medical surgical teams • Adequate mortuary facility • Measures to shift patients requiring intensive care • Pool of Blood donors (Preferably each group) • Additional laboratories • Carcass disposal team & units 	<ul style="list-style-type: none"> • Psycho-Social Counseling • Post Disaster Disease surveillance system • Special attention to vulnerable section • Networking with & promote treatment in Private Hospitals • Carcass Management & Issuance of Death Certificate
Superintendent of Police (SP)	<ul style="list-style-type: none"> • Identify Disaster Prone area in the district. • Prepare a Deployment Plan for the Police force, based on the needs of the most vulnerable areas. • Ensure that a sufficient number of 	<ul style="list-style-type: none"> • Dispatch Police to systematically identify and assist people and communities in life threatening situation. <ul style="list-style-type: none"> • Designate an area, within Police Station to be used as help line centre for public. 	<ul style="list-style-type: none"> • Provide guards wherever needed particularly for staging area of cooperative food etc stores and distribution centers. • Provide convoys for relief materials.

	<p>police force is available for responding to the disaster situation.</p> <ul style="list-style-type: none"> • Establish coordination with the State Armed Police and Defence and Home Guards. • Check the wireless communication network, and secure additional wireless sets for deployment during a disaster. • Installation of radio communications at District Control Room, Control room at affected site, Departmental Offices within the District & Division. • Keep the police vehicles and other modest transport in readiness for deployment of the police. • Call for emergency meeting to take stock of the situation. 	<ul style="list-style-type: none"> • With the assistance of health professional, help injured people and assist the community in organizing emergency transport of seriously injured to medical treatment centers. Ensure that the police stations with staff are functioning in disaster situation. • Assist and encourage the community in road-cleaning operation. 	<ul style="list-style-type: none"> • Evacuation will be ordered by Deputy Commissioner, Addl. Commissioner and Superintendent of Police. • Assist and encourage the community in road-cleaning operation. • Assess and Identify road for following conditions/facilities one Way, Blocked, Alternate route, Overall Traffic Management, Other access roads. • Provide security arrangements for visiting VVIPs and VIPs. • Assist district authorities to take necessary action against Hoarders, Black Marketers and those found manipulating relief material. •
<p>EE- RWSS</p>	<ul style="list-style-type: none"> • When early signs of distress appear in any part of the district, EE RWS&S will submit a special situation update to DM indicating the position in respect of Water and Sanitation preparedness in the district. • Will inform all concerned RWS&S- JEs/AEs of blocks and Panchayats to review essential emergency stocks and contingency plans to be able to respond in a timely manner. • Upon receipt of early warning signals from State, he must start the monitoring of all water and sanitation infrastructure in the affected parts of the 	<ul style="list-style-type: none"> • Will ensure supply of clean drinking water to affected areas. Will ensure transportation of water with minimum wastage. • Will ensure supply of water purification installations, mobile systems, halogen tablets etc. for providing clean drinking water • Will ensure that special care is taken of women with infants and pregnant women. Will ensure that sewer pipes and drainage are kept 	<ul style="list-style-type: none"> • Must launch necessary awareness campaigns on safe water handling practices, environmental sanitation and individual hygiene along with hardware provision. • Will visit as many areas as possible to have first-hand information of the situation. Will keep District Collector and E-in-C/ CE, RWS&S informed daily about the action taken by him in his area. Local MLA, MP and other

	<p>District.</p> <p>Will be in constant touch with the local IMD and other agencies in the district for information on impending disaster.</p>	<p>separate from drinking water facilities.</p> <p>Will ensure availability of adequate number of toilets to prevent further contamination of water sources.</p>	<p>community leaders must be informed on measures taken by RWS&S / PHED for an effective disaster response.</p>
EE- Irrigation	<ul style="list-style-type: none"> When early signs of distress appear in any part of the district, EE Irrigation will submit a special situation update to DM indicating the position in respect of Irrigation preparedness in the district. Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to irrigation and also whether alternate source of H2O within the district. Prepare a contingency plan for the maintenance and repairs of Bundhs and embankments. Identify Bundhs, which are critical for disaster protection and control. Review and update precautionary measures and procedures. 	<ul style="list-style-type: none"> Will ensure availability of adequate number of tool kits to prevent any damage during disaster. Provide special attention to those places where the Bundhs were breached and repaired during the last floods/disaster last year. These are the Bundhs, which will be threatened first during the disaster. Deployed adequate team in the most vulnerable areas. 	<ul style="list-style-type: none"> Undertake channel improvement for rivers and nalas to the extent possible. Undertake de-silting / cleaning of Nalas and canals to improve the flow of water. Supply the essential tool kits and protection material at critical places for emergency repair and construction. Organize round the clock inspection and repair of equipments.
DAO- Agriculture	<ul style="list-style-type: none"> Depute one responsible officer to DEOC. Inform the farmers regarding dos and don'ts. Check and procure the materials which are required after the disaster. 	<ul style="list-style-type: none"> Mobilize the resources as per the need to the affected areas. Estimate the requirements of the seeds and material required to mitigate the loss. 	<ul style="list-style-type: none"> Quantify the losses of the crops. Take Measures to recoup the crop loss. Assist farmers to sow the less time period crop to recover the loss. Execute the schemes to eliminate the drought effect.
EE- Rural Works	<ul style="list-style-type: none"> When early signs of distress appear in any part of the district, EE Rural Works will submit a special situation update to DM indicating the position in respect of rural works preparedness in 	<ul style="list-style-type: none"> Will ensure availability of adequate number of tool kits to prevent any damage during disaster. Provide special attention to 	<ul style="list-style-type: none"> Carry out the detail technical assessment of the affected areas and prepare the recovery plan. Repair and reconstruction of the

	<p>the district.</p> <ul style="list-style-type: none"> • Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to rural areas. • Ensure community involvement in disaster preparedness. 	<p>those places which were most vulnerable areas during disaster last year.</p> <ul style="list-style-type: none"> • Deployed adequate team in the most vulnerable areas. <p>Ensure the rural communication system and shelter management process during disaster.</p>	<p>buildings and roads.</p> <ul style="list-style-type: none"> • Construct temporary shelters in the affected areas.
EE- Public Works	<ul style="list-style-type: none"> • Conduct HRV analysis of PWD of the district. • Based on HRV analysis, prepared Contingency Action Plan for the Department. • All personnel required for disaster management should work under the overall supervision and guidance of DEOC. • All officers (technical officers) should be notified and should meet the staff to review emergency procedures. • Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. <p>Maintain all the highways and access roads, which are critical from the point of view of supplying relief.</p>	<ul style="list-style-type: none"> • Carry out route opening by removing debris on the road. • Provide a work team carrying emergency tool kits, depending on the nature and extent of the disaster, essential equipments to the disaster spot. • If people are evacuating an area, the evacuation routes should be checked and people assisted. <p>Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground during disaster.</p>	<ul style="list-style-type: none"> • Undertake repair of all paved and unpaved road surfaces including edge metalling, pothole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions. • Undertake construction of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for flood victims. • As per the decisions of the District Control Room, undertake construction of temporary structures required, for organizing relief work and construction of relief camps, feeding centres, medical facilities, cattle camps. • An up-to-date report of all damage and repairs should be kept in the district office report book and communicate the same to the District Control Room.
DTO-Telecom	<ul style="list-style-type: none"> • Communication establishment with District and Block/ Tahasil control room and departmental 	<ul style="list-style-type: none"> • Where Disaster strikes with/ without early warning signals, TSPs 	<ul style="list-style-type: none"> • If required portable / vehicle mounted / air-transportable BTSs / BSCs

	<p>officers within the division.</p> <ul style="list-style-type: none"> • An officer to be appointed as nodal officer • Standby arrangements for temporary electric supply or generators. • Inspection and repair of poles etc. • Identification of materials required for response operations. <p>All staff informed about the disasters, likely damages and effect</p>	<p>shall immediately assess damage to their network and deploy Rapid Damage Assessment Team & Disaster Response Task Force Teams (DRTF) with required inventory to provide emergency communication to priority callers like police, Fire, Medical, civil defense, Red Cross, Army, financial institutions, NGOs, all officers and staffs engaged in restoration of telecommunication services, etc</p> <p>A control room will be setup at the state HQ / nearest to affected area, as the case may be, and made operational under control of TERM cell of affected area.</p>	<p>with backhaul on satellite media may be installed by TSPs.</p> <ul style="list-style-type: none"> • Nodal officer of TSPs of affected telecom circle level shall report to concerned DDG (TERM), DoT (Chairman of STDCC) in that circle, for sharing information and coordination related matters. • TERM units of DOT shall be the single nodal point in the disaster region where representatives of TSPs shall also be present to coordinate and oversee communication restoration efforts • All the affected areas and infrastructure will maintained immediately to make sure the effective communication after disaster for quick response.
<p>CDVO</p>	<ul style="list-style-type: none"> • Disseminate the alert to all concerned. • Arrangement of medicine, first aid kits & teams. • Mobile veterinary units for inaccessible pockets. • Identifying & shifting patients requiring intensive care to safer places. • Supply of medicines pre- positioning of veterinary teams to vulnerable areas. • Vaccination for prevention of communicable diseases. • Measures to disinfect drinking water. 	<ul style="list-style-type: none"> • Mass Causality management units & Triage. • First aid centres • Mobile veterinary unit. • Measures to shift patients to VD. • Additional laboratories. • Carcass disposal team & units. 	<ul style="list-style-type: none"> • Post Disaster Disease surveillance system. • Special attention to vulnerable section. • Networking with & promote treatment with NGO (JK Trust). Carcass disposal.

