2022

District Disaster Management Plan
Jharsuguda, ODISHA

DDMP 2022

District Disaster Management Authority (DDMA)
Jharsuguda

OSDMA

District Disaster Management Plan

2022

Jharsuguda, Odisha

Prepared By

District Disaster Management Authority

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Available at http:// Jharsuguda.nic.in/ddmp-2022

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Abbreviations

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

Chapter – 1

Introduction

Introduction

UndertheDMAct2005,itismandatoryonthepartofDistrictDisasterManagementAuthority (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

Jharsuguda District lies in the close proximity to the Chhatisgarh and Jharkhand state. It is mostly affected by Drought, Heat waves. Nevertheless, the traditional Housing structures especially in rural areas are more susceptible to fire accident. So, the disaster management planning of this district may be referred to the inevitable plan, strong administration unit of linkup between the top & bottom administrative unit and to the grass root level transmission link. It is no doubt that the formulation of disaster plan is for preparedness and commitment for its positive implementation at the hour of crisis. Disaster management and disaster operations in the district are consistent with the Disaster Management Strategic Policy Framework. This is achieved by:

- To identify the areas vulnerable to major types of the hazards in the district.
- To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its effects.
- To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
- To enhance disaster resilience of the people in the district by way of capacity building.
- Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
- Manage future development to mitigate the effect of natural hazards in the district.
- To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
- To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.
- To adopt disaster resilient construction mechanism in the district by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development.
- To make the use of media in disaster management.
- 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 Authority for DDMP: Approval & Implementation ofDDMP

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 discussed the modalities and seeks views for preparation of a holistic plan in the meeting of the DDMA held in the month of March and to prepare the plan by the end of April 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: Evolution, Procedure and Methodology to be followed for preparation ofDDMP-

The present document is prepared to help the district administration for effective response during any type of disaster as the district is prone to natural as well as industrial and man-made disasters. Cyclone, flood are the major Natural Hazard and industrial, chemical, fire, rail/ road accidents etc. are the main man-made disaster of the district. The present document is consisting of various facts which have been collected from various sources including line departments. This document contains various chapters and each chapter has its own importance. The plan consists Hazard & Risk Assessment, Institutional Mechanism, ResponseMechanism, Standard Operating Procedure, inventory of Resources etc. Hazard & Risk Assessment is done on the basis of past disaster data & is collected from all departments.

The lessons learnt from Very Severe Cyclonic Storm- Phailin occurred on 12th Oct'2013 provides necessary impetus for preparation of this year plan.

1.4 Stakeholders and their responsibilities

1. 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.
2. Othertechnicalinstitutions,community atlarge,localself-governments,NGOsetc.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. Tofunctionasaleaderoftheteamandtakeappropriateactionstosmoothentheresponse 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.

Community Groups and Volunteer Agencies:

i. Local community groups and 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.

Citizens:

It is the duty of every citizen 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

The DDMP prepared by the DDMA, Jharsuguda with the support and assistance from all the line departments of the districts. All the line departments provided data for the development of DDMP and its submission to the OSDMA in the scheduled time.

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 districts demographics or hazard or threat profile.

vi. The enactment of new or amended laws orordinances.

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 updatedorreaffirmed.Theupdatesorreaffirmeddocumentmayalsobeusedtosummarizethe accomplishments of the past year and help the administration to prioritize mitigation goals for the nextyear.

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Chapter – 2

District Profile

History & Location: Jharsuguda was a Tahasil under the Sambalpur Sadar Sub-division. It was upgraded to a Sub-division in 1979 and was given the status of a district on 1st April 1994.Mineral rich District, Jharsuguda is one of the most industrially developed District of Odisha. Earlier it was a part of Sambalpur District. It was created by amalgamation of the erstwhile Jamindars of Rampur, Kolabira, Padampur and Kudabaga.The Districtissurrounded by Sundargarh District in the North, Sambalpur District in the East, Bargarh District in the Southand Chattisgarh state in the West. Jharsuguda District is situated at adistance of 515 km from Kolkata, 616 km from Nagpur, 48 km from Sambalpur and 372 km from state capital Bhubaneswar. The total geographical area of the district is 2114 sq. km and it occupies 1.36% of the state's area. In order of size, Jharsuguda district occupies 29th position among the 30 districts of the state ofOdisha.

Jharsuguda district is situated between 210 02' 37'' N to 220 00' 32'' N latitudes and 830 31' 12'' E to 840 24' 00'' E longitudes in the north-western part of the state of Odisha. It is surrounded by Sundargarh district in the north, Sambalpur district in the east, Bargarh district in the south and Chattisgarh state in the west. According to the Census of 2011, the district had a population of 5,79,505 out of which 2,96,690 were Males and 2,82,815 were Females. In terms of population, the district occupies 27th position among the 30 districts ofOdisha.

AdministrativeSetup: The Collector and District Magistrate is the administrative head of the district. There is only one Sub-division, Jharsuguda, in the district and a Sub-Collector is in- charge of administration of this Sub-division. For convenience of revenue administration the district is divided into 5 Tahasils, namely Lakhanpur, Jharsuguda, Laikera, Kirimira and Kolabira and each Tahasilare kept in charge of a Tahasildar. Similarly, for carrying on developmental activities smoothly, the district is divided into 5 CD Blocks, namely, Lakhanpur, Jharsuguda, Kirimira, Laikera and Kolabira and each CD Block is kept under the administrative control of a Block Development Officer.Under each CD Block there are several Gram Panchayats consisting of a number of villages. The list of CD Blocks with number of Gram Panchayats and villages is given below.

TABLE 1.1: Block Wise Set up of Gram Panchayats and Villages

Sl No.	Name of CD Block	No. of Gram Panchayats	No. of Villages
1.	Lakahanpur	33	146
2.	Jharsuguda	17	73
3.	Kirimira	08	42
4.	Laikera	11	45
5.	Kolabira	09	47
TOTAL		78	353

Climate & Rainfall: The District of Jharsuguda is characterized by a hot dry summer. The temperature in the month of May is 46 degree at the maximum. The average rainfall of the District is 1500 millimeter. From April to August the wind blows from south and southwest whereas from September onwards wind blows from

NorthWest.

Major portion of the land area covering hilly region has a radish stony soil. The plain regionhavingbrownishblacksoilissuitableforgrowingpaddyandvegetables.Thesoilofthe riverbanks and delta area is sandy loom suitable for paddy, sugarcane and groundnut cultivation. Some part of the Lakhanpur block is specially known for ginger cultivation which it exports in tones to othercountries.

NormalRainfall : 1362.8 mm. Rain

Recording Station : 05

Sl. No.	Year	Average Rainfall (in mm)
1	2003	1652.68
2	2004	1222.8
3	2005	1316.8
4	2006	1257.8
5	2007	1684
6	2008	1653.6
7	2009	1124.4
8	2010	1007
9	2011	1430.9
10	2012	1800.89
11	2013	1291.93
12	2014	1372.67
13	2015	1496.9
14	2016	1110.92
15	2017	1392.10
16	2018	1359.66
17	2019	1823.76
18	2020	1874.98
19	2022	1099.36

Topography: The district is characterized by gently undulating topography. The district can be marked into two natural physiographic divisions as follows:

(a) Northern Jharsuguda Plateau

The entire Jharsuguda district except Laikera block comes under this physiographic division. The average height of this division ranges between 500 feet to 750 feet above the mean sea level. This division has no high hills but the terrain mostly comprising of high lands is quite undulating draining intotheRiverIbwhichisthemostimportanttributaryoftheRiver Mahanadi in the Hirakud catchment. The blocks included in this division are Kolabira, Kirmira, Jharsuguda and Lakhanpur. Many of the streams of this division directly drain into Hirakud reservoir. Lakhanpur block which forms the northern boundary of Hirakud reservoir has a number of such streams running in north-southdirection.

(b) Eastern KuchindaPlain

Located on the north of the high hill ranges of Deogarh district and well-drained by the river Bhedenandhertributariesthisisaflatterrain,all most plain with high level and are quite extensive in nature. This physiographic division comprises of the whole of Laikera block of Jharsuguda district and major parts of Kuchinda and Bamra blocks of adjacent Sambalpur district. The proportion of flat upland in this division is

rather very high. In Laikera block it is as much as 75 per cent of the total cultivated area which is the highest among all the blocks of thedistrict.

River System: All rivers of Jharsuguda district, such as Ib, Kelo, Basundhara and Bheden (Fig-7) Flow from West, Northan East South ward.Bheden (orBonam) isatributary of Ib.River Ib is a major, rain-fed tributary of RiverMahanadi.

Ib river basin: River Ib is one of the largest tributaries of River Mahanadi. It arises in the hills near Pandrapat at an elevation of 762 m in Raigarh district of Chattisgarh. The total length of the river is 251 km. Some of the major tributaries of Ib are Bandajore, Ichhannala, Sapai, Basundhara and Bheden. The Ibriver falls into the Hirakud reservoir from the left bank of River Mahanadi. In fact, several seasonal streams such as Saraswatinalla, Ichhanalla, Bheden, Basundhara, Sapainall as fallin to river Ib. In general,there is always some flow in the river Ib through out the year. However, flow during the summer months can go down to zero during the drought period. Standing water remains available in several deep gorge portions in river Ib. The maximum elevation at the upstream end and minimum elevation at the downstream end of the basin were found to be 1157 m and 157 m , respectively. A barrage project was proposed in the year 2005 on River Ib in the Jharsuguda district. The barrage site is located across downstream of the confluence of rivers Basundhara and Ib, near the village Deogaon of Rajpur GP (Jharsuguda block). The longest earth dam of Asia, the Hirakud Dam, has been constructed on the southern part of Jharsuguda district where all the smaller rivers of the district join with the River Mahanadi. The Mahanadi River system with Hirakud reservoir is the major water body in the district. River Mahanadi with its tributary Ib is the major river flowing through Jharsuguda area. River Mahanadi and its tributaries provide bulk of water supply and carry effluent load from this area. The river system drains into the Hirakud reservoir.

Demography:

Households and its distribution:

		Category		Category				Category	
Sl. No	Total Number of Families/HH	Rural	Urban	SC	ST	OBC	GEN	BPL	APL
1	136061	60.11%	39.89%	25543	41286	25112	44120	77695	35024

Population and its composition:

Sl. No	Population			GEN		SC		ST		OBC	
	T	M	F	M	F	M	F	M	F	M	F
1	579505	296690	282815	146295	121885	52580	52040	88273	88485	15590	14357

- Population density of the district and decadal growth ofpopulation-

Religion wise distribution of Population:

Sl. No.	Total Population	Category				
		Hindu	Muslim	Christian	Sikh	Others
1	579505	89.73	5.78	3.7	0.41	0.36

Age Group

Sl. No.	Total Population	0-5 years	6-14 years	15-59 years	60 years and above
1	579505	64794	75915	418895	19901

Sex Ratio:

1	Sex Ratio (Females per 1000 males):	953
2	Sex Ration(0-6 Years):	943

Literacy Rate:

	Total	Male	Female
Literacy Rate	78.67	86.61	70.73

[Details are at Table No. 1 to 6 of Volume II of the DDMP]

Socio-Economic profile:

The economy of the Jharsuguda District can be judged through its natural resources. The District is rich in minerals like coals, quartzite and fire clay. Besides deposit of limestone, granite, white sand stone and laterite stone are also found in several places of Jharsuguda District that add to economy of the District. Several industrial units like Vendanta Alumina, Bhusan Steel and Power, TATA Refractories are operating in the District that contributes to the economic growth of the District. There are also some major forest products like Kendu leaves, wood, rice and leather that also contribute significantly to the economy of Jharsuguda District.

Workforce participation-

The table below gives a comparative picture of some characteristics of the workers in Jharsuguda district as per Census 2001 and Census 2011.

Sl. No.	**Item**	**Unit**	**Census 2001**	**Census 2011**
1	Total Population	Nos.	509716	579505
2	Total Workers	Nos.	189593	247707
3	Total Workers (Rural)	Nos.	53802	169104

4	Total Workers (Urban)	Nos.	189593	78603
5	Main Workers	Nos.	133148	172069
6	Marginal Workers	Nos.	56445	75638
7	Cultivators	Nos.	42308	40867
8	Agriculture Labourers	Nos.	46074	56809
9	Workers in Household Industry	Nos.	14883	15836
10	Other Workers	Nos.	86328	134195

Though the number of main and marginal workers has increased in 2011 over 2001 Census, the percentage of main workers to total workers has shown a declining trend. The above table also illustrates the fact that the share of cultivators among main workers has declined between 2001 and 2011. There appears to be a shift of main workers away from cultivation related activities. Hence, the workers participation rate acts as an indicator of the dynamics of employment in the district.

Land Holding Pattern:

Sl.	Block	Forest area	Permanent Pasture	Cultural waste	Land put to Non Agril. Uses	Barren land	Current fallow	Other fallow	Net area sown
1	Jharsuguda	5512	636	1937	8450	3570	-	957	19674
2	Lakhanpur	9514	13960	10815	28189	10210	-	1260	24249
3	Kolabira	2069	1286	540	4142	754	-	105	15150
4	Kirmira	1802	817	1240	3373	893	-	326	11155
5	Laikera	1420	3210	613	514	1720	-	569	17555
Total		20317	19909	15145	44668	17147	-	3217	87783

As per 2011 census operational holdings by all social groups are given in Table below:

Category	Numbers	Area in HA
Marginal (<1 Ha)	24309	12375
Small (1-2 Ha)	13059	18078
Semi Medium (2-4 Ha)	5449	15205
Medium (4-10 Ha)	1727	9954
Large (>10 Ha)	524	9085
Total (all categories)	45068	64997

Agriculture:

Agriculture is the main occupation of the rural people of the district, the Economy of the Jharsuguda District is solely an industrial conomy.The scope of public Sector is very vast to provide employment opportunity to a large section of unemployed persons in the district. The economic genesis in Jharsuguda district has brought about by the growth of the large–scale industries centering the Mahanadi coalfields and other large scale and small scale industries.The major crops are Paddy, Pulses, oil seeds and vegetables. According to the data received from the Agriculture department 42.08% (inha) are total cultivable area and 8.09% is total irrigated area (in ha). Block wise details are in the tablebelow.

Sl.	Crop	Net Sown Area	Productio n (in Qtls.)	Consump tion of Seeds (in Qtls.)	Consump tion of Fertilizer s (in Qtls.)	Consump tion of Pesticide s (in Qtls.)	Require ment of Loans (Rs. in Lakh)
1	Paddy (Kharif)	13944	275175	3470.9	1176.92	570	NA
2	Paddy (Rabi)	7477	2496	14.75	90	155	NA
3	Wheat	60	23.75	6	115	2.5	NA
4	Maize	967	62.94	2.01	110	5.6	NA
5	Bajra	NA	NA	NA	NA	NA	NA
6	Ragi	NA	NA	NA	NA	NA	NA
7	Milets	NA	NA	NA	NA	NA	NA
8	Pulses	5952	6.4	185	45	950	NA
9	Oil Seeds	2596	8.55	13.00	75	1530	NA
10	Vegetables	19540	185.25	13.08	130	4800	NA
11	Other Cash crops	1885	95.00	15.00	95	72	NA

Irrigation:

Micro irrigation work was taken up under the scheme National Mission on Micro Irrigation (NMMI), From 2015-16 it is going to be implemented under the scheme PMKSY (Pradhan Mantri Krishi Sinchai Yojana). As this District comes under Non-DPAP Area the provision for subsidy under PMKSY is 45% & 35% for small and big farmers,respectively.At present 188 lift irrigation points are there in the district, Lakhanpur having the highestnumber of lift irrigation i.e., 78 lift irrigation points. 1754 L.I. Points (deep bore well) are there in the district, Lakhanpur having the highest number of 784 L.I. Points (deep bore well). The table below represents the block wise status of L.I.points

Employment and livelihood:

In Jharsuguda district PMKSY and MGNREG SP rogramsarefunctionalatblocklevel. The target of 2017-18 under PMKSY watershed development is around 20000 for daily wage labourers. A cumulative total target for daily wage labourers under MGREGS man-days is 66777 for the five blocks of the Jharsugudadistrict.

Industries and mining:

There are total 17 industries in Jharsuguda district. The detail list is attached below-

List of Industries in Jharsuguda with the land area acquired.

Information on Industries		
Sl. No.	Name of the Industry	Total land acquired (in acres)
1	Action Ispat& Power (P) Ltd.	370
2	Concast Steel & Power Ltd.	195.777
3	Jai Hanuman Udyog Limited.	38.85
4	L N Metallics	29.64
5	M/S Madhab Ispat Ltd.	55.7
6	MCL , Lakhanpur	16279.446
7	MCL, IB Valley	5022.558
8	MCL, Orient Area	8861.897
9	MSP Metalics Limited	126
10	OPGC	2485.25
11	SesaSterelite Ltd.(Vedanta)	4186.207
12	Seven Star Steels Limited	63.04
13	SMC Power & QST Steel Bars	281.56
15	TPSL	192.47
16	TRL Krosaki Refractories Limited	386
17	Ultra tech Cement Ltd.	165.25
	Total	**39833.85**

Mines:

The district is rich in minerals like coal, quartz, quartzite and fire clay. Besides, deposit of limestone, granite, white sand stone and laterite stone are also found in several places. There are 14 coal mines and 2 quartzite mines that are currently in operational status. The detailed list of the working mines in Jharsuguda district is mentioned in Table below-

Sl No.	Ores / Minerals	Name of the Mines	Area (in hectares)	Name of the lessee
1.	Coal	Ib-River Colliery	82.273	Mahanadi Coal fields Ltd.(MCL)
2.	Coal	Ib-Proprty Colliery	270.409	Mahanadi Coal fields Ltd.(MCL)
3.	Coal	Orient Colliery (UG)	487.364	Mahanadi Coal fields Ltd.(MCL)
4.	Coal	New gondhghora colliery	161.103	Mahanadi Coal fields Ltd.(MCL)
5.	Coal	Rampur colliery	1095.698	Mahanadi Coal fields Ltd.(MCL)
6.	Coal	Gandaghora colliery	121.730	Mahanadi Coal fields Ltd.(MCL)
7.	Coal	Orient-III colliery (UG)	601.520	Mahanadi Coal fields Ltd.(MCL)
8.	Coal	Ib block 5th colliery	254.547	Mahanadi Coal fields Ltd.(MCL)
9.	Coal	North–West Block Gandghor	397.733	Mahanadi Coal fields Ltd.(MCL)
10.	Coal	Lilari OCP	204.280	Mahanadi Coal fields Ltd.(MCL)
11.	Coal	Belpahar OCP	1444.053	Mahanadi Coal fields Ltd.(MCL)
12.	Coal	Lakhanpur OCP	2485.000	Mahanadi Coal fields Ltd.(MCL)
13.	Coal	Lajkura OCP	254.54	Mahanadi Coal fields Ltd.(MCL)
14.	Coal	Samaleswari OCP	828.760	Mahanadi Coal fields Ltd.(MCL)
15.	Quartzite	Chhuinpali	102.123	TRL Krosaki Refractories Ltd.
16.	Quartzite	Bhikampali	4.897	OCL India Ltd

The most notable mines of Jharsuguda district are the coal mines which encompass an area of 8689.01 hectares and had a production capacity of 41775566 Million Tonnes (MT) in theyear 2014-15. The other significant mines are the quartz mines spread across an area of 107.02 hectares and had a production to the tune of 16851 Million Tonnes (MT) in the year 2014-15. A total of 24 numbers of mining leases for major minerals are in force in Jharsuguda district, the details of which are statedbelow:

Major Minerals	No. of leases
1.Coal	14
2.Fireclay	05
3.Quartz	01
4.Quartzite	03
5.Red-Oxide	01
Total:	**24**

Minerals like fireclay, quartz and quartzite produced from different mines are being transported to various refractories industries inside the state for manufacturing of refractory bricks.

Mineral deposit of Jharsuguda district is a major source of revenue for the State of Odisha.The assessed mineral reserve of coal in the districtis of 2567.06 Million Tonnes(MT). During the last financial year 2014–15, mining revenue to the tune of Rs.464.73 Crores has been earned by the State Govt. of Odisha primarily from the production of coal and quartzite from the mines of Jharsugudadistrict.

Education:

As per literacy rate of the Jharsuguda Districtis 71.4%.The male literacy rate is 83.04% whereas female

literacy rate is 59.23%. There are numbers of educational institutions in the District like S.M. College Jharsuguda, Women's College Jharsuguda, PKSS College Jharsuguda, L.N.College Jharsuguda, Black Diamond College of Engineering and Jharsuguda Engineering School etc. 83% of villages have primary schools within the village. 91% of villages have ME schools and High Schools within 5kms to the village.Total No. of Children Enrolled, 61451and total dropout is 59 whereas 37 Children Never Enrolled. In the district Total No. of Primary Schools- 375, No. ME Schools-303, No. of High Schools- 107, No. of Teachers- 3486, Teacher Pupil Ratio-1:21, No. of Colleges-17, No. of ITI/ Polytechnic/ Vocational TrainingInstitutes-5.

Health:

According to the AHS 2012-13 the Child Mortality Rate of Jharsuguda district was 42 andthe Maternal Mortality Rate was 234. District average of Institutional delivery in percentage is 99 and immunization status of children below 5 years is 83.2%.According to the records of the CDM&PHO office,the district has recorded highest cases of diarrhea in the last 5years. In2016,20264 cases of diarrhea has been treated and no cases of death due to diarrhea has been found in last 5 years. TB is also a serious health hazard in the district. In last 5 Years 83926 cases of TB has been registered and 60 cases of death due to TB also has been registered. More than this Malaria, Jaundice and Pneumonia are found in the district which is health hazard for thepopulation.

(The detail Health indicator, Major disease cases registered and death due to the diseases are found in the table no 1.33 and 1.34 of DDMP Vol II).

Housing

The housing pattern of Jharsuguda district is different in urban and rural areas. In urban areas more Pucca and semi Pucca houses are found where as in rural areas more Katcha and Semi Pucca houses are found. In urban areas 64% of Pucca and Semi Pucca houses are there where as in rural areas 79% of Semi Pucca and Katcha houses are found.

Electrification

There are five numbers of Sub-Stations in Jharsuguda district. The details are as follows:

a) 132/11 KV Sub-Station atSarasmal

b) 132/11 KV Sub-Station atRemja

c) 132/11 KV Sub-Station atPanchgaon

d) 132/11 KV Sub-Station atRengali

e) 132/11 KV Sub-Station atLaikera.

Out of 353 villages all the 353 villages are partially electrified. The detail table is represented below-

Sl. No.	Name of the Block	Village Electrification				Household Electrification		
		Total No. of Villages	FE-Fully Electrified	PE-Partially Electrified	UE- Un-Electrified	Total No. of HHs	Electrified	UE
1	Jharsuguda	73	0	73	-	18139	16034	2105
2	Lakhanpur	146	0	146		24476	14070	10406
3	Kirmira	42	0	42	-	10482	3793	6689
4	Kolabira	47	0	47	-	12096	4497	7599
5	Laikera	45	0	45	-	12752	8107	4645
6	Total=	353	0	353	0	77945	46501	31444

Drinking water and sanitation

The Status of Drinking water and Sanitation at the district level is as follow. There are 351 villages having access to safe drinking water. There are 6555 functional tube wells, 184 PWS and 172 villages covered till 31st march 2018, as reported by the Executive Engineer Rural Water Supply and Sanitation Division.Total number of households in the district is 86574and 53277 households having IHHL which is 61.53%. There are 20 ODF

villages which is5.69%. Migration:

There is no record of migration as reported by District Labor Officer.

Food security:

As per the information provided by the Civil Supply office there are 147 PDS outlets. Jharsuguda Municipality has 135000 Cold storage capacities in the OSWC. In RMC 35000 Qtls Storage capacity and in FCI 100000 Qtls storage capacity is there.

Food Security (Public Distribution system 144875 households are included. 112313 households are covered under NFSA and 396821 are total number of beneficiaries.

Consumption of rice is 16716.63 Qtls and 3486.42 Qtls in case of wheat. 136 are the total number of PDS outlets in the block. There are 3 storage points which has 155000 Qtls storage capacity.

Social Security: As reported by District Social Security Officer, pension schemes are functional at district level. Window pension, old age pension, Pension for disables are the types of social security provided at district level.14114 males and 21171 females are covered under old age pension scheme.14090 number of widows covered under window pensions. 1737 males and 2605 females are covered under disability pension scheme.

Community/ Social Institutions:

Under Community and Social institutions in Jharsuguda District there are a total of 7462 WSHGs and total numbers of women involved are 77684. A total of 3027 SHGs bank linked in the district. 575 youth clubs and 6723 members are there at the district level. Farmers club and Youth clubs are not so familiar and not found in the urban and rural sector.

Critical infrastructure

Critical Infrastructure includes all the infrastructure available in the district.Infrastructure-like school, colleges, aganwadis, hospitals, veterinary hospitals, roads, bridges, railwaysetc.

Anganwadi centers:

At present there are 957 Anganwadi centers, 771 centers having their own pucca building, 15386 numbers of children between 3 to 6 years are enrolled, 152 children are reported to be malnourished and 6795 are pregnantmothers.

Schools and other EducationalInstitutions

In Jharsuguda District there are 298 primary schools, 288 ME schools, 143 high schools, 4683 teachers, 18:78 is the pupil teacher ratio and 22 colleges functional at present.

Hospitals and Health Centers

At present there are 66 Health Sub Centers at Jharsuguda District. A total number of 16 PHCs, 6 CHCs, 15 Homeopathic and Ayurvedic Hospitals, 14 Private Hospitals, 42 Ambulances and 2 Blood Banks are functional at the district. 63 Number of Doctors, 153 paramedical staffs and 111 ANMs, 629 ASHAs are working for the health program covering the whole district.

Veterinary Hospitals

Sl. No.	Block	Veterinary Hospitals	No. of Doctors	Livestock Aid Centers	No. of Livestock Inspectors	No. of Artificial Insemination Centers	Others (to be specified)

1	Jharsuguda	2	3	10	8	12	0
2	Lakhanpur	3	1	8	4	16	5
3	Kirmira	2	1	2	2	5	1
4	Kolabira	1	0	4	3	5	0
5	Laikera	1	2	8	4	9	0
	Total=	9	7	32	21	47	6

The veterinary hospitals status in the district is as follow. There are 9 Veterinary hospitals, 7 numbers of doctors,32Livestock Aid Centers, 21 No. of Livestock Inspectors, 47 No. of Artificial Insemination Centers are functional at district level. The detail table is indicated below-

There are 119649 cows and Buffaloes, 5529 ships and goats, 6685 draught animals and 25376 quintals of fodder requirement in the district. Thedetail livestock status is presented in the table below-

Sl . No.	Block	Livestock Population				Requirement of Fodder in Qtls.
		Milk Animals		Draught Animals		
		Cow, Buffalo	Sheep, Goat	Camel, Horse, Bullock	Donkey, Pony etc	
1	Jharsuguda	28109	175	10543	NIL	5836
2	Lakhanpur	38467	4838	10514		8000
3	Kirmira	15283	150	11859		3297
4	Kolabira	17594	288	13213		3789
5	Laikera	20226	78	20676		4454
Total=		119649	5529	66805	0	Q,25,376

Police and Fire Stations:

There are 10 police stations in the district. In Jharsuguda PS there are 95 Police personnel. The staff position of 10 Police stations is given in the table below-

Sl. No.	Name of the Block/ ULB	No. of Police Stations	No. of Police Personal
1	Jharsuguda Block/Municipality	Jharsuguda PS	127
2	Jharsuguda Block	Badmal PS	51
3	Kolabora Block	Kolabira PS	28
4	Laikera/Kirmira Block	Likera PS	41
5	Jharsuguda Block Brajarajnagar Municipality	Brajarajnagar PS	31
6	Jharsuguda Block , Brajarajnagar Municipality	Orient PS	33
7	Lakhanpur Block Belpahar Municipality	Belpahar PS	37
8	Lakhanpur Block	Banaharpali PS	23
9	Lakhanpur Block	Lakhanpur PS	26
10	Lakhanpur Block	Rengali PS	34

Cooperative Societies

The Primary Agriculture Cooperative Societies under ARCS, Jharsuguda Circle Jharsuguda: There are 32 Primary Agriculture Cooperative Societies, 56824 farmers, 2009.2 qtls of seeds distributed last year, 73756.5 qtls of fertilizers distributed during last year, 249950 qtls of paddy procured during previous season.

Banks and Post offices

There are 78 Nationalized Banks in Jharsuguda District. 85 Post offices are working successfully in the district. List of Banks are listed below-

a) State Bank of India,Jharsuguda.
b) AndhraBank
c) AllahabadBank
d) U. CoBank
e) UnionBank
f) United Bank of India
g) Bank of India
h) IndianBank
i) Central Bank of India
j) ICICI
k) Oriental Bank ofCommerce
l) Canarabank
m) SyndicateBank
n) HDFC
o) Axis Bank
p) IDBI
q) Indus IndBank
r) VijayaBank
s) Kotak MahindraBank
t) ING VaisyaBank
u) Bank ofMaharashtra

Road and Railway network

There are 78 GPs in Jharsuguda District. 95% of the GPs connected with the Block HQ with all-weather road. 13 % of Villages connected with GP HQ with all-weather Roads. 13% of villages/GPs having bus communication and 49 private buses are operating at present.