<p>RTO/MVI</p>	<ul style="list-style-type: none"> Disseminate the alert to all concerned staff. Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District control room. Issue standing instructions to the State transport department for providing buses for evacuation and relief. Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. 	<ul style="list-style-type: none"> Provide requires vans and ambulances for mobile health and animal husbandry teams for immediate response during disaster. Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management. Fill department vehicles with fuel and park them in a protected area. 	<ul style="list-style-type: none"> Providing vehicles for communication and relief. Provide ambulances to rural areas for bringing affected people to hospitals after disaster.
<p>DFO-</p>	<ul style="list-style-type: none"> Conduct HRV analysis of Forest of the district. Based on HRV analysis, prepared Contingency Action Plan for the Department. All personnel required for disaster management should work under the overall supervision and guidance of DFO. <p>All district level officials of the department would be asked to report to the DFO when disaster occurs.</p>	<ul style="list-style-type: none"> Allow the transportation of fodder from forest areas, when the fodder is not freely available. Evacuate the people and animal under the forest areas to a safest place. Cut down the most vulnerable trees near the residential areas. Provide wooden poles and bamboo for temporary shelter. 	<ul style="list-style-type: none"> Ensure Plantation to maximum possible extent. Ensure supply of wood for disposal of dead bodies. Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.
<p>Railways</p>	<ul style="list-style-type: none"> Overall coordination with the district administration for disaster response. Disseminate the alert to all concerned staff. Call for emergency meeting to take stock 	<ul style="list-style-type: none"> Activate Search & Rescue Arrange temporary shelters Mass Casualty Management units &Triage 	<ul style="list-style-type: none"> Providing necessary information to public. Clearing the railway line blockages and restoration of the

	<p>of the situation. Develop a strategy and objectives.</p> <ul style="list-style-type: none"> • Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to railway lines. 	<ul style="list-style-type: none"> • First Aid Centers • Medical surgical teams • A control room will be setup at the district HQ / nearest to affected area, as the case may be, and made operational under control of TERM cell of affected area. 	<p>communication system.</p> <ul style="list-style-type: none"> • Providing relief line to the vulnerable areas after disaster. • Special attention to vulnerable section.
EE- Electricity	<ul style="list-style-type: none"> • Conduct HRV analysis for the department of the district. • Based on HRV analysis, prepare Contingency Action Plan of department of Power Supply. • All personnel required for disaster management with work under the overall supervision and guidance of responsible officer. • Establish radio communications with State Emergency Operation Centre, Divisional Commissioner, District Control Room and departmental offices within District/Division. After receiving alert warning, immediately undertake following inspection: High tension lines, Towers, Sub-stations, Transformers, Insulators, Poles and other equipments. 	<ul style="list-style-type: none"> • Instruct district staff to disconnect the main electricity supply for the affected area. • Dispatch emergency repair groups equipped with food, bedding, tents, and tools. • Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. • Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, etc. Provide information to the people about the state of power supply. It is one of the most important sources of information. 	<ul style="list-style-type: none"> • Ensure that the Power Supply department to make alternate arrangements of emergency supply for the following offices from time of receipt of districts: Hospitals, Public Health Departments, Dy. Commissioner Office, District EOC, Sub-Divisional EOC, site Operation Centres. Police Stations, Telecommunications buildings, Meteorological stations. Irrigation Office. • Hire casual labourers on an emergency basis for clearing of damaged poles and salvage of conductors and insulators. • Begin immediate repair/ reconstruction.
EE - PHED	<ul style="list-style-type: none"> • When early signs of distress appear in any part of the district, EE PHED will submit a special situation update to DM indicating the position in respect of water supply preparedness in the district. • Prepare and update the disaster risk map of 	<ul style="list-style-type: none"> • Will ensure availability of adequate number of tool kits to prevent any damage during disaster. • Provide special attention to those places where the water supply were breached and repaired during the 	<ul style="list-style-type: none"> • Supply the safe drinking water at the affected areas immediately after the disaster. • Maintenance of Water works immediately after the disaster. Cleaning the sewerage system with

	<p>the district. The map should show the vulnerability and risks of the critical infrastructure related to water supply and public health.</p> <ul style="list-style-type: none"> • Prepare a contingency plan for the maintenance and repairs water pipe systems. • Identify vulnerable areas, which are critical for disaster protection and control. • Review and update precautionary measures and procedures. 	<p>last disaster last year.</p> <ul style="list-style-type: none"> • Deployed adequate team in the most vulnerable areas. • Opening the blockage of sewerage and sewage system during disaster to control the disease and epidemics. 	<p>adequate disinfection to prevent disease and epidemics.</p>
<p>DEO- School & Mass Education & DEO - Higher Secondary Education</p>	<ul style="list-style-type: none"> • Conduct HRV analysis of schools of the district. • Based on HRV analysis, prepared Contingency Action Plan for the Department. • All personnel required for disaster management should work under the overall supervision and guidance of the DEO. • All officers (technical officers) should be notified and should meet the staff to review emergency procedures. • Obtain IEC materials posters, Pamphlets, simple tips on do's and don'ts in different disasters. • Conduct awareness generation activities systemically in the whole school targeting different classes and also staffs and teachers. • Assists in organization of the evacuations drills for various hazards. 	<ul style="list-style-type: none"> • Duck cover and hold first sign of earthquake move away from buildings. • Assist the evacuation teams in evacuation of the school buildings. • For a chemical hazard assist the warning team in disseminating the required safety tips to the entire school. Ensuring the schools becomes the shelter houses with adequate nos of equipments during the disaster. 	<ul style="list-style-type: none"> • Dissemination of information on do's and don'ts so that the situation doesn't worsen. This can be done in the coordination with the warning and information dissemination teams. • The damaged building and infrastructure should repair immediately after the disaster. • The relief lines should be measured from the school building after the disaster.

10.7 Format for First Information Report (FIR)

On occurrence of Natural Calamity

(To be sent to Special Relief Commissioner, Orissa within maximum of 18 hours of occurrence of calamity)

From: District: _____ Date of Report: _____

To,

The Special Relief Commissioner, Odisha
State Emergency Operation Centre (SEOC),
Rajiv Bhawan, Ground Floor, Unit-5, Bhubaneswar
Fax No: 0674-2534176, E-mail: relief_sr@yahoo.com/src@ori.nic.in

- a) Nature of Calamity
- b) Date and time of occurrence
- c) Affected area (number and name of affected Blocks)
- d) Population affected(approx.)
- e) Number of Persons
 - Dead
 - Missing
 - Injured
 - Animals
 - Affected
 - Lost
- f) Crops affected and area (approx. in hect.)
- g) Number of houses damaged
- h) Damage to public property
- i) Relief measures undertaken in brief
- j) Immediate response & relief assistance required and the best
- k) logistical means of delivering that relief from State/National
- l) Forecast of possible future developments including new risks
- m) Any other relevant information

Authorized Signatory
District Emergency Operation Centre (DEOC)
District: - _____

NB: The Districts will submit a detailed report on each of the above points as soon as possible after submission of the above First Information Report (FIR).