Railway network covers 1676mm. JSG is the station code. The railway track isjoining adjacent states like Chhatisgarh, Bihar, Jharkhand and west Bengal. Major stations like Brajarajnagar, Bagdihi are operational in the district. There are 7 local stations where only passenger trains halt forpassengers.

Cyclone and Flood Shelters

There are two multipurpose flood and cyclone centers in the district. Those two are in the Lakhanpur block. Kanaktora and Mahudi are two villages where multipurpose flood and cyclone centers are built for the benefit of pupils residing at flood prone villages.

Rain gauge and Automatic Weather Stations

There are five rain gauge stations installed at 5 block headquarter of Jharsuguda. One automatic weather station installed in the campus of Collect orate Jharsuguda which is maintained by IMD, Jharsuguda.

Chapter- 3

Hazard, Vulnerability and Risk Assessment

A. Major Disasters/ Incidents during2007-2019:

Jharsuguda district is more vulnerable to hazards like drought, flood, lightening snakebite, and as it is an industrial district it is vulnerable to industrial disaster. In the last10yearscaseshavebeenreportedfortheaboveindicateddisasters.Asofnowthere is no evidence of industrialdisaster.

Table No. : 1

Sl. No.	Disaster/ Incident	No. of incidents during (2007-2016)	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 inKm.	Other Critical Infrastructure	
Disasters as approved under SDRF/ NDRF Guidelines.											
1	Flood	2014	nil	1755	Nil	329	nil	nil	nil	nil	nil
2	Flood	2015	nil	372	Nil	nil	nil	nil	nil	nil	nil
3	Flood	2019	NIl	NIl	Nil	nil	nil	nil	nil	nil	nil
3	Drought	2015-16	nil	33960	Nil	nil	nil	nil	nil	nil	29627.23
4	Drought	2017-18	nil	12546	Nil	nil	nil	nil	nil	nil	7941.45
5	Drought	2018-19	nil	nil	Nil	nil	nil	nil	nil	nil	nil
6	Fire	Nil									
7	Hail Storm	Nil									
8	Cyclone	Nil									
9	Earth Quake	Nil									
10	Tsunami	Nil									
11	Landslide	Nil									
12	Avalanche	Nil									
13	Cloud Burst	Nil									
14	Pest Attack	2018	nil	2786							7253.60
15	Cold Wave	Nil									

StateSpecificDisastersasperNotificationNo.1936 Dt. 01.06.2015			
15	Lghtning	2014-15	6
16		2015-16	9
17		2016-17	4
18		2017-18	6
19		2018-19	1
20		2019-20	3
21		2020-21	4
22	Heat wave	2017-18	8
23		2018-19	1
24		2019-20	1
25		2020-21	0
26	Whirlwind	2014-15	1
27	Tornado	Nil	
28	Heavy Rain	Nil	
29	Boat Accidents (Otherthan during Flood)	2014-15	6
30		2015-16	3
31	Drowning (Other than during Flood)	2020-21	24

32		2017-18	10
33	Snake Bite(Other than during Flood)	2015-16	1
35		2016-17	2
36		2017-18	5
37		2020-21	24

StateSpecificDisastersasperNotificationNo.1936 Dt. 01.06.2015												
15	Lg	2014-15	6									
16	ht	2015-16	9									
17	ni	2016-17	4									
18	n	2017-18	6									
19	g	2018-19	1									
20		2019-20	3									
21		2020-21	4									
22	Heat wave	2017-18	8									
23		2018-19	1									
24		2019-20	1									
25		2020-21	0									
26	Whirlwind	2014-15	1									
27	Tornado	Nil										
28	Heavy Rain	Nil										
29	Boat Accidents (Otherthan during Flood)	2014-15	6									
30		2015-16	3									
31	Drowning (Other than during Flood)	2020-21	24									
32		2017-18	10									
33	Snake Bite(Other than during Flood)	2015-16	1									
35		2016-17	2									
36		2017-18	5									
37		2020-21	24									
Other Disasters												
37	Animal Menace	Nil										
38	Building Collapse	Nil										
39	Stampede	Nil										
40	Epidemics	Nil										
41	Industrial/ Chemical Accidents	Nil										
42	Road Accidents	28	44									
43	Railway Accidents	Nil										
44	Hooch Accidents	Nil										
45	Communal Riot	Nil										
46	Dam Break/ Spill Way related flood.	Nil										
47	Soil/ Coastal Erosion	Nil										

[Year wise details of each disaster occurred during the last 10 years is at TableNo.3.1 of Volume II of DDMP]

Table: 02

Sl. No.	Disaster/ Incident	No. of incidents during 2019	No. of Deaths	Affected Population	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							AWC/ School Buildings	Hospitals	Road in Km.	Other Critical Infrastruc ture	
1	Lightening	8	4								
2	Snake bite	6	17								
3	Drowning	15	24								
4	Sun stroke	Nil	NIL								
5	Pest attack	-	nil	NIL	-	-					BIL

A. Vulnerability and Risk Assessment related todisasters:

The Jharsuguda has a history of recurring natural disasters. While the coastal districts of Odisha are exposed to floods and cyclones, western Odisha is prone to acute droughts; a large section of the State is also prone to earthquakes. In addition, the State is also affected by disasters like heat waves, epidemics, forest fire, road accidents etc.

With 1359.66 mm of annual rainfall concentrated over 3 months, the district is highly vulnerable to drought.High population density,encroachment on the draught areas,poorsocio- economic condition, non-irrigated area increase the vulnerability. Out of total geographical area of 29627.226 hectares are draught prone.There are 2 rivers causing flood during the rainy season.These is miczoning of Odisha falls between zones Ito II i.e.low damage risk zone and moderate damage risk zones. The parts of Jharsuguda districts coming under moderate risk zones.

Jharsuguda is not prone to cyclone. Last 15 years does not have any records of cyclone.

Table No. 03: Cyclone vulnerable areas of the district: (*As per the historical data none of the blocks has been affected by cyclone)*

Sl. No.	Name of the Block/ ULB	No. of susceptibl e Gram Panchayat s	No. of susceptibl e Villages/ Wards	Vulnerabl e Populatio n in Nos.	Milch and Draught animal s	Hous es	Vulnerable Infrastructure			
							School / AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructur e
1										

[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.)

Electrical Infrastructure and cyclone Vulnerability: NIL (*As per the historical data none of the blocks has been affected by cyclone)*

Table No. 04

Sl. No.	Name of the Block	No. of Grid Stations	No. of 33/11 KV Substatio ns	No. of Distributing Transformers			Conductor/ Electrical lines-11 KV or less (length in Kms.)	No. of Electric al Poles	No. of High Tens ion Tow ers	High Tension lines above 11 KV (Length in Kms.)
				11KV orLess	11 KV < and <60KV	6o KV and above				
1	Lakhanpur	0	3	1124	7	0	985.73	15750	0	110
2	Jharsuguda Municipality	1	2	415			123	1538		11.4
3	Jharsuguda	1	3	262			103.25	1299		13.61
4	Kirmira	0	1	140			211	2638		32.5
5	Kolabira	0	1	139			117	1463		32.5
6	Laikera	0	1	274			203	2538		26

Table No.05**: Drinking water facility in the Cyclone prone areas: NIL (*As per the historical data none of the blocks has been affected by cyclone)***

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	

- **Tsunami:NA**

Table No. 06**: Tsunami vulnerable areas of thedistrict: NA**

Sl. No.	Name of the Block/ ULB	No. of suscep tible Gram Pancha yats	No. of suscepti ble Villages / Wards	Vulnera ble Populati on in Nos.	Milch and Draught animals	Ho us es	Vulnerable Infrastructure			
							School Buildin gs/ Angan wadi	Hospit als	Roa ds (in Km)	Other critica l Infra structu re

- **Flood:**

Brajarajnagar and Lakhanpur are the two blocks which are prone to flood. In last 10 years there has been cases reported for flood. 2127 population affected in flood during 2014- 2015 and 329 houses were damaged and there were no records of livestock loss of life due to flood.

Table No. 07 **: Flood vulnerable areas of the district in general:**

Sl. No.	Name of the Block/ ULB	No. of susceptible Gram Panchayat s	No. of susceptible villages/ Wards	Population in Nos.	Milchand Draught animal	Houses	Vulnerable Infrastructure			
							School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructure
1	Lakhanpur	2	5	1658	120	329	NIL	NIL	NIL	NIL
2	Brajarajnagar	1	2	1000	58	129	NIL	NIL	NIL	NIL

(*As per the historical data none of the schools, hospitals and roads are vulnerable)*

Table No. 08**: 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.
1	IB	1	2	2	955						
2	Back water of Hirakud	2	2	5	1658						

(*As per the historical data none of the schools, hospitals and roads are vulnerable)*

Table No. 09**: Agriculture and Flood Vulnerability-NIL-** Back water of Hirakud are non- agricultural fields.

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

Table No. 10 **: Electrical Infrastructure in the Flood Prone Area-NIL** (None Electrical Infrastructure are vulnerable to flood)

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 (lengthin Kms.)
			11 KV or Less	11 KV < and <60 KV	6o KV and above				
1									

Table No.11 **: Drinking water and Flood Vulnerability: NIL** (None Drinking water source vulnerable to flood)

- **Events/ Festivals/ Functions organized in the district where mass gatheringoccurs:**

  [*The events where the strength of population gathering is 5000 or above is to be mentioned in the table]*

  There are seven major festivals where there is more than 5000 population gathers. The details list is below for reference.

Table No. 12

Events /festival function being organized at Jharsuguda where mass public gathering occurs

Sl. No	Name of the district	Events indicating the name of festival/functions being organized by Mass public gathering occurs	Month	Strength of population of gathering (Appx.)	Remarks
1		Jharsuguda lokamohotsuv	January 01-05	50,000	The lokmohotsava is being organized by Dist administration and people of Jharsuguda commutation or district function day
2		Makara mela, Simuliakandeikela G.P	All the month of magha masa	30,000	People of 19 gathered here.
3		Siva ratri at koilighughar	Flaguna masa Chaturdasi	30,000	Itisabigfestivalatthe koilighughar which is a touristplace
4		DhanuyatraBandhabahalBelpahar	Pausapurnima	50,000	Dhanuyatra takes place at Pausapurnima
5		AndhariyatraAndhariPahad	December 09 - 10	50,000	This yatra is bring Organized at the end at the year for Conservation of forest
6		Bichhuakholyatra At bardipahad Lakhanpur G.P	Kartika Purnima	20,000	A Local Festival
7		RathayatraKukurjangha	Asadha	50,000	Car festival is famous for old temple of lord Jagannath Western, Odisha
8		AlekhaMohayagnaGujapahad	Magha Purnima	20,000	He is festival of mahimadharama sadhu in which large no of people gathered at Gujapahad which is old tourist place

- **Boat operation points: Table No.13:**

Sl. No.	Name of the Block	Name of the ghat/ boat operation point	Name of the water body	No. of Panchayat s/ villages connected	Daily to and fro movement of people in Nos. (Approx.)	Type of boats operating in Nos.	
						Mechanise d	Non-Mechanise d
1	Lakhanpur	Taldihi	Hirakud	1	56		1
2		Rampella		1	42		1
3		Padampur		1	34		1
4		Tilgi		1	40		1
5		Dhulunda		1	38		1
6		Sardha		1	36		1
7		Muhudi		1	45		1
8		Mahulpali		1	41		1
9	Jharsugua	Panchapada	IB	1	48		1
10		Malda		1	38		1
11		Rampur		1	44		1
12		Dumermunda		1	32		1

Land Slide Vulnerability:NIL (as per the historical data no evidence of landslide is there, the district is not vulnerable to land slide)

Table No. 14

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
1									

***[Note:** Detailed list of villages, School, Hospitals and Roads are given in the Volume II of the DDMP]*

- **Lightning:**

Lightning is an electrical discharge caused by imbalancesbetween storm clouds and the ground, or within the clouds themselves. Most lightning occurs within the clouds. During a storm, colliding particles of rain, ice, or snow inside storm clouds increase the imbalance between storm clouds and the ground, and often negatively charge the lower reaches of storm clouds. Objects on the ground, like steeples, trees, and the Earth itself, become positively charged—creating an imbalance that nature seeks to remedy by passing current between the two charges. Lightning is extremely hot—a flash can heat the air around it to temperatures five times hotter than the sun's surface. This heat causes surrounding air to rapidly expand and vibrate, which creates the pealing thunder we hear a short time after seeing a lightning flash. The detail of death cases in Jharsuguda district is listed in the tablebelow-

Table No. 15- Identifiable incidents of lightning hit in last 5 years

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/Ward's			
1	Jharsuguda	3	7	7	7	0
2	Lakhanpur	4	8	8	8	0
3	Kolabira	1	1	1	5	0
4	Laikera	3	7	7	9	0
5	Kirmira	1	2	2	4	0

[List of villages is at Table No.15 of Volume II of the DDMP]

- **Major Industrial Establishments/ Chemical & Other hazardous material storage points:**

Table No. 16-

Sl No.	Name & Location of the Indusrty/ Factory/ Chemical storage Points	Name & location of the Hospital / Health Centre	Gram Panchayat	Block
1	Vedanta Ltd. Bhurkamunda	Jharsuguda Govt. Hosital	Katikela	Jharsuguda
2	SMC Power Generation Ltd. Hirma		Hirma	
3	SPS Steel & Power Ltd. Badmal		Badmal	
4	Action Ispat & Power Ltd. Marakuta		Marakuta	
5	MSP Metallics (P) Ltd. Marakuta		Marakuta	
6	TPSL, Lahandabud		H.Katapalli	
7	Singhal Enterprises(P) Ltd. Hirma		Hirma	
8	Bhagabati Steels(P) Ltd.Badmal		Badmal	
9	Jain Steel &Power Ltd. Durloga		Durloga	
10	L.N. Metallics(P) Ltd. Sripura		Sripura	
11	IOCL, Durloga		Durloga	
12	IOCL, Arda		Arda	Kirmira
13	Ultratech Cement Ltd. Dhutra		Arda	
14	Madhav Ispat, Siriapali		Parmanpur	Kolabia
15	Seven star steels Ltd. Kelendamal		Kelendamal	
16	Jayhanuman Udyog(P) Ltd, Raghunathpali		Raghunathpali	
17	Apar Industries LTd. Raghunathpali		Raghunathpali	
18	ITPS, Banharpali	ITPS Hospital, Banharpali	Banharpali	Lakhanpur
19	TRL , Gumadera, Belpahar	TRL Hospital,Gumadera	Belpahar(M)	Belpahar (M)
20	Bhatia Coal Washery (P) Ltd. Chhualiberna		Belpahar(M)	
21	Global Coal mines (P) Ltd. Jorabaga		Belpahar(M)	
22	Earth Mineral Company & Co. Kirarama		Kirarama	

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

- **Drought:**

Drought is another natural calamity arises due to absence of rainfall for a period of time. A *drought* is a period of below-average precipitation in a given region, resulting in prolonged shortages in its water supply,whether atmospheric,surface water or ground water.Prolonged *droughts* have caused mass migrations and humanitarian crises.