10.8 Daily Status Report on Relief/ Restoration Measures Undertaken By Departments**1. Health Department.**

- Medical Relief Centres Opened-
- Mobile teams deployed-
- Wells disinfected-
- ORS distributed-
- Halogen Tablets distributed-
- Minor Ailment Treated-

2. R.D. Department.

- Mobile vans deployed-
- Water tanker deployed-
- ORS Powder distributed-
- Halogen Tablets distributed-
- Water pouches distributed-
- Bleaching powder distributed-
- Sintex Tanks available-
- Tube wells disinfected-

3. FS & CW Department

-Qtls. Chuda, Qtls gur supplied to Blocks
(Qty .in quintals)

District	Chuda	Gur

- Qtls of rice has been allocated to the Districts mentioned below

Blocks**Quantity allocated (in quintal)****Total:****4. Fisheries & A.R.D. Department**

- Animals vaccinated-
- Animals treated-

Damages to Roads/River Embankments**1.R.D. Department.**

Roads damaged-
CD/Breach occurred-
Breach closed-
Building damaged-
Building collapsed-
Pipe water supply affected-
Tube Wells affected-

2.Works Department.

Roads damaged-
Breach occurred-
CD works damaged-
CDs washed away-
Breach closed-

3.W.R Department.

Breach occurred-
Breaches closed-

Breach closing works in progress

Chapter 14

Rehabilitation & Restoration: -

Rehabilitation and restoration come under recovery phase immediately after relief and rescue operation of the disaster. This post disaster phase continues until the life of the affected people comes to normal. This phase mainly covers damage assessment, disposal of debris, disbursement of assistance for houses, formulation of assistance packages, monitoring and review, cases of non-starters, rejected cases, non-occupancy of houses, relocation, town planning and development plans, awareness and capacity building, housing insurance, grievance redress and social rehabilitation etc.

The district is the primary level with requisite resources to respond to any natural calamity, through the issue of essential commodities, group assistance to the affected people, damage assessment and administrating appropriate rehabilitation and restoration measures.

The District Disaster Management Authority reviews the relief measures submit financial requisition to the state Govt. under SDRF & NDRF. The requisition must reach the SDMA & SRC office in the prescribed format as detailed below for smooth & quick processing.

14.1 Standard Operating Procedure: Restoration & Rehabilitation (The list is Indicative & may be extended further as per need & requirement)

Table-14.1

Name of the Department	Normal Time
Collector/ADM / Emergency Officer	<ul style="list-style-type: none"> • Restoration of Critical Infrastructures to bring situation to normalcy • Ensure Restoration of roads & channels, Communication network, Electricity & Energy • Ensure health in the affected areas • Adopt sustainable mitigation measures in the restoration activities
CDMO	<ul style="list-style-type: none"> • Carry out Disease surveillance measures to check epidemic prone diseases • Dis-infection of drinking water & measures for health & hygiene • Rehabilitation of deprived & destitute • Carry out Trauma & Psycho-social counselling
Superintendent of Police (SP)	<ul style="list-style-type: none"> • Security arrangements for relief materials in transit and in camps etc. • Senior police officers to be deployed in control rooms at district levels. • Deploy personnel to guard vulnerable embankments and at other risk points. • Arrangement for the safety and emergency traffic management. • Coordinate search, rescue and evacuation operations with the administration. • Maintenance of law and order in the affected areas. <p>Assist administration in taking necessary action against hoarders, black marketers etc.</p>
EE- RWSS	<ul style="list-style-type: none"> • Immediate restoration of the drinking water. • Monitoring of water quality and determination of the chlorine residual in public water supplies. • Damage assessment and take actions for long term safe water system in the vulnerable areas. <p>Repair and reconstruction of the drinking water supply, sanitation and sewerage systems.</p>
EE- Irrigation	<ul style="list-style-type: none"> • Assessment and restoration of the damaged infrastructures. • Safe guard agriculture by making temporary restoration arrangements to the affected irrigation sources. • Construction of dams, check dams and irrigation/drainage canals for long term irrigation purpose. <p>Suggest measures for strengthening the river banks and canal bunds to avoid breaches.</p>
DAO- Agriculture	<ul style="list-style-type: none"> • Quantify the losses of the crops and the measures to be taken to recoup the same- Crop loss should be properly estimated with agriculture, Revenue and Statistical staff to quantify the loss. • Assist the farmers to sow the less time period crop to recover the loss- The field functionaries should be engaged to assess the area for taking contingent crop inteh input subsidy . • Execute the schemes to eliminate the drought effects- Short duration paddy/Maize/Biri/Arhar crop should be taken

	<p>up to indemnify crop loss.</p> <p>Provide suitable technical device to the vulnerable cropped area- CM Package and any other departmental schemes for flood and drought effected area should be taken up to mitigate the loss .</p>
DDH - A&FE	<ul style="list-style-type: none"> • Quantify the losses of the crops and the measures to be taken to recoup the same. • Assist the farmers to sow the less time period crop to recover the loss. • Execute the schemes to eliminate the drought effects. <p>Provide suitable technical advice to the vulnerable cropped area and farmers.</p>
EE- Rural Works	<ul style="list-style-type: none"> • Carry out the detail technical assessment of the affected areas and preparation of recovery plan • Construct the temporary shelters in the affected areas • Repair and reconstruction of the damaged roads and buildings. <p>Creation of alternate road network connects vulnerable areas and selected nodal centres.</p>
EE- Public Works	<ul style="list-style-type: none"> • Sanction and entrustment of temporary restoration works. • Install adequate road signs to guide and assist the drivers. • Immediate restoration of the affected infrastructure i.e. roads, bridges, lifeline buildings etc. • Assessment of damages and reporting in higher authorities and preparation of its estimations. <p>Creation of reliable road networks to serve as access to temporary transit and relief camps and medical facilities for disaster victims.</p>
DTO-Telecom	<ul style="list-style-type: none"> • Quick assessment of damages to communication network. • Immediate restoration of temporary communication facilities. • Ensure all communication equipment installed at DEOC. • Adopt sustainable measures to protect telecom infrastructure in the damage prone areas. <p>Bring normalcy in the affected area and development of capacities.</p>
CDVO	<ul style="list-style-type: none"> • Carry out out Disease surveillance measures to check epidemic prone disease. • Disinfection drinking water and measures for health & hygiene of livestocks. • Rehabilitation of deprived and destitute livestock. <p>Carry out Treatment and extension programme.</p>
RTO/MVI	<ul style="list-style-type: none"> • Assist in transportation of the reconstruction materials. • Restoration of transportation facilities. • Rectification of hazard prone zones and adopt risk coverage. • Enforcement of traffic rule and road safety standards in affected areas. <p>All bus depots should be equipped with emergency communication equipments.</p>

DFO-	<ul style="list-style-type: none"> • Assessment of the affected areas and preparation of recovery plan and implementation. • Improvement of the Vegetation coverage and Biomass production to meet the multiple community need like food, fuel wood, fodder etc. • Regeneration of degraded village Common Property Resources like village forest, waste land through the gap filling and block plantation of multipurpose tree species • Strengthening of the community based organizations like VSS through various training, exposure, orientation/ sensitization and ensures the involvement of the local community in joint forest management for regeneration, protection, etc. • Fair Collection and marketing of the NTFP products. <p>Ensure restricted grazing of the cattle herd in the forest area to protect the natural regeneration of the forest ecosystem.</p>
Railway	<ul style="list-style-type: none"> • Rapid access to the site of the accident. • Effective site management by making best use of on-board and locally available resources. • Quick extrication of victims and speedy transportation of victims to hospitals. • Proper communication system both for assisting the stranded passengers as well as provide timely information to the media.
EE- Electricity	<ul style="list-style-type: none"> • Disconnect electricity after receipt of warning. • Attend sites of electrical accidents and assist in undertaking damage assessment. • Stand-by arrangements to ensure temporary electricity supply. • Inspection and repair of high tension lines /substations/transformers/poles etc. • Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems. • Restore electricity to the affected area as quickly as possible. <p>Replace / restore of damaged poles/ salvaging of conductors and insulators</p>
EE – PHED	<ul style="list-style-type: none"> • Constitution of teams for damage assessment and immediate restoration of drinking water. • Monitoring of water quality and determination of the chlorine residual in public water supplies. • Appropriate actions for long term safe water system in the vulnerable areas. • Repair and reconstruction of the drinking water supply systems. • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and during disaster in particular.

DEO- School & Mass Education & DEO - Higher Secondary Education	<ul style="list-style-type: none"> • Identification and preparation of list of children affected in disaster • Damage assessment for repair and reconstruction of school infrastructures. • Department and the field level institution prepare contingent Action Plan for reconstruction. • Damaged buildings, hostels should be assessed and take steps for restoration of education.
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14.2 Damage & Loss Assessment

Table-14.2

Sector	Damage in Physical terms	Requirement of funds for repair of immediate nature	Out of (3) amount available from annual budget	Out of (3) amount available from related schemes/ programmes / other sources	Out of (3) amount proposed* to be met from SDRF/NDRF as per the list of works indicated in the revised items & norms
1	2	3	4	5	6
Roads & Bridges					
Drinking water Supply works (Rural)					
Drinking water Supply works (Urban)					
Irrigation					
**Power					
Primary Health Centres					
Community assets in social sectors covered by Panchayats					

14.6 Animal Husbandry (Replacement of Animals)

Table-14.6

Name of the Block	No of Livestock / Birds lost				Poultry Birds	No of animals qualifying for relief grant (i.e., subject to ceiling of 3 large milch animal or 30 small milch animals or 3 large draught animal or 6 small draught animal per household				Expenditure incurred (Milch animals @ Rs.30,000 for large animal , Rs.3000 for small animals & Draught animals @ Rs 25000 for large animal, Rs. 16,000 for small animals)				Poultry @ 50/- per bird subject to a ceiling of assistance of Rs.5000/- per beneficiary household.	Total expenditure (11+12 +13+14 +15)
	Milch Animal		Draught Animal			Milch Animal		Draught Animal		Milch Animal		Draught Animal			
	Buffalo/ Cow	Sheep/ Goat	Camel/ Horse/ Bullock	Calf/ Donkey / Pony		Buffalo/ Cow	Sheep/ Goat	Camel/ Horse/ Bullock	Calf/ Donkey / Pony	Buffalo/ Cow	Sheep / Goat	Camel/ Horse/ Bullock	Calf/ Donkey/ Pony		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Contd..

14.8 Assistance for provision for temporary accommodation, food, clothing and medical care

Sl. No	Name of the district	Average No. (in a day) of relief camps	Average duration of operation of relief camps	Average No. of people accommodated per day in the relief camps	Expenditure incurred on (Rs. in lakh)				
					Temporary accommodation	Food	clothing	Medical care	Total expenditure
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
19									
Total									

14.9 Extent of Damage Due to Natural Calamities

District:

Nature and period of natural Calamity:

Sl.	Item	Details
1.	Total number of Blocks in the district	
2.	Number and names of Blocks affected	
3.	Number of villages affected	
4.	Population affected (in lakh)	
5.	Total land area affected (in lakh ha.)	
6.	Cropped area affected (in lakh ha)	
	i) Total cropped area affected	
	ii) Estimated loss to crops (Rs. in lakh)	
	iii) Area where cropped damage was more than 33%	
7.	Percentage of area held by SMF	
	i) In the State as a whole	
	ii) In the affected districts	
8.	House damaged	
	a) No. of houses damaged	
	i) Fully damaged pucca houses	
	ii) Fully damaged kutch houses	
	iii) Severely damaged pucca houses	
	iv) Severely damaged kutch houses	
	v) Partly damaged houses (pucca + kutch)	
	vi) No. of huts damaged	
b) Estimated value of damage to houses (Rs. in lakh)		
9.	No. of human lives lost	
	No. of persons with grievous injuries	
	No. of persons with minor injuries	
10.	Animal lost	
	a) No. of big animals lost	
	b) No. of small animals lost	
	c) No. of poultry (birds) lost	
11.	Damage to public properties	
	a) In physical terms (sector wise details should be given – e.g. length of State roads damaged, length of districts roads damaged, length of village roads damaged, No. of bridges damaged, No. of culverts damaged, No. of school buildings damaged etc.)	
	b) Estimated value of the damage to public properties	
	Estimated total damage to houses, crops and public properties	

14.10 Format for working out the requirements under the head of repair of damaged infrastructure of immediate nature
(Rs. In lakh)

Sector		Damage in physical terms	Requirement of funds for repair of immediate nature	Out of (3), amount available from annual maintenance budget	Out of (3), amount available from related schemes / programs/ other sources	Out of (3), amount proposed to be met from CRF/NC CF in accordance with list of works indicated in the Appendix to the revised items and norms
Roads & Bridges	PWD Roads	No. of breaches- Length of Road damaged – No. of culverts damaged – No. of culverts washed away –				
	Rural Roads	No. of Roads damaged – Length of Road damaged – No. of breaches – No. of CD/Bridge damaged– No. of CD/Bridge washed away –				
	Urban	Length of				

	Roads	drain damaged – Length of Road damaged No. of culverts damaged –				
	Panchayat Roads	No. of Roads damaged – Length of breaches – Length of Road damaged – No. of culverts damaged – No of culverts washed away				
	River/Canal Embankment Roads	No of Roads damaged in river embankments – Length of Road damaged in river embankments No of Roads damaged in canal embankments – Length of Road damaged in canal embankments				
Drinking Water Supply	Rural Water Supply	No of Tube wells damaged – No of platforms damaged – No. of Rural pipe water supply system damaged				
	Urban Water					

	Supply					
Irrigation	River Embankment	No of breaches – Length of breach in Km – No of partial damage -				
	Canal Embankments	No of breaches – Length of breach in Km – No of partial damage -				
	M I projects	No of Minor Irrigation projects damaged -				
	Clearance of Drainage channels	Length of drainage channels congested with vegetative materials –				
Primary Education	Primary School Buildings	No of Primary School buildings damaged -				
PHCs	PHCs	No of Primary Health Centres damaged -				
Community assets owned by Panchayats	Community Halls	No of Panchayat Ghar/Community Hall damaged -				
	AWW Centres	No of Anganwadi Centres damaged -				
Power	Electrical lines	No of Primary sub-stations damaged –				

		33 KV lines damaged – 11 KV lines damaged – Distribution Transformers damaged – LT lines damaged –				
Total						

Chapter-15

Recovery: -

A series of long-term activities framed to improve upon the repaired activities in the Reconstruction & rehabilitation phase are covered under Recovery phase. Recovery includes all aspects of mitigation and also incorporates the continuation of the enabling process, which assists the affected persons and their families not only to overcome their losses, but also to achieve a proper and effective way to continue various functions of their lives. The Recovery process is therefore a long-term process in which everyone has a role – the Government including the PRI members, NGOs and especially the affected people, their families and the community.

- Preparation of Recovery plan for displaced population, vulnerable groups, environment, livelihoods
- Organise initial and subsequent technical assessments of disaster affected areas and determine the extent of recovery works necessitated in addition to reconstruction & rehabilitation works.
- Evaluate the extent of works under SDRF/NDRF & other sources (damaged infrastructures)
- Explore opportunities for external aids like (International Agencies / Civil Society / Corporate Sector)
- Allocate funds for the stabilisation of the repaired & reconstructed infrastructure.
- Integrate Climate change & Disaster Risk Reduction features in the recovery programmes

The DM & Collector will be the co-ordinator of all Recovery activities in the District. The role of the DM & Collector will be to:

- Generally, monitor the management of the recovery process;
- Ensure implementation of the recovery plan by line departments, blocks
- Effective service delivery minimising overlap and duplication;

The Recovery process consists of several related activities such as:

- Damage assessments.
- Debris clearance, removal and its environmentally safe disposal.
- Restoration and even upgrading utilities including communication networks.
- Re-establishment of major transport linkages.
- Temporary housing.
- Detailed building inspections
- Redevelopment planning.
- Environmental assessments.
- Demolition.
- Reconstruction.
- Integrating Disaster Risk Reduction (DRR) into various development initiatives.
- Financial management.
- Economic impact analyses.

Major steps of the community/ individual recovery process to ensure livelihoods of the affected people and the key processes involved are:

- Livelihood Recovery Plans such as Land/ Non-Land based Activities, On-Farm/ Off-Farm Activities, Skill Development Activities, etc.
- Wage Employment Programmes, Food for Work Programmes, Infrastructures Development Programmes.
- Proper utilisation of various Government/ Non-Government Schemes.
- Specially design new schemes for rehabilitation and reconstruction activities.
- Long term projects for sustainable development of the vulnerable areas.