Table No.-17

Sl. No.	Name of the Block	Average Annual Rain Fall	Ground Water Level	Cultivated Area (In Hectares)			
				Paddy		Non- Paddy	
				Rain fed Area In hecters	Irrigated area	Rain fed Area	Irrigated area
1	Jharsuguda			2388.470	nil		nil
2	Lakhanpur			10895.800	nil		nil
3	Kolabira			4746.590	nil		nil
4	Laikera			7231.551	nil		nil
5	Kirmira			4364.82	nil		nil

Table No. 18: Drought Vulnerability: in year 2015 the district experienced draught. Non paddy Agricultural Crop Area lost (in Hectares) is not provided by the concerned department.

Sl. No.	Name of the Block	Year-2015				Year – 16				Year-17				Year-18			
		No.ofGPs experience ddrought	No. of Villages affected	Agricultural Crop Area lost (in Hectares)		No.ofGPs experience ddrought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No.ofGPs experience ddrought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No.ofGPs experience ddrought	No. of Villages	Agricultural Crop Area lost (in Hectares)	
				Paddy	Non-Paddy			Paddy	Non-Paddy			Paddy	Non-Paddy			Paddy	Non-Paddy
1	Jharsuguda	17	66	2388.470	nil									17	66	10211	
2	Lakhanpur	33	124	10895.800	nil									33	124	13800	
3	Kolabira	9	47	4746.590	nil									9	47	8592.093	
4	Laikera	11	45	7231.551	nil									11	45	10903	
5	Kirmira	8	42	4364.82	nil									8	42	6825	

- **Drinking Water Crisis:** As of now drinking water crises is not severe in the district. RWSS, PWD, District administration and NGOs are successfully providing the drinking water

Table No. 19:

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								

[Block wise village list is atTableNo. 3.2of Volume II of the DDMP]

- **Railway Line Exposed different Hazards: NIL-**Railway line is not exposed to flood , tsunami , landslide inpast.

Table No. 20-

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

- **Road Accidents:nil**

[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]

Table No- 21:

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	NH-49, Konaktora to Teleibani	105	4	4	4
2	SH-10 Sripura to Talpatia	34	5	5	5

- **Population Requiring Special Care: Table**

No: 22- Block wisedetail

Sl. No .1	Block/ ULB	No. of HHs headed by Women	No. of HHs headed by PWD	No. ofPersons WithDisability		No.of Widow	No. of Children		No. of Orphans		No.ofAged Persons (60 andabove)		No. of Pregnant and lactating mothers
				M	F		0-5 Years	6-14 Years	M	F	M	F	
2	Jharsuguda (U)	2575	351	374	282	3224	9183	16016	27	26	7257	2605	1121
3	Brajarajnagar (U)	1931	214	445	482	2944	5685	8482	46	68	4012	4123	1054
4	Kolabira	1265	121	258	325	2589	2896	8796	32	30	4521	2356	1021
5	Laikera	1142	158	127	258	2321	3568	5894	45	42	2568	2148	1023
6	Lakhanpur	1786	169	254	411	3254	5698	5473	58	51	3695	4521	1452
7	Kirmira	1235	145	147	245	2147	2547	14025	41	34	2541	1256	1002

[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 No. 08: Causing agent wise flood vulnerable areas of the district:

1. **EarthquakeVulnerability:**

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

- The Jharsuguda District is coming under Zone-II (low damage riskzone)/
- The total District is under Zone- III (Moderate damage riskzone)/
- 11% of the District is coming under Zone- III (Moderate damage riskzone)/
- LakhanpurBlocksofthedistrictiscomingunderZone-III(Moderatedamage risk zone) and the other are under Zone-II (low damage risk zone)etc.

N.B. Earthquake Vulnerability Map is in Volume II

14.1 Identified Old and depleted Buildings in the District (if any)- Nil

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

[The list of the buildings to be given in Volume II]

ForestFire: **Forest Fire Incidents:**

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
1	Jharsuguda	Jharsuguda	6	15	Nil
2	Kolabira	Kolabira	8	40	Nil
3	Laikera	Laikera	11	65	Nil
4	Lakhanpur	Lakhanpur	15	82	Nil
5	Kirmira	Kirmira	9	44	Nil

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	Jharsuguda	Jharsuguda								
2	Kolabira	Kolabira								
3	Laikera	Laikera								
4	Lakhanpur	Lakhanpur								
5	Kirmira	Kirmira								

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

2. Fire and Life Safety of High Rise Buildings (buildings having a height of morethan 15meter)-

Sl No.	Name of the ULB/Block	No. of High RiseBuildings	No. Of High Rise Buildings where Fire & Life Safety Audit has been carried out in last2years.	Remarks
1	Jharsuguda	1-SD Leisure Pvt LtdBrundamal 2-Sankar Hotel Beheramal 3-Jangyaseni Hospital	27.10.18 10.06.17 20.09.17	

Table-No. 2

Name of the High Rise Building	Location/ Area	Name, Address, Contact Details of the Owner	WhetherFire&Life SafetyAuditUnder Taken(Yes/No.)	If Yes then the Year and the Name of the Agency	Vulnerable Population
1-Micro Continental Hotel 2-Patra Electronics 3- Panigrahi Complex 4-Sevanada Complex 5- Bishnu Palace 6- Kalinga Bar 7-Yogendra Residency 8- Utakal Contementel 11- Five Element Complex 12-Royal Building 13- Priyanak Residency 14- Hotel Prince 15- Hotel Abhinandan 16- Iswari Hotel 17- Kalpana Hotel & Lodge 18- LaxmiNarayanLodge&Cloth Store 23- Hotel Devyani 24-Queens Electronic 25-Bharat General Store 26- Punjab Cloth 27- MundraHotel&FashionMart 28- Biswanath Jewelers 29- Hora Shree 30-Hotel konark 31-Mohini Royal Hotel & Lodge 32-Anand World 33- Hotel Yogandra 34-Bhubania Vastralaya 35- Vishal Mega Mart 36-UnionBank+RKFashion	Jharsuguda Town		No		

37-Facghion City					

38- Trends 39- AshishEnterprises+IDBIBank 40- KotakMahindra+B.KTraders 41- HotelRoy+ManipuramGold 42-YogashellaComplex 43-Anjan Hotel 44- Bajaj Auto 45-Skill India 46- TVSShowroom 47- Krishna Residency 48- Hotel Payal Bhubanja Vastralaya 49- CapeTown					

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

3. Embankments: **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.)
1	Sambalpur	Gondghora of Jharsuguda district	Other Agricultural	**0.32**

Division wise list of Vulnerable Points :Nil

Sl. No.	Name of the Division	Name of the Embankment/ River	Location of the Vulnerable Point	Affected Length (in Mtr.)	Name of the Block	Name of the Villages to be affected
1						
2						
3						

4. Dam- Burst Scenario: (For large Dams)-nil i.

Sl. No.	Name of the Dam	Location & Water body	Type (Major/ Medium/ Minor)	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 Measure s done ? (Yes/ No)	No. of Villagesto be affected / needs to be evacuated in case of a possible scenario (District & Block Wise)	Remarks
1.										
2.										

Contingency Planning for Dam bursts scenario: nil

1. For Dam -A

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

ii. Formation and Subsequent Bursting of Landslide Dams:nil

Sl. No.	Land Slide Area/ Location Vulnerable for formation of land slide Dams	No. of Villages likely to be affected	Population to be affected
1			

1. <u>Cultural Heritage Sites andPrecincts:</u>

Sl. No.	Cultural Heritage site/precinct	Address/Location	Category (Centrally Protected Monument/ State Protected/UNESCOWorld HeritageSite/ UnprotectedMonument)	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)
1	Jhadeswar Temple	Jharsuguda	Unprotected		NA	Kartika Month
2	Bikram khol	Jharsuguda	State Protected		NA	Winter Months
3	Padmasini Temple	Padampur, Jharsuguda	Unprotected			Winter Months
4	Ramchandi Temple,	Brajarajnagar, Jharsuguda	Unprotected			Winter Months
5	Koili Gughar Waterfall and Temple	Lakhanpur, Jharsuguda	Unprotected			Winter Months
6	Kali Mandir	Jharsuguda	Unprotected			Winter Months

<u>Museums:NIL</u>

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 & Vulnerab ility	Average Foot Fall and Days/ Period during which highest Foot Fall is received)	Remarks (if any)

Human AnimalConflict:

i. Loss of Human Lives and Property due to animal attack-NIL

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
1					

ii. Loss of Animal Lives due to man-made causes -NIL

Sl. No.	Vulnerable Place/ Location	Causing Agent (Railway line/ Electric transmission lines etc.)	No. of Incidents	Number of Animal Lives lost
1				

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 todisaster.

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 directionsissued 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 defense staff of the chief of staffs are other member's ofNEC.

(Please refer Figure 1 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 sub-section (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 theState.
b) Approves the State Plan in accordance with the guidelines laid down by theNDMA,
c) Coordinates the implementation of the State Plan, recommend provision of funds for mit igation and preparednessmeasures.
d) Review the developmental plans of different departments of the State to ensure the integ ration of prevention, preparedness and mitigationmeasures.

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 therefor.

f) Review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government & issue such guidelines as may benecessary.

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.

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 DisasterManagementAuthority (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 Chairmanof 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 stateGovernments.

The State Executive Committee shall-:

a) Coordinate and monitor the implementation of the National Policy, National Plan and StatePlan.

b) Examine the vulnerability of different parts of the State to different forms of disasterand specify measures to be taken for their prevention andmitigation.

c) Lay down guidelines for preparation of disaster management plans bythe departments of the Government of the State and the District authorities and monitor the implementation of theplans.

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 suchpreparedness

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

4.1 Revenue and Disaster ManagementDepartment:

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.

4.2 Special ReliefOrganization:

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.

4.3 Odisha State Disaster Management Authority(OSDMA):

Odisha State Disaster Mitigation Authority (OSDMA) was established by the Government of Odisha as an autonomous organization vides Finance Department Resolution No. IFC- 74/99-51779/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 inreconstruction,
- Coordination with bilateral and multi-lateral aidagencies,
- Coordination with UN Agencies, International, National and State-levelNGOs,
- Networking with similar and relevant organizations for disastermanagement.

4.4 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 thecalamities.

c) To recommend to Government the nature and quantum of relief;and

d) TorecommendtoGovernmentthePolicytobeadoptedingivingsuchreliefinareas affected by suchcalamities.

4.5 District Disaster Management Authority (DDMA)

Under the sub-section (1) of section 14 of DM act 2005.District DisasterManagement 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.*

c) 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, *exofficio*

d) The Chief Executive of the District Authority ,exofficio;

e) The Superintendent of Police, exofficio;

f) The Chief Medical Officer of the district, exofficio;

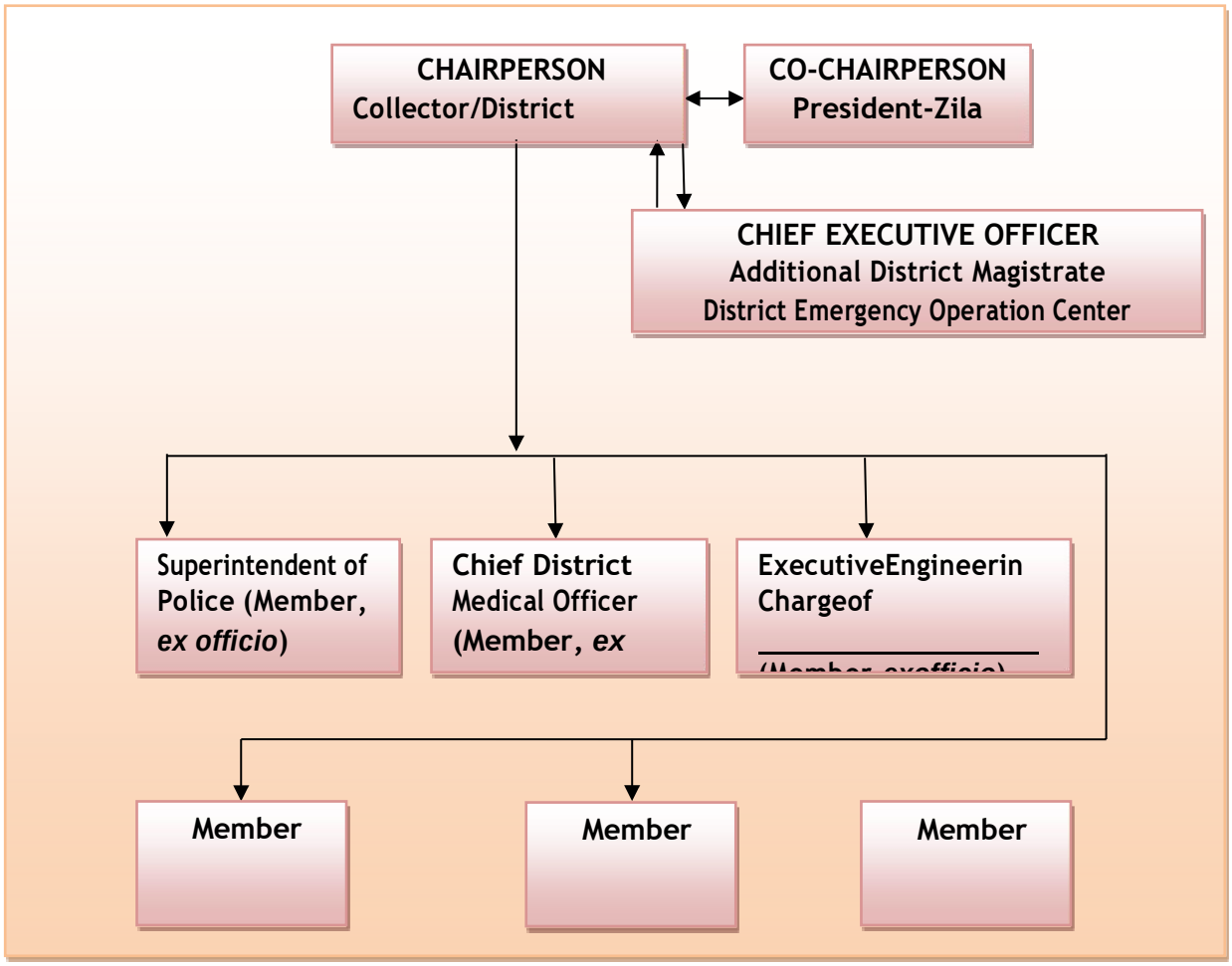
g) Not exceeding two other district level officers, to be appointed by the State Government

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.

Sl No.	Name of the Officer	Designation	Position in DDMA	Contact No.
1	Shri Saroj Kumar Samal	Collector &District Magistrate, Jharsuguda	Chairperson, Ex-Officio	06645-270070
2	Shri Laxminarayan Patel	President, ZillaParishad , Jharsuguda	Co-Chairperson, Ex-Officio	06645-271822
3	Shri Bikas Chandra Dash	Superintendent Of Police, Jharsuguda	Member, Ex-officio	06645-270808
4	Shmt Lily Kumari Kulu	Additional District Magistrate, Jharsuguda	Chief Executive Officer, Ex-Officio	8018520753
5	Shri Tapiram Makhi	P.D., DRDA, Jharsuguda	Member	06645-272997
6	Dr. Lal Mohan Routray	CDM & PHO, Jharsuguda	Member, Ex-officio	06645-273104
7	Shri RasmiRanjan Mishra	E.E., RD, Jharsuguda	Member	9438337998
8	Shri Laxmi Narayan Sathpathy	Chief Deputy Director Agriculture, Jharsuguda	Member	8895913886
9	Smt Nibedita Pradhan	Dy Collector Emergency	Member	

The district administration is the administrative department for management ofdisasters.CollectoristheDistrictReliefOfficerandDisasterManager.Blockisthelowest unit of relief administration. BDOs and Tahsildars jointly manage relief administration at the lowest level. District Natural Calamity Committee (DNCC) and District Disaster Management Authority (DDMA) functions with representations from district level officers and people's representative under the chairmanship of the district Collector for supervision and monitoring. Block Disaster Management Committee under the chairmanship of chairperson of Panchayat Samiti and G.P. Disaster Management Committee under the chairmanship of Sarpanch isfunctioning.

Figure: Organogram of District Disaster Management Authority



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 theDistrict.

b) Coordinate and Monitor the implementation of the National DM Policy,State DM Policy, State DM Plan and District DMPlan.

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 locallevel.

e) Monitor the implementation of Disaster Management Plans prepared by the departments of the Government at the districtlevels.

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 there for;

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 upgradation.

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 anydisaster.

i) Organize, coordinate and facilitate specialized training programms and awareness programms 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 topublic.

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 ormitigation.

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 andauthorities.

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 andplaces.

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 – wel fare institutions working at the grassroot level in the district for disaster management.

p) Ensure communication systems are in order and disaster management drills are carried outperiodically.

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

Specific task assigned to members of DDMA by the Chairperson

Member1-Shr Saroj Kumar Samal,OAS,Collector & District Magistrate, Jharsuguda. He is designated as Chairperson, Ex-Officio. He is responsibility is to held the official meeting for the DDMP, inform all line departments to furnish relevant information for DDMP and finally hold meeting for the approval with all members forDDMP.

Member 2- Tulabati Minz President, Zilla Parishad , Jharsuguda. He is Co- Chairperson, Ex-Officio. His

responsibility is to held the official meeting for the Panchayat Samiti, inform all Block level line departments to furnish relevant information for DDMP and implement DDMP at grass roots level.

Member 3- Shri Rahul Jain Superintendent of Police, Jharsuguda. He is Member; Ex-officio.He is responsible for the law and order situation at the district level in all situation and specially during emergency.

Member 4- Sri Lankeswar Amat, Additional District Magistrate, Jharsuguda. He is Chief Executive Officer,Ex-Officio.His responsibility is to held the official meeting for the DDMP, inform all line departments to furnish relevant information for DDMP and finally hold meeting for the approval with all members forDDMP.

Member 5-Tapiram Majhi, P.D., DRDA, Jharsuguda, He is Member of DDMA. Responsible to furnish information for DDMP, chalk out the action plan with time line atthe grass rootlevel.

Member 6- Dr.Dolamani Patel CDM & PHO, Jharsuguda Member, she is Ex-officio. Responsible to furnish information for DDMP, chalk out the action plan with time line at the grass root level.

Member 7- Er Dhaneswar Sahu E.E., Major Irrigation Division, Sundargarh, Member, Ex-officio.Responsible to furnish information for DDMP,chalkout the action plan with time line at the grass rootlevel.

Member 8- Shri Rasmi Ranjan Mishra E.E., RD, Jharsuguda , Member- Responsible to furnish information for DDMP, chalk out the action plan with time line at the grass root level.

Member 9- Shri Pravat Ranjan Martha Deputy Director Agriculture, Jharsuguda- Member, Responsible to furnish information for DDMP, chalk out the action plan with time line at the grass root level.

Member 10- Smt Nibedita Pradhan, Deputy Collector Emergency- Member, Responsible to furnish information for DDMP, chalk out the action plan with time line at the grass root level.

4.6 District Level Committee on Natural Calamity (DLCNC)

The Nodal 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 No 23: Structure of District Level Committee on Natural Calamity

Sl No.	Name of the Officer	Designation	Position in DDMA	ContactNo
1	Shri Saroj Kumar Samal	Collector & District Magistrate, Jharsuguda	Chairperson, Ex-Officio	06645-270070
2	Smt Tulabati Minz	President, ZillaParishad , Jharsuguda	Co-Chairperson, Ex-Officio	06645-271822
3	Shri Rahul Jain	Superintendent Of Police, Jharsuguda	Member, Ex-officio	06645-270808
4	Sri Lankeswar Amat	Additional District Magistrate, Jharsuguda	Chief Executive Officer, Ex-Officio	8018520753
5	Shri Tapiram Majhi	P.D., DRDA,Jharsuguda	Member	06645-272997
6	Dr. Dolamani Patel	CDM & PHO, Jharsuguda	Member, Ex-officio	06645-273104
7	Shri RasmiRanjanMishra	E.E., RD, Jharsuguda	Member	9438337998
8	Shri Pravat Ranjan Martha	Chief Deputy Director Agriculture, Jharsuguda	Member	90400-63551 82494-34371
9	Smt Nibedita Pradhan	Dy Collector Emergency	Member	88950-46262

(Note: Structure and roles and responsibilities of District Level Committee on Natural Calamities (DLCNC) of the respective districts to be elaborated.)

The district administration is the administrative department for management of disasters. Collector is the District Relief Officer and Disaster Manager. Block is the lowest unit of relief administration.BDOs and Tahsildars jointly manage relief administration at thelowest level. District Natural Calamity Committee (DNCC) and District Disaster Management Authority (DDMA) functions with representations from district level officers and people's representative under the chairmanship of the district Collector for supervision and monitoring. Block Disaster Management Committee under the chairmanship of chairperson of Panchayat Samiti and G.P. Disaster Management Committee under the chairmanship of Sarpanch is functioning.

4.7 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 IndustrialSecurity 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 locatedat 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 StateGovernments.

Table No 24: Location of National Disaster Response Forces

Sl No.	Battalion, Location	State	Man power drawn from	ContactPerson	Contact No.
1	01 Bn, NDRF, Guwahati	Assam	BSF		
2	02 Bn, NDRF, Kolkata	West Bengal	BSF		
3	03 Bn, NDRF, Munduli	Odisha	CISF	Arun Kumar, Comdt	9437964574
4	04 Bn, NDRF, Arakkonam	TamilNadu	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		

4.1 Odisha Disaster Rapid Action Force (ODRAF)

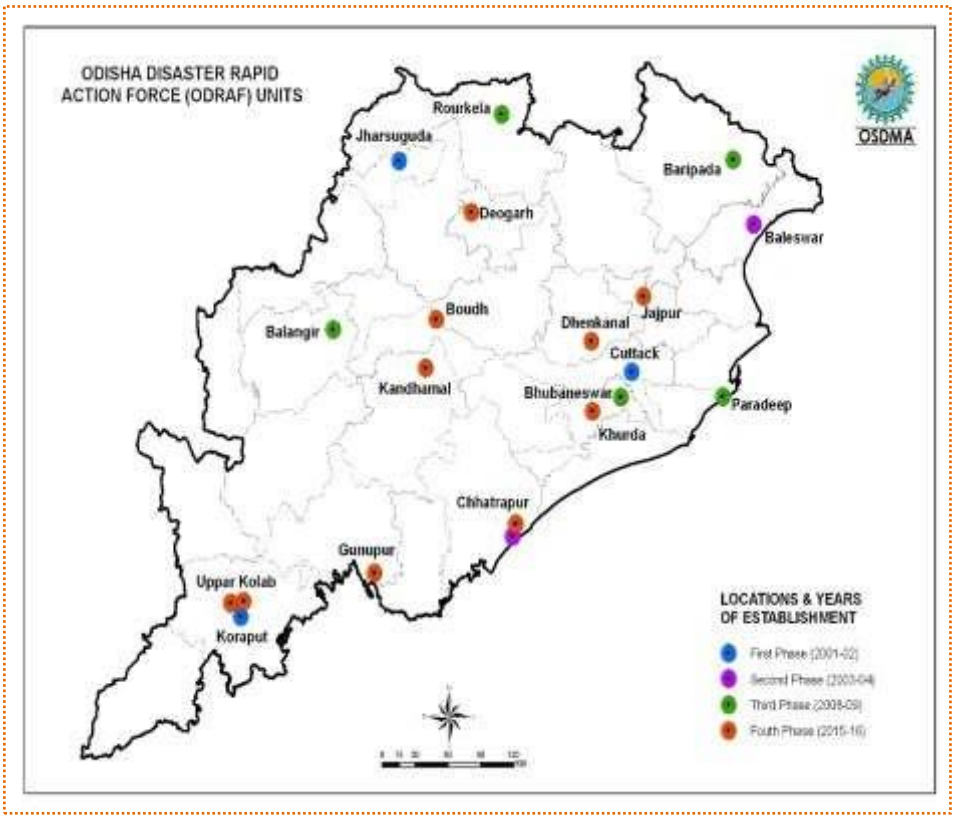
The Government of Odisha formed Odisha Disaster Rapid Action Force (ODRAF) videnotificationno.939/CDdated07.06.2001.ODRAFisamulti-disciplinary,multi-skilled, high-tech force for all types of disasters. ODRAF aims at reducing casualties, clearance of communication channels, quick deployment of personnel 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 anygeographical /territorial restrictions in terms of area of operation.

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

Table No 25: Location of Odisha Disaster Rapid Action Force with contact details

Sl No.	Place	Personnel drawn from	Name of the Command Ant	Contact No.	Name of Subedar	Contact No.
1	Cuttack	OSAP 6thBn, Cuttack				
2	Jharsuguda	OSAP 2ndBn, Jharsuguda	Asish Kumar Dubey	9437129436	Sri. Kul bahadur Thappa	96586-30354
3	Koraput	OSAP 3rdBn, Koraput				
4	Chatrapur	OSAP 8thBn, Chatrapur				
5	Balasore	Armed Police Reserve (APR), Balasore district				
6	Bhubaneswar	OSAP 7thBn, Bhubaneswar				
7	Baripada	OSAP 5thBn,Baripada				
8	Rourkela	OSAP 4thBn, Rourkela				
9	Balangir	Armed Police Reserve (APR), Balangir district				
10	Jagatsinghpur at Paradeep	Armed Police Reserve (APR),Jagatsinghpur district				

Figure: Location of ODRAF Un



4.14 Other Disaster Response Teams in the district

Table: 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	Biksh Chandra Dash	SP			
3	National Service Scheme (NSS)	Sudeep Purohit Nizamuddin Ali	Lecturer Lecturer	9438621248 9438641216		20 24
4	National Cadet Crops (NCC)	L Singh M Pradhan	Lecturer Lecturer	9778424577 890805663		22 20
5	Nehru Yuva Kendra (NYK)	S Kumar				20
6	Red Cross	Nibedita Pradhan	Asst Collector	9438852757		14
7	NGOs	Sambalpur Social Service Society, At-Cox-Colony, PO/Dist-Jharsuguda.	Fr. Joseph Philip At-Cox-Colony, PO-Jharsuguda	9437658921		12
8	VOs	VSS Club	A Barik	9436854565	-	10

4.14 Emergency CommunicationSystem

4.14.1 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.

Figure 2: Information flow chart from SEOC to Districts

4.14.2 District Emergency Operation Centers (DEOC) DEOC of the

District: Structure andFunction

The structure and function of District emergency operation center is very important in the district

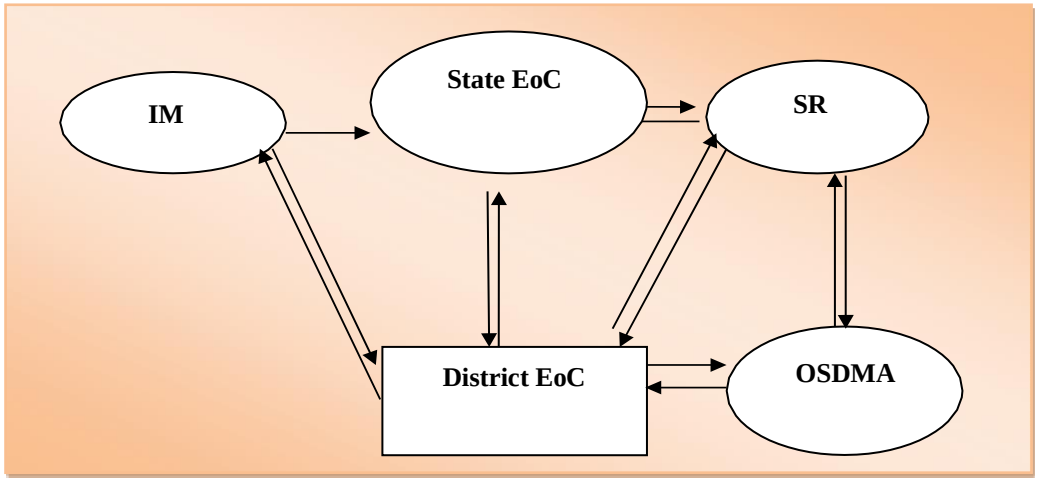


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Table No 27: 3 Equipments provided to DEOC and their operational status