Livelihood Recovery Plan:

Considering the poverty profile of Odisha, convergence of different flagship schemes holds great significance in addressing poverty and unemployment. All the major anti-poverty Schemes envisage convergence of some kind. But two of them, critical in the context of poverty reduction, are NRLM and MGNREGS. NRLM needs MGNREGS because of better inclusion of the poorest, strengthening organizations of poor, enhanced livelihood opportunities and bringing the right perspective into intervention. Economic activities taken up by the SHGs often require certain backward linkage. If basic assets for taking up of NRLM can be created under MGNREGS, it might be of help to the groups and their members. In the other side, MGNREGS needs NRLM for stronger access to entitlements, participation of poor women, more effective decentralized planning and execution. The assets created under MGNREGS can be better utilized when there is value addition done by other schemes of Line Departments. The value addition of MGNREGS works can further strengthen the livelihoods base and diversify the livelihoods of poor communities. In this context a strategy has been implemented in Paikmal block of Bargarh district with an aim to integrate both the MGNREGS and NRLM and bring synergy among other schemes of Line Departments to enhance the livelihood security of the rural poor. Based on the learning from the implementation, possible livelihood models have been framed for implementation in other districts.

Agri based Livelihood

The majority of works highlighted in MGNREGS guidelines are related to land, water and tree and also it is mandated in the guidelines to take up at least 60 % of works under MGNREGs which are linked to agriculture and agriculture allied activities. Hence the livelihood models described in this guideline are largely on agriculture and agriculture allied activities.

Agriculture

Study shows that wherever MGNREGS works are being implemented effectively it is generating multiple environmental benefits, leading to improve water availability, soil fertility and increased crop production. The works are also helping reduce soil erosion and increase area under plantations. Hence it is the top most agenda of the State to

devise strategy to improve the agriculture production and productivity. To take up agriculture-based livelihoods following processes have to be adhered to;

1. Map the cultivable and the potentially cultivable land in the area through social and resource mapping (through GPDP using IPPE exercise). This exercise will help in identifying the type of lands available in the area like waste land, fallow land etc. These lands may be owned by individual households or regularised under Forest Rights Act (FRA).
2. The lands need to be shaped and treated under a scientific plan to ensure that there is no water logging and there is optimum utilization of available water. This will be done through MGNREGS. This will not only ensure that the beneficiaries get wages but also enables them to develop their own assets, thus triggering further sources of employment.
3. Required topographical survey may be carried out before planning and executing land development works. Land development work should be planned and carried out on watershed approach i.e. ridge to valley approach. In construction of bunds and earthen check dams, earth should be taken from upstream side and at least 3-4 feet away from foot of the bund. If common land is not used for crop then the best way to develop is by constructing contour bunds to conserve rain water and soil which is economical, productive and durable.
4. Without provisioning water sources, the lands will become again unproductive. Hence through MGNREGS percolation tanks, canals, check dam, diversion wire etc. could be taken up in the area. Minor Irrigation department can take up irrigation works. Lift Irrigation can also be taken up by Odisha Lift Irrigation Corporation.
5. The next step is optimum utilization of water by encouraging the use of sprinklers, drip irrigation, plastics mulching for horticulture water conservation etc. which can be provided by Agriculture Department.
6. The individual households whose lands are developed under MGNREGS or other schemes could take up farming practices in the developed lands. The SHGs promoted by NRLM can take up collective farming through taking the land on lease basis. The working capital for farming could come up from NRLM.
7. Loans are available to farmers through several institutions and programmes, such as cooperative banks, lead bank district credit plan, Kisan credit cards (introduced by GoI to provide affordable credit to farmers), Primary Agriculture Credit Societies (PACS) and Large Area Multipurpose Cooperative Societies (LAMPS) for SC/ST farmers. However, there is a need to rationalize their borrowing, both in terms of the extent of finance required and the cost of that loan.
8. Agriculture department has provisions of providing seeds (maize, paddy, black gram etc) to the farmers on subsidy. Agriculture/Cooperation department gives subsidy on fertilizers to the poor farmers. Besides, MGNREGS has recently focussed more on taking up vermi compost and NADEP compost as bio fertilizers. These can also be planned in the area.
9. Activities and funds of several Departments can be converged to ensure good storage facilities.

MGNREGS could provide storage centres and food grain storage can also be constructed by Food Supplies and Consumer Welfare Department/ Cooperation Department.

10. NRLM has to take a lead role in providing market related information to the farming communities. The thrust activity of increase in production and crop selection has to include the component of marketing and an investment in building the capacity of farmers to market effectively. They should be exposed to all aspects of this operation (such as the possibility of buy-back arrangements with the private sector). Farmers should have established linkages with wholesale *mandis*, corporate farming, cold storages, private sector, processing plants and retail outlets.

The framework

Sl	Scheme	Department	Activities	Cost Norms
1	MGNREGS	PRD	1. Irrigation Channel 2. Dug Well 3. NADEP composting 4. Vermi composting 5. Liquid Bio Manures 6. Land Development with field bunding 7. Creation of water bodies including farm pond, de-silting of ponds, canals, defunct water bodies	1. Irrigation channel as per estimated cost 2. Dug Well up to Rs.1.60 lakh 3. Nadeep compost Rs.14,000/- (26:74) 4. Vermi compost-Rs. 20,000/- (24:76) 5. Liquid Bio Manure-Rs.2000/-(30:70) 6. Land development as per estimate 7. As per estimate
2	PMKSY	Watershed Development Mission	1. Lining 2. Inlet 3. Outlet 4. Silt trap 5. Adjustable gates etc.	1. Material cost beyond the specified limit, i.e., 40% in the MGNREGA
3	Jalanidhi	Agriculture	1. Dug well 2. Bore well Shallow Tube Well (Individual farmer and	1. 75% of the project cost subject to a limit of Rs.75000/- 2. 75% of the project cost subject to a limit of Rs.50,000/- (excluding cost of electrification). In addition 75% of Genset /electrification cost subject to a limit of Rs.50000/-(for

			cluster of farmers)	energisation) 3. 50% subsidy of the cost or maximum Rs. 20,000. In addition, in case of cluster of 10 nos. or more STWs the cost of electrification will be borne by the Government subject to a ceiling of Rs 4.00 lakh per Cluster
4	Biju Krushak Kalyan Yojana (BKKY)	Health	Smart card for health treatment (Those families not covered under RSBY are to be benefitted with Rs 1 lakh for medical treatment both in Govt. & private hospital)	Health benefit up to 1 lakh
5	Infrastructure development for post harvesting	Agriculture/ PRD	Concrete Drying-cum- threshing Floor	20x20 meter community harvesting yard free of cost
6	Pradhan Mantri Crop insurance	Agriculture and Cooperation	Insurance facilities for the farmers cultivating paddy, ground nut, Ginger, Turmeric, Cotton etc.	The premium rate is 2% of total sum assured amount for Kharif crop, 1.5% for Rabi crop and 5 per cent for annual commercial horticulture crops
7	State Plan	Agriculture	1. Promotion SRI method 2. Soil Test 3. Technology Transfer Demonstration,	Incentive of Rs. 4,700 per hectare to the farmer who adopting SRI method
			5. Incentive to the farmers 6. Promotion of Improved Agronomic Package and Practices 7. Extension Services Supply of Pump Set	

8	Farm Mechanisation		Subsidy Assistance on Tractor, Power Tiller, Combined Harvester • etc.	As per scheme guidelines
9	NFSM		Improve Package and Practices of Rice, Wheat, Pulses and Core Cereals	As per scheme guidelines
10	OLM	PRD	Promotion Producers Groups, Forward and Backward Linkages, bank linkage	As per the approved proposal

Horticulture

MGNREGS funds shall be leveraged with various schemes of horticulture department for utilisation of both short term and long-term benefits of the farmers. Water sources such as community tank, Farm Pond including 30x40 models and 5 % models shall be created in the land of small and marginal farmers under MGNREGS. Land development activities including field bonding and field levelling shall also be taken under MGNREGS. Large Scale plantation projects on mango/cashew and coconut would be planned under MGNREGS. Besides, organic farming shall be taken up in saturation mode through promotion of Vermi Composting and Nadeep composting. It is non-negotiable that the beneficiary of such projects shall have a job card and shall be from the categories specified in Para 5 of the Schedule I of the MGNREGA. Plantation programme for Medium Density Mango Plantation/ cashew/Coconut should be integrated under MGNREGS depending upon agro-climatic feasibility.

Onion cultivation, Betel leaf and floriculture shall be taken by utilizing the funds available under State Plan. Intercropping shall also be promoted in various fruits orchards.

For encouraging farmers to establish fruit orchard on their private holdings, subsidy shall be provided for Mango/Cashew/Guava/Litchi/pomegranate/ Lime Plantation /Lime Plantation. Labour cost of plantation, watch and ward etc. shall be met from MGNREGS funds. Oil palm area in the state needs to be expanded in potential pockets. Under Special programme on Oil Palm Area Expansion, Pump sets to be supplies to the farmers in the areas where transitional water bodies available. Bore well would only be provisioned for irrigation where ground water table in high. Drip and sprinkler irrigation shall be ensured under PMKSY.

Minimum one godown/ storage centre for agriculture producers per block shall be constructed by leveraging the funds of MGNREGS and NHM. Technical support on production of bio- fertilizer and vocational training on various horticulture operation shall be extended under NHM.OLM shall mobilize the farmers into producers" groups and provide necessary training

and marketing supports with the technical support of Horticulture department.

The framework

SI	Scheme	Department	Activities	Cost Norms
1	MGNRGS	PRD	<ol style="list-style-type: none"> 1. Farm Pond including 30x40 and 5 % model 2. Community Tank 3. Land Development 4. Nadeep Compost 5. Vermi compost 6. Medium Density Mango Plantation/ cashew/Coconut plantation 	<ol style="list-style-type: none"> 1. According to size of land 2. As per size of the land 3. According to size of land 4. Nadeep compost Rs.14,000/- (26:74) 5. Vermi compost-Rs. 20,000/- (24:76) 6. As per areas of plantation
2	State Plan	Horticulture	<ol style="list-style-type: none"> 1. Supply of onion seeds 2. Intercropping in fruits orchards 3. Mango, coconut, K. Lime and cashew plantation 4. Floriculture 5. Betel leaf cultivation 	As per provision of the scheme
3	PMKSY		<ol style="list-style-type: none"> 1. Drip irrigation and sprinkler irrigation 	As per provision of the scheme
4	Special programme on Oil Palm Area Expansion		<ol style="list-style-type: none"> 1. Oil palm cultivation 2. Supply of diesel/electric pump sets 3. Bore well 	
5	Mission on Integrated Development of Horticulture (NHM)		<ol style="list-style-type: none"> 1. Mango/Cashew/Guava/ Litchi/pomegranate/ Lime Plantation 2. Post-harvest storage and structures 3. Technical supports on Vermin compost and Nadeep compost 4. Vocational Training on horticulture 5. Plastic Mulching 	As per provision of the scheme

Dairy

Dairy sector is one of emerging entrepreneurship activities in Odisha to engage more and more rural youths and women SHGs. This sector can be taken up by the SHGs under convergence mode through MGNREGS and other schemes. Under MGNREGS the infrastructure required for cattle like shed, floor of the cattle shed, urine tank etc can be taken up. A tank constructed for urine collection could be used to make liquid manure. A fodder trough if constructed under MGNREGS would facilitate proper feeding of cattle and minimize waste of fodder. The area of the cattle shed floor for 6 herds of cattle and a fodder trough and a cattle urine collection tank shall be taken up for health and hygienic of the cattle under MGNREGS. An Azola Pit for cattle feed supplement can also be taken up under MGNREGS. Creation of awareness among farmers, breeding of local cows by using superior dairy breeds, supply of fodder seeds/ planting material, fodder demonstration, supply of chaff cutters and organizing health camp etc shall be ensured under Integrated Livestock Development Programme (ILDP), Kalyani. Subsidised balanced calf feed (4 to 28 months), insurance and deworming, vaccination under Calf Rearing programme and subsequently establishment of Small Dairy Unit could be promoted under Dairy Entrepreneurship Development Scheme (DEDS). Special initiatives for fodder development to be integrated with this initiative by leveraging the funds available under Minikits Programme on fodder Crops or Addl. Fodder Development Programme in drought prone areas. Superior dairy breed shall be protected National Livestock Mission as a safety net to farmer against any loss in dairy enterprise. Technology Knowledge and Strategic Partnership with OUAT, NDRI, Karnal and IVRI, Izatnagar, Bareilly is a must for animal health and livestock production.

Skill Development Programme

Without doubt training provides increased employment opportunities. Today, even entry level roles in many industries require base level skill. By completing a training course, employment opportunities become wider. Thus, there is a need for a clear focus on improving the employability of rural youth of the district as agriculture failed to observe the educated youth which constitutes a major proportion of the district workforce.

Chapter- 16

Financial Arrangement: -

16.1 National Disaster Response Fund (NDRF)

The National Disaster Response Fund (NDRF) has been constituted by the Government of India as per the sub-sections (1) of section (46) of Disaster Management Act, 2005 and recommendation of the 13th Finance Commission. NDRF has been constituted by replacing the National Calamity Contingency Fund (NCCF). It is administered by the National Executive Committee (NEC).

In the event of a calamity of a severe nature when the State Disaster Response Fund (SDRF) is insufficient to meet the relief requirements, additional central assistance is provided from NDRF, after following the laid down procedure. The State Government is required to submit a memorandum indicating the sector-wise damage and requirement of funds. On receipt of memorandum from the State,

- An Inter-Ministerial Central Team is constituted and deputed for an on the spot assessment of damage and requirement of funds for relief operations, as per the extant items ad norms.
- The report of the Central Team is considered by the Inter-Ministerial Group (IMG) / A Sub-committee NEC constituted under section 8 of DM act, 2005, headed by the Home Secretary.
- Thereafter, the High-Level Committee (HLC) comprising of the Finance Minister, the Agriculture Minister, the Home Minister and the Deputy Chairman, Niti Ayog considers the request of the State Government based on the report of the Central Team recommendation of the IMG thereon, extant norms of assistance and approves the quantum of assistance form NDRF.
- This is, however, subject to the adjustment of 75% of the balance available in the State's SDRF for the instant Calamity.

(Please refer page no. ___ of Volume-II for NDRF Items and Norms)

16.2 State Disaster Response Fund (SDRF)

As per the provisions of Disaster Management Act, 2005 sub-section (1)(a) of Section (48) and based on the recommendation of the 13th Finance Commission, the Government of Odisha has constituted the State Disaster Response Fund (SDRF) replacing the Calamity Relief Fund (CRF). The amount of corpus of the SDRF determined by the 13th Finance Commission for each year the Finance Commission period 2010-15 has been approved by the Central Government. The Central Government contributes 75% of the said fund. The balance 25% matching share of contribution is given by the State Government. The share of the Central Government in SDRF is released to the State in 2 installments in June and December respectively in each financial year. Likewise, the State Government transfers its contribution of 25% to the SDRF in two installments in June and December of the same year.

Ministry of Home Affairs, upon being satisfied that exigencies of a particular calamity so warrant, may recommend an earlier release of the Central share up to 25% of the funds due to the State in the following year. This release will be adjusted against the installments of the subsequent year.

As per the Guidelines on Constitution and Administration of the State Disaster Response Fund (SDRF) laid down by the Ministry of Home Affairs, Government of India, the SDRF shall be used only for meeting the expenditure for providing immediate relief to the victims of cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst and pest attack. The State Executive Committee (SEC) headed by the Chief Secretary SEC decides on all matters connected with the financing of the relief expenditure of immediate nature from SDRF.

(Please refer page no. ___ of Volume-II for SDRF Items and Norms)

16.3 Chief Minister Relief Fund (CMRF)

Chief Minister's Relief Fund aims to provide assistance to calamities and in distress condition, to indigent persons suffering from critical ailments and to undertake charitable activities for public welfare.

16.3.1 Cases Eligible for Assistance under CMRF

16.3.1.1 Poor and persons in distress: Relief to the poor, including grant and aid (financial or otherwise) to persons in distress.

16.3.1.2 Aged, differently able, orphans, AIDS affected: Assistance for the relief and rehabilitation of the aged, differently able' orphans, HIV/AIDS affected persons/families and those otherwise differently able or incapable of earning their livelihood, by grant and aid (financial and otherwise) and / or maintenance, establishment and support of institutions and homes for the benefit of such persons.

16.3.1.3 Persons affected by calamities or violence: Assistance for relief & rehabilitation of persons affected by natural or man-made calamities, communal violence', naxal violence or public disorder of a serious nature or any other calamity' affecting a family or a community, which deserves extreme compassion and not covered under any existing assistance scheme of State/central Government.