Sl No.	Equipments	Unit	Status		Remarks
			Operational	Non-Operational	
1	Desktop Computer	1	1	1	
2	Laser Printer	0	0		
3	UPS	0	0		
4	Scanner	0	0		
5	Fax	0	0		
6	Ink Jet Printer	0	0		
7	Multi Utility Machine (Printer, Scanner, Fax, copy)	0	0		
8	Laptop	0	0		
10	LCD Projector	0	0		
11	Photocopier	0	0		
12	GPS Unit	1	1		
13	Satellite Phone	1	1		
14	VHF Sets	7	0		
15	VHF Mobile Station	0	0		
16	Walkie-Talkie (VHF hand Set)	2	0	2	
17	Portable Diesel Generator	1	0	1	
18	Inverter with Battery	1	0	1	
19	Inflatable Tower Light	2	0	2	
20	Power Saw	2	0		
21	Life Jacket	5	4	1	
22	Life Buoy	5	0	5	
23	Aluminum Ladder	1	0	1	
24	Fire Extinguisher	1	1		
25	Siren	1	0		
26	Megaphone	0	0		
27	Colour TV/Stand	1/1	0		
28	Mobile Phone	0			
29	Display Board	0			
30	White Broad	0			
31	Computer Table/Chair	1	1		
32	Rack	1	1		
33	Book Case	0			
34	GI Trunk	1	1		
35	Commando Search Light	0			
36	Steel Almirah	0			

Figure 3 : Information flow chart from District Emergency Operation Center (DEoC) to villages with early warning

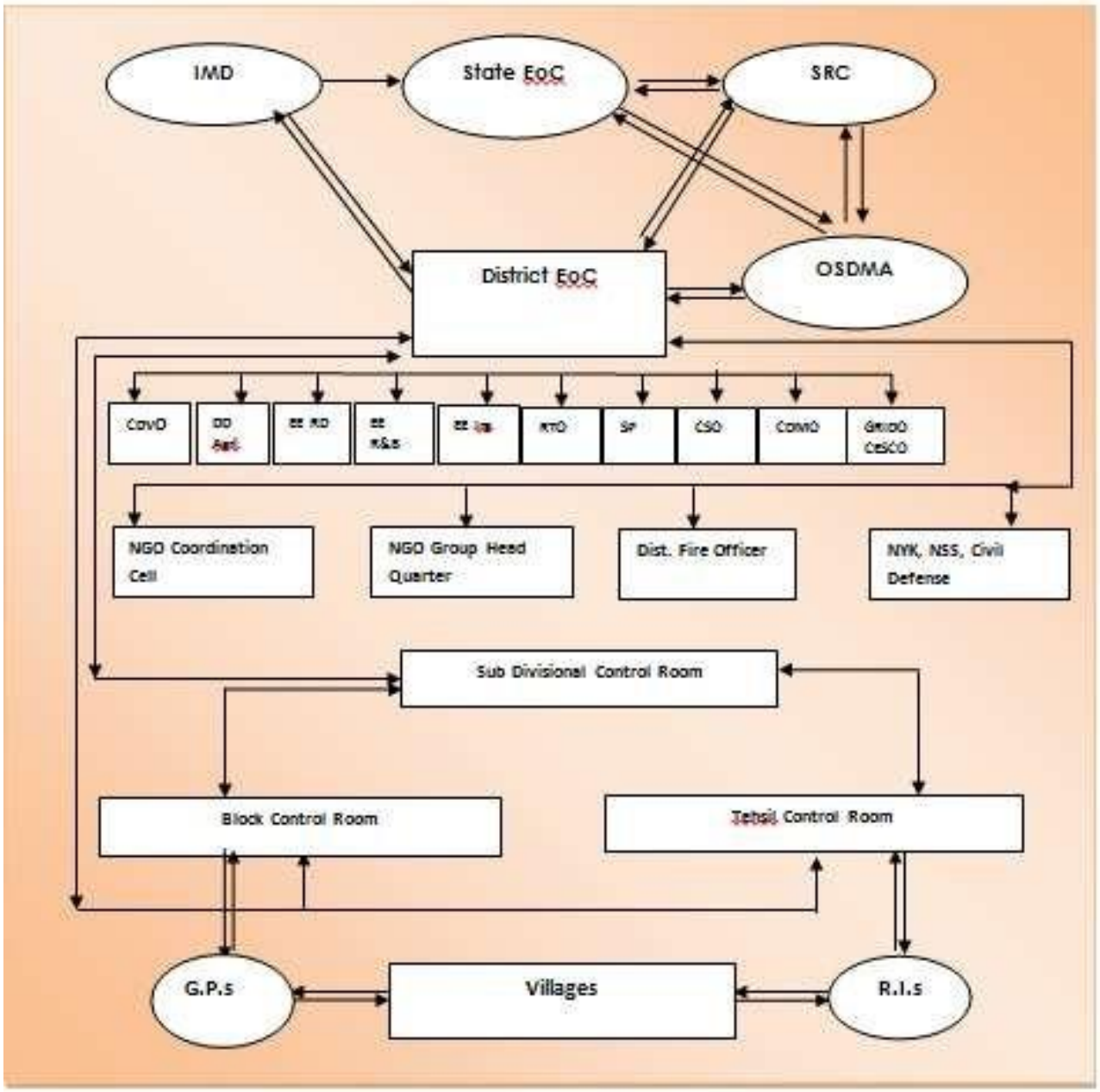
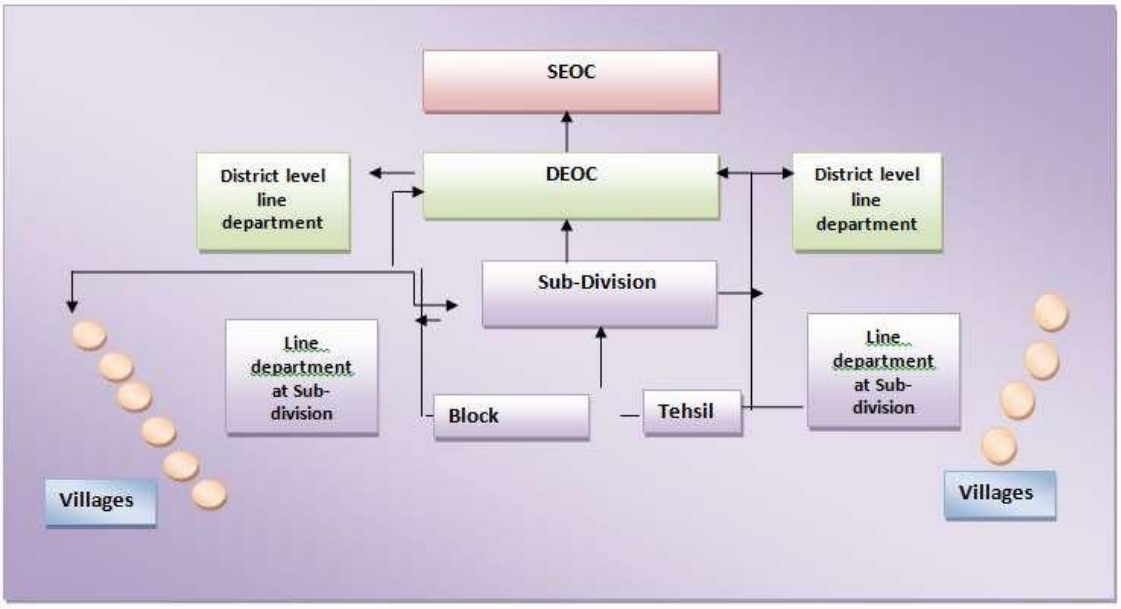


Figure 4: Information flow chart from Villages to District Emergency Operation Center (DEoC) without early warning



4.14.3 Block Emergency Operation Center (BEoC)

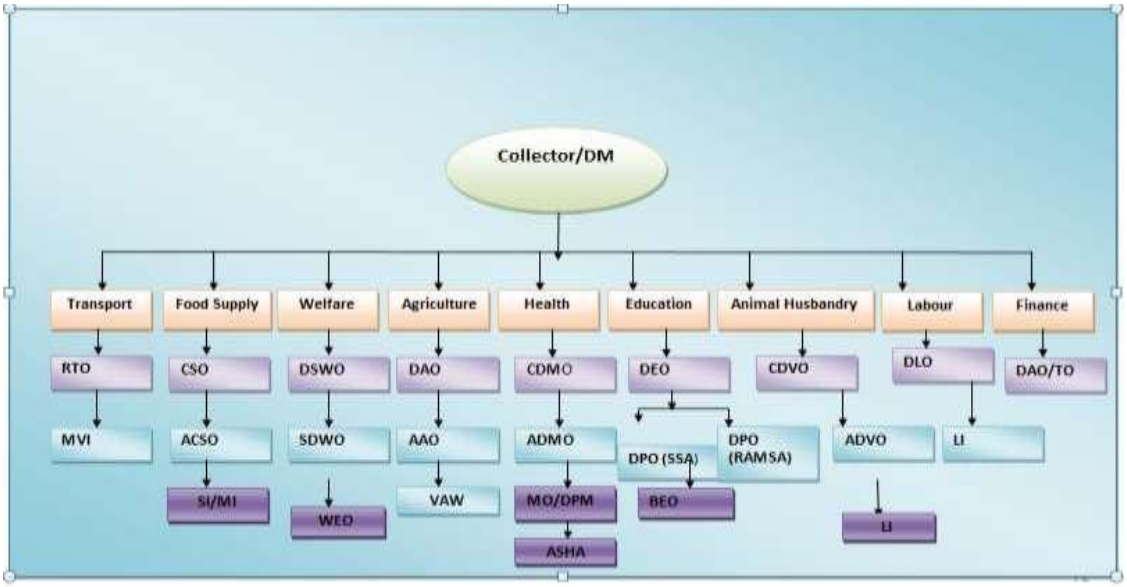
At present BEoCare not existing at the Block level. In the Meeting of DDMP, It is advised to form the BEoC at block level for better functioning of disaster management.

Table No 29: Important Line Departments at the Block

Sl No.	Department	Head of the Department at Block	Name of the Nodal Officer	Contact No.
1	Health	CDM & PHO	Dr. Dolamani Patel	06645-273104
2	Fire	Fire Officer	Ramesh Chandra Mohanty	94390-77047
3	Police	SP	Rahul Jain	06645-270808
4	Education	DEO	Pramod Kumar Sarangi	06645-273060
5	RD	EE, RD	RasmiRanjan Mishra	9438337998
6	RWSS	EE, RWSS	Sibaram Padhan	9437039839
7	Forest	DFO	Lalit Kumar Patra	8280342658
8	Civil Supply	CSO	Umesh Chandra Swain	9438200044

4.14.4 Any other Alternative Emergency Operation Center in thedistrict-nil

4.15 Coordination structure at the District level and down theline



4.16 GO-NGO Coordination before and after disaster in the district (1page)

(Note: Elaborate on GO-NGO coordination cell in the district, if any)nil

4.16 Role of Corporate Sector in the district relating to Disaster Management (1page)-nil

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

(Note: Brief description on Public and Private emergency service facilities in thedistrict may be given) -nil

Table No 30: Contact Details of Private emergency services-

Sl. No.	Name of the Contact Person	Contact No.
1	A C Mohanta, Ultra Tech	**90900-99534**
2	Uma KantaPadhi, ITPS, Banaharpali	**97787-15425**
3	P B Panda, TRL, Belpahar	**97760-67890**
4	AbhijeetPati	**9777451555**

4.18 Multi-Purpose Flood Shelters (MFS) in thedistrict

a) (GIS Maps for location of MFS may beincorporated)

b) (Details of Flood Shelter Management and Maintenance Committee (FSMMC) may beincorporated)

c) Table No 31: Details of FSMMC-New –no datareceived

d) Equipments provided to the MFS-NIL-till date no equipments arethere

Table No 32: Details of equipments provided to MFS-NIL

Sl No.	*Name of the MFS*	*Location*	*Equipments Provided*	*Status*		*Remarks*
				Operational	*Non Operational*	
1	Konaktora	Konaktora	***Nil***			
2	Maodhi	Maodhi	***Nil***			

1.19 Cyclone Shelters (CS) in theDistrict-nil

a) (GIS Maps for location of CS may beincorporated)

b) (Details of Cyclone Shelter Management and Maintenance Committee (CSMMC)may beincorporated)

c) (Equipments provided to theCS)

Table No 33: Details of CSMMC-NA

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

Table No 34: Details of equipments provided to FS - Nil

4.20 Other identified Safe temporary shelters in the district-Educational Institutions, Kalyan mandaps, Town halls are other identified Safe temporary shelters in thedistrict.

Table No 35: Identified Safe temporary shelters-

Sl No.	*Block*	*GP*	*Village*	*Name of the Institutions/Buildings*	*Type of Roof*	*No. of Rooms (Size)*	*No. of Toilets (M/F)*	*Availability of Kitchen*	*Total useable area*
1	Lakhanpur	Kanaktora	Kanaktora	HS Kanaktora	Pucca	4	2	yes	0.5 acre
2		Remta	Maudhi	PS Maudhi	Pucca	2	1	yes	10 dec

4.21 Other Safe Sites for temporary shelter for Flood/ Tsunami etc.-Educational Institutions, Kalyanmandaps, Town halls are other identified Safe temporary shelters in the district.

Table No 36: Safe Sites for temporary shelter for Flood

Sl. No.	*Block Name*	*GP Name*	*No. of Mounts*	*No. of High Bridges*
1	Lakhanpur	Kanoktora	3	-
2		Remta	1	-

4.16.2 Functions of the State CrisisGroup

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,

a) Assist the State Government in managing chemical accidents at asite;

b) 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 threemonths;

c) Assist the State Government in the planning, preparedness and mitigation of major chemical accidents at a site in theState;

d) Continuously monitor the post accident situation arising out of a major chemicalaccidentintheStateandforwardareporttotheCentralCrisisgroup

e) Review the progress report submitted by the District Crisisgroups;

f) Respond to queries addressed to it by the District Crisisgroups;

g) Publish a list of experts and officials in the State who are concerned with the management of chemicalaccidents.

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 Groups hall,-

a) Assist in the preparation of the district off-site emergencyplan;

b) Assist the district administration in the management ofchemical;

c) Continuously monitor every chemicalaccident;

d) Review all the on-site emergency plans prepared by the occupier of MajorAccidentHazardsinstallationforthepreparationofthedistrict off-site emergencyplan;

e) Ensure continuous information flow from the district to the Central and State Crisis Group regarding accident situation and mitigation efforts;

f) Forward a report of the chemical accident within fifteen days to the State CrisisGroup;

g) 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 CrisisGroup

4.17.1 **Composition of the District Crisis Group**

Table_____Composition of District Crisis Group

1. District Magistrate & Collector, Jharsuguda	Chairman
25. Sri Shashikant, Vice President, M/s. Thakur Prasad Sao & Sons Pvt. Ltd, Lahandabud, Jharsuguda.	Member
26. Dr. Tarapada Das, Vice President (HR & Admin) of M/s. TRL Krosaki Refractories Limited Belpahar, Jharsuguda.	Member
27. President, TRL Krosaki Refractories Shramik Union, Belpahar, Jharsuguda	Member
28. Sri Sanjeev Grehwal, Deputy General Manager, (O & M), M/s. IB Thermal Power Station(OPGC), Banharpali, Jharsuguda	Member
29. Sri Umakanta Pahi, Head SHE of M/s. IB Thermal Power Station (OPGC), Banharpali, Jharsuguda	Member
10. Chief District Medical Officer, Jharsuguda	Member
11. Sub Collector, Jharsuguda	Member
12. Executive Engineer, Public Health Engineering Department, Jharsuguda	Member
13. District Information & Public Relation Officer, Jharsuguda	Member
14. District Agriculture Officer, Jharsuguda	Member
15. Regional Transport Officer, Jharsuguda	Member
16. Chief, Civil Defence Officer, Jharsuguda	Member
17. District Energy Officer	Member
18. Chief Fire Officer	Member
19. Controller of Explosive	Member
20. Sri Abhijit Pati, Factory Manager, M/s. Vedanta Limited, Bhurkamunda Jharsuguda.	Member
21. Sri D.K Singh, Head SHE, M/s. Vedanta Limited, Bhurkamunda Jharsuguda.	Member
22. Sri Pankaj Sharma, Factory Manager, M/s. Vedanta Limited, Banjari, Jharsuguda.	Member
23. Sri Ashok Kumar Saraf, Vice President & Head SHE of M/s. Concast Steel & Power Limited, Jharsuguda.	Member
24. Sri Sanjeeb Kumar Sahu, Plant Manager, LPG Bottling Plant(IOCL), Panchapada, Jharsuguda	Member

30. Working President of Employees Union of M/s IB Thermal Power Station (OPGC), Banharpali, Jharsuguda. Member
31. Sri Biswaranjan Nanda, Vice President & Head SHE of M/s. MSP Metallics Limited, At/Po-Marakuta, Jharsuguda. Member
32. Sri Vikas Goyal, Sr.Vice President, M/s. Action Ispat & Power Limited, At –Pandripathar, Jharsuguda. Member
33. Sri Madhav Lodha, Occupier,M/s. Madhav Ispat, Siriapali, Jharsuguda Member
34. Sri KAP Rao, General Manager,M/s. Sevenstar Steels Limited, Kelendamal, Jharsuguda Member
35. Sri D P Singh, Executive Director, M/s. SMC Power Generation Limited, At/Po –Hirma,Jharsuguda Member
36. Sri B. R Tripathy, Vice president M/s. Global Coal & Mining (P)Ltd., Jorabaga, Jharsuguda. Member
37. Sri Sreekumar M/s. Bhatia International Ltd., Belpahar, Jharsuguda Member
38. Sri Awanish Didwania, Factory Manager M/s. Earth Mineral Company Ltd., Bandhababahal, Jharsuguda Member
39. Sri Rajesh Agarwal M/s. Forties Chemicals Ltd., Raghunathpali, Kolabira, Jharsuguda. Member
40. Sri Vijay Chhabra M/s. UltraTech Cement Ltd, Arda, Jharsuguda Member
41. Sri Sumitra Shah, Occupier, M/s. Jai Hanuman Udyog Ltd.,
42. Sri Abhisek Agrawal, Occupier, M/s. L.N. Metallics (P) Ltd., Sripura, Jharsuguda Member
43. Sri Nitin Khara , Occupier, M/s. Essenn LPG Bottling (P) Ltd. Parmanpur, Kolabira, Jharsuguda. Member
44. Sri K Ranga sai, Factory Manager, M/s. Ind Barath Energy Utkal Limited At- Sahajbahal, Po- Charpali,Dist- Jharsuguda. Member
45. Sri Mrutyunjaya Karmakar, Occupier, M/s. Indian Oil Corporation Limited, Malimunda, Jharsuguda. Member

4.18 Local CrisisGroup

TheLocalCrisisGroupshallbethebodyintheindustrialpockettodealwithchemical accidents and coordinate efforts in planning, preparedness and mitigation of a chemical accident.Without prejudice to the functions specified undersub-rule (1),the Local Crisis Group shall,

a) Prepare local emergency plan for the industrialpocket;
b) Train personnel involved in chemical accidentmanagement;
c) Ensure dovetailing of the local emergency plan with the district off- site emergencyplan;
d) Educate the population likely to be affected in a chemical accident about the remedies and existing preparedness in thearea;
e) Conduct at least one full scale mock-drill of a chemical accident at a site every six months forward a report to the District CrisisGroup;
f) Respond to all public inquiries on thesubject.

4.18.1 Composition of the Local CrisisGroup

TableComposition of Local CrisisGroup

Sl No.	Member	Designation
1	Shri Saroj Kumar Samal	Collector
2	Dayanidhi padhi	Sub Collector
3	Shri Nebidita Pradhan	Dy Collector
4	Shri R C Mohanty	Fire Officer
5	Ashish Kumar Dubey	Commandant ODRAF
6	Shri Rahul Jain	SP, Jharsuguda
7	Dr Dolamani Patel	CDM & PHO

National Legal Services Authority (NALSA):

The National Legal Services Authority (NALSA) has been constituted under the Legal Services Authorities Act, 1987 to provide free Legal Services to the weaker sections of the society. The Chief Justice of India is the Patron-in-Chief and the Senior most Hon'bleJudge, Supreme Court of India is the Executive Chairman of theAuthority.

Public awareness, equal opportunity and deliverable justice are the corner stones on which the edifice of NALSA is based. The principal objective of NALSA is to provide free and competent legal services to the weaker sections of the society and to ensure that opportunities for securing justice are not denied to any citizen by reason of economic or other disabilities, and to organize Lok Adalats for amicable settlement of disputes. Apart from the abovementioned, functions of NALSA include spreading legal literacy and awareness, undertaking social justice litigations etc.

With the aim of reaching out to the diverse milieu of people belonging to different socio- economic, cultural and political backgrounds, NALSA identifies specific categories of the marginalized and excluded groups from the diverse populace of the country and formulates various schemes for the implementation of preventive and strategic legal service programmes to be undertaken and implemented by the Legal Services Authorities at the various levels. In carrying out all these responsibilities, NALSA works in close coordination with the various State Legal Services Authorities, District Legal Services Authorities and other agencies fora regular exchange of relevant information, monitoring and updating on the implementation and progress of the various schemes in vogue and fostering a strategic and coordinated approach to ensure smooth and streamlined functioning of the

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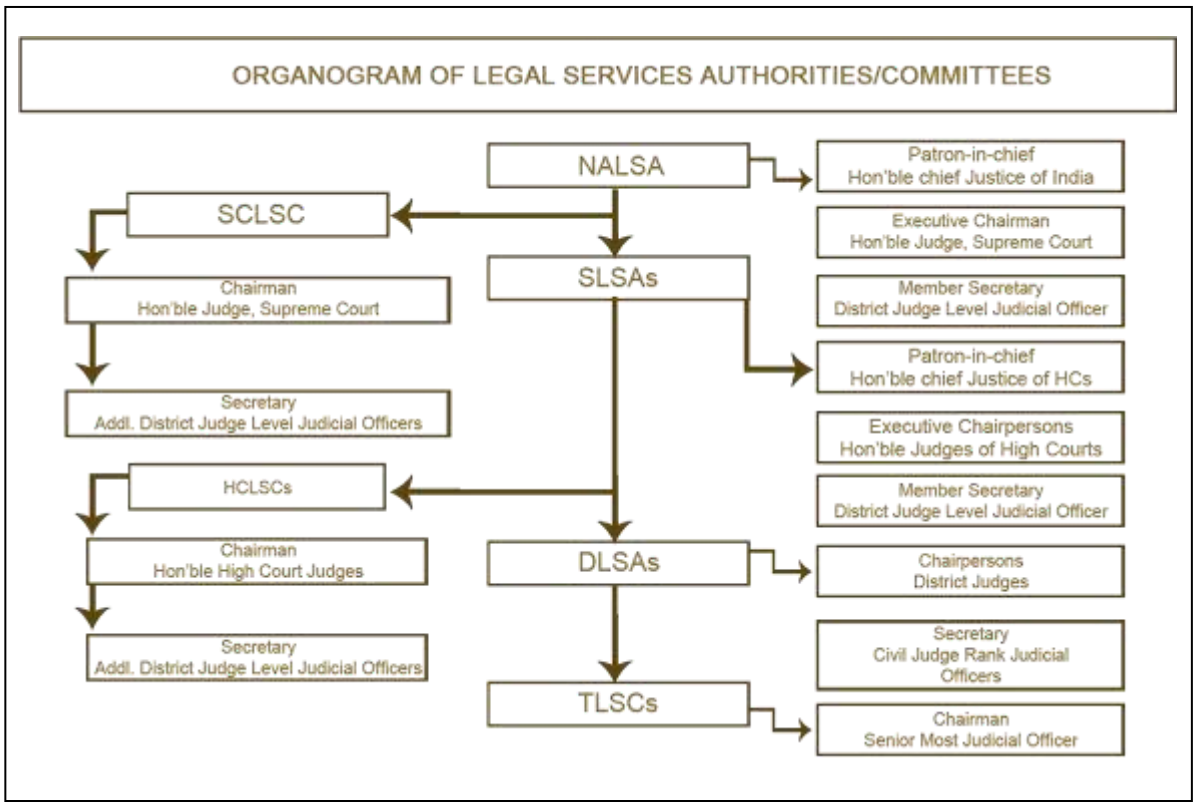

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The general public who need any legal help / legal aid can directly contact the concerned Taluk Legal Services Committee / District Legal Services Authority, the High Court Legal Services Committee and the State Legal Services Authority, as the case maybe,

for their legal needs. Added to it, Front Offices have also been established in the premisesof the District Legal Services Authority and Taluk Legal Services Committee manned by advocate retainers to offer legal advice to the beneficiaries and the general public as well and also to assist them in different Legal Services Activities.

The State Legal Services Authority has 15 Members which include the Hon'ble Chairman of High Court Legal Services Committee, Principal Secretaries in the Depts. of Law and Finance, Director-General and Inspector-General of Police, Advocate General, District Judges of Cuttack and Khurda at Bhubaneswar. Apart from that the State Authority has 5 nominated Members namely Hon'ble Minister, Law, Orissa, a Senior Advocate of Orissa High Court, an M.P., an M.L.A., and an eminent social worker who have experience in the field of Law, Finance, Social Service or Administration and who are engaged in the upliftment of the weaker sections of the society,including Schedule Castes, Schedule Tribes, Women, Children, rural and Urban Labour and who are interested in the implementation of the Legal Service Schemes.

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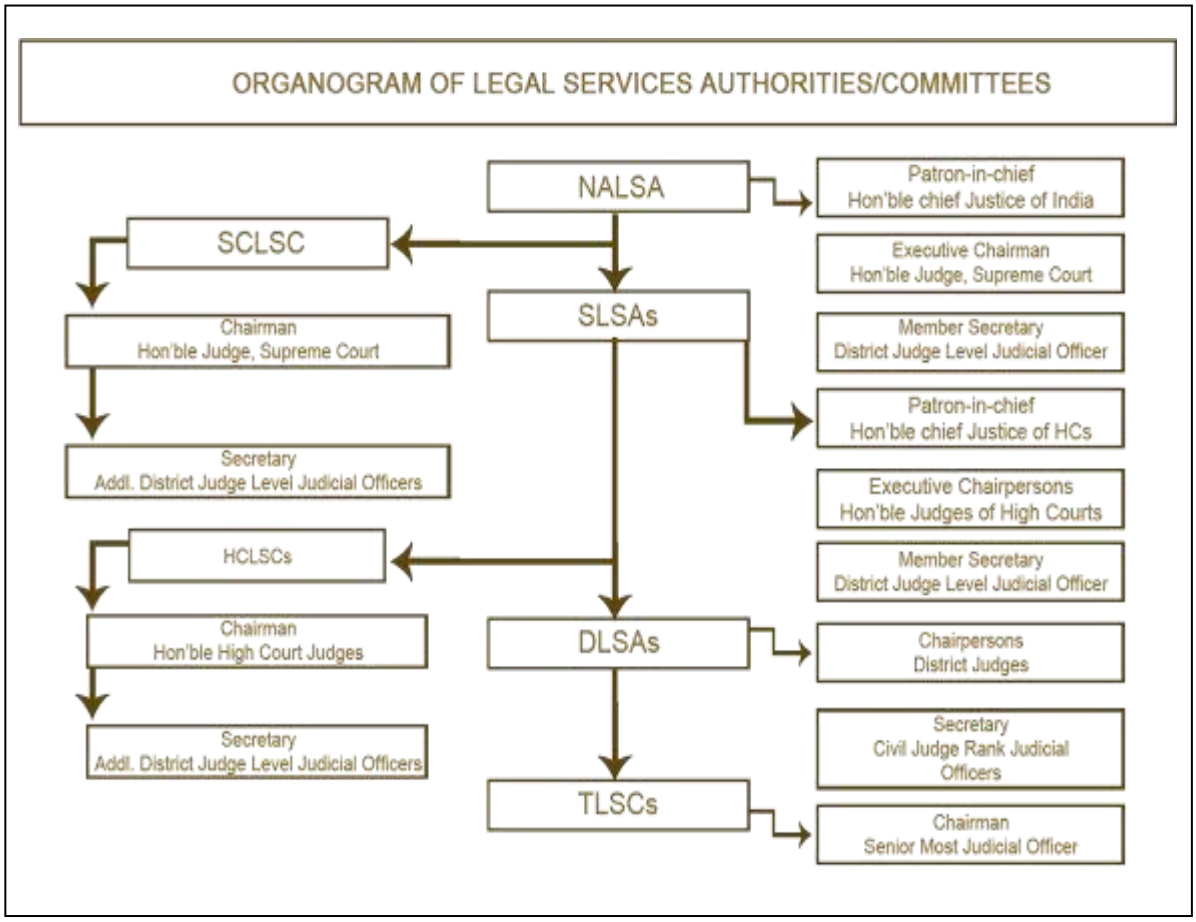

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District Legal Services Authority (DLSA), Jharsuguda				
Sl No	Name	Designation	Contact No	Mail ID
1	Shri Pradyumna Kumar Nayak	The District Judge Cum Chairman, DLSA, Jharsuguda	8249089456	
2	Shri Saroj Kumar Samal	The Collector Cum Member, DLSA,Jharsuguda	9437226644	
3	Shri Bikas Chandra Dash	The Supt Of Police Cum Member, DLSA, Jharsuguda	9438916530	
4	Smt Mamita Dash	The Chief Judicial Magistrate Cum Member, DLSA, Jharsuguda	9437441146	
5	Shri Mukesh Tiwari	The Govt Pleader Cum Member, DLSA, Jharsuguda	9437058515	
6	Smt Janaki Biswal	The Secretary, DLSA, Jharsuguda	943919380	

Chapter – 5

Prevention & MitigationMeasures

The Government of India have adopted mitigation and prevention as essential componentsoftheirdevelopmentstrategy.TheTenthFiveYearPlandocumenthasadetailed chapter on Disaster Management. The plan emphasizes the fact that development cannot be sustainable without mitigation being built in to developmental process.Each State is supposed to prepare a plan scheme for disaster mitigation in accordance with the approach outlined in the plan. In brief, mitigation is being institutionalized into developmentalplanning.