16.3.1.4 Assistance for Rural Development: Financial assistance out of CMRF may also be considered to undertake, promote, aid or otherwise support rural development including any programme for promoting the social and economic welfare of the public in any rural area either directly or through an independent agency following due procedure.

To assist more number of deserving person and for better utilisation of the Chief Minister's Relief Fund, the State Government have delegated powers to the Collectors for sanction of assistance out of CMRF so as to extend such assistance to the deserving persons immediately at the time of their need.

16.4 Release of Funds to Departments and Districts:

Funds required towards pure relief to affected persons / families for natural calamities in shape of emergency assistance, organizing relief camp / free kitchen / cattle camp, agriculture input subsidy and other assistances to affected farmers, ex-gratia as assistance for death cases, grievous injury, house building assistance, assistance to fisherman / fish seed farmers / sericulture farmers, assistance for repair / restoration of dwelling houses damaged due to natural calamities are administered through the respective collectors.

Part funds towards repair / restoration of immediate nature of the damaged public infrastructure are released to the Departments concerned. On receipt of requisition from the Collectors / Departments concerned, funds are released after obtaining approval / sanction of S.E.C. However, funds towards pure relief are released under orders of Special Relief Commissioner / Chief Secretary and the same is placed before the State Executive Committee in its next meeting for approval. To save time, Collectors have been instructed to disburse the ex-gratia assistance from the available cash and record the same on receipt of fund from Special Relief Commissioner.

16.5 Damage Assessments and Report after Flood/Cyclone

Private properties and properties of Government under different Departments are damaged by high floods and cyclones. As per para-75 of Orissa Relief Code, the Collector shall undertake assessment of damages to private properties as well as properties of Government. This assessment shall be done quickly soon after the abatement of flood in the prescribed formats prescribed in Appendix- X of Orissa Relief Code.

16.5.1 Submission of preliminary damage report (Para-76 of ORC)

1. The Collector as well as the district level officers under each Department of Government shall immediately after assessment of flood damage forward a copy of their report to their immediate Head of Department. The district level officers may also supply reports to the Collector.
2. The Heads of Departments after necessary scrutiny shall forward their reports to their respective Departments of Government with copy to Special Relief Commissioner, not later than two weeks from the date of abatement of flood.
3. The Special Relief Commissioner shall compile the State report and shall furnish the consolidated preliminary report to the Revenue Department within a week of the receipt of the reports from the Heads of Department.
4. The preliminary flood damage report should be prepared as accurately as possible, as the relief measures, if any, are to be based on the merit and statistical data of that report.

16.5.2 Submission of final flood damage report (Para-77 of ORC)

The concerned Heads of Departments as well as the Collector shall take immediate steps to compile the final report on flood/cyclone damage in the formats prescribed in Appendix- X soon after submission of the preliminary report.

Accidental errors, clerical mistakes, shortcomings, if any, noticed should be rectified in the final report. The final report shall be made available to Special Relief Commissioner as soon as possible and not later than one month from the date of abatement of flood.

On receipt of the reports from the different sources, Special Relief Commissioner shall forthwith compile the State report and furnish the same to the Revenue Department.

16.6 Central and State Government programmes and Schemes on Natural Calamities

Mainstreaming Disaster Management in development planning is the most critical component to mitigate disaster risks. That's why it's important to make note of financial resources which are used in the implementation of such programmes and schemes which can lessen the risk from disasters by reducing vulnerability. It is also crucial to build communities resilience to deal with them. Moreover, as mandated by Ministry of Finance & Ministry of Home Affairs on 01st and 03rd June, 2014 respectively, 10 % flexi-fund within the centrally sponsored schemes (CSS) to be utilised, inter alia for mitigation / restoration activities in the event of natural calamities in the sector covered by CSS. Thus, relevant Central Government and State Government funded schemes are identified which are crucial to build over resilience of communities in the context of the district.

Different State and Central Government Schemes and Programms

Table-16.1

Sl No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1	National Agriculture Insurance Scheme (NAIS)/ Rastriya Krishi Bima Yojna (RKBY)	Crop Insurance	Agriculture Insurance Company of India (AICI)	To protect the farmers against the losses suffered by them due to crop failures on account of natural calamities, such as droughts, floods, hailstorm, storms, animal depredation, etc.
2	Janashree Vima Yojna	Life Insurance	Life Insurance Corporation Of India	The objective of the scheme is to provide life insurance protection to the rural and urban poor persons below poverty line and marginally above the poverty line.
3	Odisha Tribal Empowerment & Livelihood Programme Plus	Tribal Empowerment	ST&SC	To create disaster resilient social capital and provide livelihood support to the tribal and vulnerable

	(OTELP Plus)			community.
	DAMAN (Durgama Anchalare Malaria Nirakaran)	Health	Health & FW	To control malaria in inaccessible areas to reduce disease and fatality.
	Biju Krushak Kalyan Yojana (BKKY)	Health Insurance for Farmers	Agriculture & FE and Health & FW	To provide financial support and low cost health care services to farmers family to reduce health hazards.
	Pradhan Mantri Ujjwala Yojana (PMUY)	Women Health	PR & DW	To provide free LPG connection to BPL women for smoke and pollution free environment and protect women health.
	Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)	Training & Skill Development	MoRD	To develop skills and productive capacity of the rural youth from poor families.
	Finance Commission Grant	Infrastructure Development	PR & DW	10% of the fund will be dedicated to disaster related projects.
	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	Life Insurance	Bank	To provide insurance protection and risk coverage on accidental death and disability.
	Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	Life Insurance	Bank	To provide insurance protection on death.
	Pradhan Mantri Awas Yojana (PMAY) - Housing for all by 2022	Housing	PR & DW	To construct disaster resilient houses and vulnerable risk reduction.
	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Rural Employment	PR & DW	To reduce economic vulnerability and creation of rural infrastructures.
	National Health Mission (NHM)	Health	Health & FW	To provide accessible, affordable and quality health care services to all to reduce health hazards.
	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Rural Road	PR & DW	To create all weather road connectivity to remote and unconnected villages.

	Sarva Shiksha Abhiyan (SSA)	Education	School & ME	To provide education and school infrastructures at the infrastructure gap village/ habitations.
	Gopabandhu Gramin Yojana (Bijli, Sadak & Pani)	Water, Electricity & Road	PR & DW	To provide connectivity to critical gape of infrastructures in the habitations to reduce vulnerability.
	Biju Setu Yojana (Rural Bridges)	Bridges	Rural Development	To provide an effective all weather road connectivity in remote areas & to reduce vulnerability.
	Integrated Child Protection Scheme (ICPS)	Child Protection	W&CD &MS	To provide a safe and secure environment for overall development of the children and Protection of child rights.
	Mission Shakti	Women Empowerment	W&CD &MS	Capacity building of women on adaptation and risk reduction behaviours through self-help institutions.
	Scheme for Legal Services to Disaster Victims through Legal Services Authorities	Social Justice	NALSA	To provide legal aid to the victims of disaster. To help the victims and the administration for reducing risk and assisting them to adopt disaster mitigation policies and strategies.
	Pradhan Mantri Fasal Bima Yojana (PMFBY)	Crop Insurance	Agriculture Insurance Company of India (AICI)	To protect the farmers against the losses suffered by them due to crop failures on account of natural calamities, such as droughts, floods, hailstorm, storms, animal depredation, etc.
	Pradhan Mantri Gram Sinchai Yojana (PMGSY)	Irrigation	AC & FW	Irrigating the field of farmers and improving water use efficiency and Enhance crop per drop by implementing water-saving technologies and precision irrigation.
	Sansad Adarsh Gram Yojana (SAGY)	Infrastructure Development	MoRD	Development of model villages and Social, cultural, economic and infrastructure developments in the villages.
	Swachh Bharat Mission (SBM)	Hygienic Environment	MoDW&S	For clean and hygienic environment and Protection health.

	Soil Health Card Scheme	Soil Productivity	AC & FW	Complete evaluation of the quality of soil and Corrective measures to improve productivity.
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16.7 Roles of District Planning committee on financial outlay on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

The 73rd and 74th amendments of the Constitution provided an impetus to the process of decentralized planning having mandated devolution of powers to Panchayati Raj Institutions (PRIs) at village, block and district levels. Article 243ZD of the Constitution mandated the setting up of District Planning Committees (DPCs) for consolidating plans prepared by Panchayats and Municipalities in the district into District Plans. In view of this, Government of Odisha has ensured the formation of DPCs through the Odisha District Planning Committee Act, 1998 and subsequent Odisha District Planning Committee Rules, 2000 which have been enacted for effective planning process at the district level. Subsequently, DPMU, Bargarh have been set up in the district for preparing the Comprehensive District Plans as per the Department Letter No.12774/dated.03.11.2015 of Planning and Coordination Department, Govt. of Odisha. The vision documents 2020 of Bargarh stressed upon interventions to mitigate the critical risks. Further, under Section 38 (2) (e) of the DM Act, the State Government is to ensure that the integration of measures for prevention of disaster or mitigation have been incorporated by the departments of the Government of the State in their development plans and projects. In this backdrop, the DDMP, 2022 focused on mainstreaming Disaster Risk Reduction (DRR) in development programs.

Role of DPC for mainstreaming Disaster Risk Reduction (DRR):

While the issues of climate change cripple formulated climate action in the district, mainstreaming climate change adaptation has emerged as a new area of focus for building resilience of vulnerable communities. Climate adaptive planning spans across departments (agriculture, water resources, rural development etc.) and vertical bureaucratic levels (district, block and village). Climate Change Adaption (CCA) i.e. adjustments in human and natural systems in response to actual or expected climatic variation, with a view to moderating harm or exploiting beneficial opportunities, is an area of growing concern for the district. The myriad and uncertain effects of a changing climate pose significant risks for development and achievement of the Sustainable Development Goals (SDGs) at district level. Following roles of DPC would be articulated to be reduced the disaster risk at various levels.

- Make certain that all the development programmes and projects are designed with evident consideration for potential disaster risks and to resist hazard impact in the district.

- Make certain that all the development programmes and projects do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment
- Make certain that all the disaster relief and rehabilitation programmes and projects are designed to contribute to developmental aims and to reduce future disaster risk.

Procedure/Methodology for Mainstreaming of DRR and CCA in District Level Planning

Project appraisal

Consideration of disaster risk concerns as part of the project appraisal process is an essential step in:

- Ensuring that development gains from individual projects are sustainable;
- Ensuring that potential disaster risk reduction benefits of both dedicated risk reduction projects and other development projects are optimized; and
- Highlighting related issues of responsibility and accountability.

Disaster risk concerns should be considered in all components of project appraisal analysis – financial, economic, environmental, social, institutional and technical – reflecting the fact that vulnerability to natural hazards is complex and multi-faceted and so needs to be viewed from all angles, incorporated into broader planning tools, such as logical framework analysis and results-based management frameworks, and reflected in the development of monitoring and evaluation indicators.

Monitoring and evaluation of projects from DRR/CCA angle:

The capacity to monitor and evaluate DRR initiatives, generate hard evidence on related inputs, outputs, results and impacts and learn lessons for the future is an essential component for mainstreaming. In practice, the use of benchmarks and indicators to monitor and evaluate DRR initiatives is not very common anywhere. This partly reflects an inherent challenge relating to the fact that the success of a DRR initiative is ultimately measured in terms of something – a disaster or a particular form or level of loss – that does not happen as a consequence of a hazard event. There are further complications relating to the fact that a particular hazard event may not occur over the life

of a project, implying that the benefits and impact of related DRR activities may not be directly measurable within the normal evaluation timeframe. Moreover, no two hazard events are ever the same, implying that the precise nature and scale of any benefits may vary between events. Nevertheless, DRR initiatives can and should be monitored and evaluated. Problems relating, for instance, to potentially lengthy time lags in the realisation of benefits can be overcome to some extent by using leading or process indicators that provide a measure of progress towards the achievement of project objectives.

16.8 Fund provision for disaster preparedness & capacity building

Though the district does not have separate capacity building funds provisions to face various types of disaster, but training programmes have been conducted for government personnel and community during drought, flood and heat waves by various departments as per the need of the districts and instructions communicated by the Govt. from time to time. Agriculture, Horticulture, ARD, Forest and PR departments organizes training in drought like situation. To tackle heat wave condition department like Health, PR, RWSS and PHED, H&UD, Veterinary and forest organizes training programmes to minimize the effects of heat waves and causality. Funds of the existing programme (funds allocated under CB components or contingency funds) have been used for this purpose

The disaster preparedness and capacity building activities are carried out through periodic Mock Drills, Trainings, Workshops and Awareness Building Programmes as per the proposal in the previous chapters. During the year the funds provision for such capacity building and disaster preparedness programmes shall be proposed to meet out of the State Disaster Response Fund (SDRF).

16.9 Draft National Disaster Mitigation Fund

Chapter 17

Lessons learnt and Documentation: -

Personnel involved in the exercise have to draw up on knowledge of best practices and the resource available to them. Information and training on ways to better respond to and mitigate disaster is important since training for field functionaries is an integral part of capacity building and trained personal respond much better to different disasters and appreciate the need for preventive measure.

Capacity building for effective disaster management therefore needs to be grounded and linked to the community and village level responders on the other hand. It should not be limited to the personal and the personal involved in the disaster management, but should focus on building of knowledge, attitude and skills of a community to cope with the efforts of disaster. Identification of training volunteers from the community towards first response measures as well as mitigation measure is an urgent imperative.

Creating awareness through disaster education and training and information dissemination are necessary steps for empowering the community to cope with disaster. Community based approach followed by most of the NGOs and CBOs should be incorporated in the disaster management system as an effective vehicle of community participation. In facts NGOs have been requested to work with panchayat to evolve Model Panchayat level sustainable development and disaster management plan.

Within the vulnerable community, there exist groups that are more vulnerable like women, children, aged, infirm and physically challenged people who need Special care and attention especially during the disaster situation. Efforts are required for identification of such vulnerable groups and providing special assistance to them in terms of evacuation, relief, aid, medical attention to them in disaster situation.

To active participation in the communities in disaster risk assessment and reduction measure is being looked upon as an imperative in disaster mitigation planning and implementation. Vulnerable communities adopt to hazardous situation by means o indigenous coping strategies. The community situation is to formalise such efforts through codification and analysis of the same and ways to develop inherent capacities through policy intervention.

There is lesson learned in one community which can be studied and applied to another community setting. There have been multiple damaging events in the past, as show in the

database, but drought and heat waves are two important region-specific disasters and most of the population is aware of the existence of past events. The following section described the past experiences of the district in managing drought, Flood and heat waves in the district.

DROUGHT, 2015

The district has experienced 10 major droughts during the last 50 years. The 2015 drought, one of the severest in the district that affected 24.91 per cent of its geographical area, 39.94% of the total cultivable land and the livelihoods of around 10 lakhs people and 3 lakhs cattle in the district. The district took proactive steps by forming teams comprising of field level officials of Revenue, Agriculture, Cooperation and Water Resources Departments and conducted sensitization and counselling camps at Gram Panchayat and village level in areas experiencing moisture stress. The district has created large water tanks through MGNREGA in every affected Gram Panchayat, wherever feasible. Large scale development of private lands of the affected farmers were taken up as a component under MGNREGS as an additional relief measure. Strict mechanism was established to monitor the money lending activities in rain deficit areas. Moreover, collective efforts were made to ensure assistance to the farmers as per the announcement made in the Drought Package declared by the Government on 15.10.2015.

FLOOD, 2014

All the blocks were affected during the flood 2014, among them Sohela, Bijepur & Barpali were severely. About 5 lakhs people were affected. Total 816 Nos. of villages are affected. To manage the flood situation people of 15 villages had been evacuated to temporary shelter places. Relief was being administered among the 10211 nos. of affected people. 30 free kitchen centres opened in 6 blocks, 1 NAC & 1 Municipality and cooked food supplied to 9023 persons. 10 persons are loss their life. 1819 families are assisted with clothing & utensil. ODRAF unit from Bolangir had been deputed for rescue operation.

HEAT WAVE, 2010

In the year 2010 the District faced an unprecedented heat wave situation, as a result of which 11 persons lost their lives. Though extensive awareness campaigns have largely reduced the number of casualties during post 2010 period, still a good number of casualties are being reported each year which have put the administration in very difficult situation. Insufficient requirement of funds needed for preparedness in taking adequate ameliorative measures was the major reasons of high rate of causality during 2010.