The Finance Commission makes recommendations with regard to devolution of funds between the Central Government and State Governments as also outlays for relief and rehabilitation. The earlier Finance Commissions were mandated to look at relief and rehabilitation. The Terms of Reference of the Twelfth Finance Commission have been changed and the Finance Commission has been mandated to look at the requirements for mitigation and prevention apart from its existing mandate of looking at relief and rehabilitation. A Memorandum has been submitted to the Twelfth Finance Commissionafter consultation with States. The Memorandum proposes a MitigationFund.

The Government of India have issued guidelines that where there is a shelf of projects, projects addressing mitigation will be given a priority. It has also been mandated that each project in a hazard prone area will have disaster prevention/mitigation as a term of reference and the project document has to reflect as to how the project addresses that term of reference.

Measures for flood mitigation were taken from 1950 onwards. As against the total of 40 million hectares prone to floods, areas of about 15 million hectares have been protected by construction of embankments. A number of dams and barrages have been constructed. The State Governments have been assisted to take up mitigation programmes like construction of raised platforms etc.Floods continue to be a menace how ever mainly because of the huge quantum of silt being carried by the rivers emanating from the Himalayas . This silt has raised the bed level in many rivers to above the level of the countryside. Embankments have also given rise to problems of drainage with heavy rainfall leading to water logging in areas outside the embankment. To evolve both short-term and long-term strategy for flood management/erosion control, Government of India have recently constituted a Central Task Force under the Chairmenship of Chairman, Central Water Commission. The Task Force will examine causes of the problem of recurring floods and

Erosion in States and region prone to flood and erosion, and suggest short-term and long-term measures. The Task Force will submit its report by December2004.

Due to erratic behaviour of monsoons, both low and medium rain fall regions, which constitute about 68% of the total area, are vulnerable to periodical droughts. Our experience has been that almost every third year is a drought year. However, in some of the States, there may be successive drought years enhancing the vulnerability of the population in these areas. Local communities have devised indigenous safety mechanisms and drought oriented farming methods in many parts of the country. From the experience of managing the past droughts particularly the severe drought of 1987,a number of programmes have been launched by the Government to mitigate the impact of drought in the long run. These programmes include Drought Prone Area Programme (DPAP), Desert Development Programme (DDP), National Watershed Development Project for Rainfed Areas (NWDPRA), Watershed Development Programme for Shifting Cultivation (WDPSC), Integrated Water Development Project (IWDP), Integrated Afforestation and Eco- development Project Scheme (IAEPS).

5.1 Ways&Meanstopreventorreducetheimpactofvariousdisasters:

The importance of prevention, mitigation and preparedness in limiting the impact of natural disasters is highly recommended for disaster reduction.

Disaster prevention includes activities to avoid the adverse impact of hazards. Good planning is an example of disaster prevention (e.g. the decision not to build houses in a disaster-prone area). Depending on social, technical, and economic feasibility, investing in preventive measures is justified in areas frequently affected by disasters.

Disaster mitigation includes measures taken in advance of a disaster aimed at decreasing its impact on society and the environment (e.g. developing building codes, reinforcing key structures such as hospitals).

Disaster preparedness includes pre- and post-emergency measures designed to minimize the loss of life, and to organize and facilitate timely effective rescue, relief, and rehabilitation in case of disaster (e.g. developing disaster plans and organizing simulation activities to prepare for an eventual disaster relief operation).

With sophisticated early warning systems, we can see the first signs of oncomingfamine almost a year ahead of time. However, these early warnings are only helpful ifthey lead to early action.

5.2 StructuralMeasures:

Structuralmeasuresareanyphysicalconstructiontoreduceoravoidpossibleimpacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures orsystems.

Table No: 36-Structural Measures

Sl. No.	Name of the Department/ Office	Activity/Project	Starting date	Date of completion	Cost	Funding Source
1	CMRF by RD Dept	MFS Konaktora	6.6.2015	25.7.2016	63,24,900	CMRF
2	CMRF by RD Dept	MFS Maudhi	1.1.2015	20.7.2016	60,10,227	CMRF

5.3 Non-structural Measures:

Non-structural measures are measures to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Table No: 37- Non-structural Measures-

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting date	Date of Completion	Cost	Funding Source
1	DEOC, JHARSUGUDA	Mock drill	19.6.2020	19.6.2020	29200	OSDMA

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

Following action have been taken to make aware people about different disaster through DRR project. In 3 sample villages following DRR activities have been taken:

i) Support Policies andFrameworks.

ii) Human resourcedevelopment

iii) Build Linkages with DevelopmentProgramme

iv) Develop broader partnerships

v) Promote Equity, Social Inclusion and WomenEmpowerment.

vi) Develop an enabling environment and mechanisms and support learning and knowledgesharing.

Awareness Activities: Awareness activities conducted in Villages in Jharsuguda & block also in the Block level, District level too Advocacy workshop / sensitization of Officers has been carried out in a vigorous way.School Safety is also another aspect where in the Teachers & students are being educated on the safety aspects in their schools and the students are being imparted trainings on Search & Rescue, FA,etc.

Block / GP and Village Level Preparedness Activities: Under the Disaster Risk Reduction Project in G.P level,the volunteers have been trained on Search&Rescue,First Aid & Shelter Management etc. and Mock Drills on regular intervals has been organized in all the Blocks of Jharsuguda.

The following activities were taken in DRR Project work:

[Activities/ Projects for 5.3 and 5.4 (*Indicative Only****):***

- Construction of multipurpose cyclone and floodshelters.
- Removal of hoardings before specified cycloneperiod
- Trimming of trees and shrubs and removal of damaged and decayed parts of trees close to localities and criticalinfrastructure
- Public safety norms and constructions in places of worship and massgathering
- Soil erosion control and riverbankstabilization
- Road and HighwayStabilization
- Bridge abutmentstabilization
- Protection of Roads, Culverts and Bridges against flood- grassplantatio

- Repair and Maintenance of Embankments against flooding and erosion. Retrofitting of vulnerable spots to prevent embankmentbreaches
- Cross Drainage Works:- Construction of causeways and culverts sufficient for carrying water more than historical records to prevent flash floods in downstream villages
- DrinkingWater:
  - Habitations to be covered under pipe water supplyscheme
  - Water supply in scarcity areas in during summerseason
  - Raising of hand pumps in flood proneareas
  - Repair/ Replacement of non-functional hand pumps
- Sanitation:
  - CommunityMobilization
  - Construction ofToilets
  - Municipal WasteManagement
  - Sewerage System inULBs
- Plantation: River bank plantation, AR, ANR, Hill Slope Plantation, Fodder Plantation, Agro forestryetc.
- Soil conservationworks.
- Waterharvesting
- Prevention of RoadAccidents:
  - Putting up of signage in accident pronezones
  - Lightreflectors
  - Diversion boards for roads andbridges
  - Repair of potholes & construction of Speedbreakers
- Immunization
- Preventive measures against vector bornediseases
- Risk Transfer: Crop insurance/ livestockinsurance
- Measures against animal depredation- Trenching/Fencing
- Awareness generation programmes on disaster prevention andmitigation
- Mainstreaming Disaster Risk Reduction (DRR) in developmentactivities]

□□□

Chapter – 6

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 climatechange.

Green house 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 mostimportant 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. CO_2, CH_4 and N_2O) 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, SF_6 andNF_3).

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_2O)	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(Co_2)

Most important greenhouse gas (contributes ~64% to total radiative forcing by long-lived GHGs). Half of CO_2 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 (CO_2).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. CO_2 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 carboni.e.sinksthatcanabsorbCO_2fromtheatmosphere.Carbondioxide is the gasto which all other gases are compared when speaking of Global Warming Potential.Emissions of other greenhouse gases can be converted into *CO_2 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 polluants emited(PPM)	Action taken for cutting down émission
1	UltraTech Cement Limited, Jharsuguda Cement Works	At-Dhutra, PO-Arda , Dist-Jharsuguda (Odisha)	Not emitted	NA	Since JCW is a Grinding Unit, no gaseous pollutants is generated. Only particulate matter is emitted.	NA
2	TRL Krosaki Refractories Ltd.	Belpahar	145510			- Fuel efficient technology - Recycle&Reuse of resources
3	Lilari Opencast Project	Jurabaga	Not applicable	Not applicable	The yearly (2017-18) average of all stations samples SPM- 257 PM10– 147 PM2.5 – 41.39 SO2–4 NOx –7	Not applicable
4	Lakhanpur Opencast Project	21U47'32"N &21U43'12"N 83U47'59"E	Not applicable	Not applicable	The yearly (2017-18) average of all	Not applicable

		&83U51'30''E			stations samples SPM- 301.7 PM10– 168.93 PM2.5 – 42.26 SO_2 – 2.96 NO_X – 8.23	

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 (CH_4) which contributes to approximately 18% of total radiative for cingdueto LLGHGs.Approximately 40% of Methane is emitted in to the atmosphere by natural sources (e.g.wetland sandtermites).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 relativelyshort-lived.

Table : 6.3

Sl No	Name of the Block	Major Sources	Annual émission (In PPM)	Ranking as per CH4 Emission (PPM)	Action taken for cutting down émission
1	UltraTech Cement Limited, Jharsuguda Cement Works	NA	NA	NA	NA
2	TRL Krosaki Refractories Ltd.	NA	NA	NA	NA
3	Lilari Opencast Project	NA	NA	NA	NA
4	Lakhanpur Opencast Project	NA	NA	NA	NA

6.4 Important Greenhouse Gases: NitrousOxide(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%).

Nitrousoxide is the third mostsignificant GHG, contributing to about 6% of radiative forcingdueto LLGHGs.The primary humansources of N_20 are fertilizer production and use inagriculture and various industrial processes.It is estimated that N_20 stays in the atmosphere foranestimated 114 years.It simpacton 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 thesun.

Table : 6.4

Sl No	Name of the Block	Fertiliser /Industrial processes	Annual Usage (In tonnes)	Ranking as per N2O Emission (PPM)	Other major polluants emited (PPM)	Action taken for cutting down émission
1		NA	NA	NA	NA	NA

	UltraTech Cement Limited, Jharsuguda Cement Works					
2	TRL Krosaki Refractories Ltd.	NA	NA	NA	NA	NA
3	Lilari Opencast Project	NA	NA	NA	The yearly (2017-18) averageofallstations samples SPM- 257 PM10– 147 PM2.5 – 41.39 SO2 –4 NOx–7	NA
4	Lakhanpur Opencast Project	Not applicable. Coal mining process	NA	NA	The yearly (2017-18) averageofallstations samples SPM- 301.7 PM10 –168.93 PM2.5 –42.26 SO2 –2.96 NOx –8.23	NA

6.5 Important Greenhouse Gases: FluorinatedGases

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 (SF_6). 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, insome cases, lasting thousands of years. Fluorinated gases are removed from the atmosphere only whentheyaredestroyedbysunlightinthefarupperatmosphere.Ingeneral, fluorinatedgases arethemostpotentandlongestlastingtypeofgreenhousegasesemittedbyhumanactivities. There are three main categories of fluorinated gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

- Hydrofluorocarbons (HFCs) are the most common group of *F-gases*. They are usedin 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 aerosolsprays.

Sl 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

1	UltraTech Cement Limited, Jharsuguda Cement Works	At-Dhutra, PO-Arda, Dist-Jharsuguda (Odisha)	Not emitted	NA	NA
2	TRL Krosaki Refractories Ltd.	NA	NA	NA	NA
3	Lilari Opencast Project	Jurabaga	NA	NA	NA
4	Lakhanpur Opencast Project	21047'32''N &21043'12''N 83047'59''E &83051'30''E	NA	NA	NA

- 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 fireextinguishers 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 andaluminium.

Table : 6.5

6.6 Important Green House Gases: chlorofluorocarbons(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 Protocolon Substancesthat Depletethe 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 asrefrigerants.

Table : 6.6

Sl 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
1	UltraTech Cement Limited, Jharsuguda Cement Works	At-Dhutra, PO-Arda, Dist-Jharsuguda (Odisha)	Not emitted	NA	NA
2	TRL Krosaki Refractories Ltd.	NA	NA	NA	NA
3	Lilari Opencast Project	Jurabaga	NA	NA	NA
4	Lakhanpur Opencast Project	21047'32''N &21043'12''N 83047'59''E	NA	NA	NA

Ref.: IPCC (2007). Fourth Assessment Report, Technical Summary – Changes in Human and Natural Drivers of Climate & UNEP (2012). Emissions Gap Report; WMO (2013). Greenhouse Gas Bulletin

6.7 Green House GasSequestration

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 energyefficient;
- preventing new GHG emissions to be released in the atmosphere, e.g. by avoiding the construction of new emission-intensivefactories;
- preserving and enhancing sinks and reservoirs of GHGs, e.g. by protecting natural carbon sinks like forests and oceans, or creating new sinks (“carbonsequestration”).

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

Table 6.7 : Major Greenhouse Gases Contributors (Anthrpogenic) to Climate Change

Greenhouse Gas	Human Source(Examples)	% of Total Global GHG Emissions (2010)
Carbon dioxide (CO_2)	Fossil fuel combustion, landuse changes, cement production, etc	76%
Methane (CH_4)	Fossil fuel mining/distribution, livestock,riceagriculture,landfills, etc	16%
Nitrous oxide (N_2O)	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 electronicsand magnesium industry, etc	< 2%
Nitrogentrifluoride (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 CO_2 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 CO_2 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 CO_2 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

Table 6.8 : Details of forest as a major Carbon sink

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)
NA	NA	NA	NA	NA

6.8 Sectors with High Mitigation Potential

Table : 6.9

Sl No	Sectors	Mitigation Options
1	Energy	• Use of renewable heat and power (hydropower,solar, wind, geothermal andbio-energy) • Improved supply and distributionefficiency • Carbon capture storage(CCS) • Combined heat andpower
2	Transport	• More fuel efficientvehicles • 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 drivingpractices • Non-motorized transport (cycling,walking)
3	Industry	• Process-specific technologies that improve efficiency and reduceemissions • Material recycling andsubstitution • Heat and powerrecovery/cogeneration • Control of greenhouse gasemissions
4	Agriculture	• Manure and livestock management to reduce CH_4 emissions • Improved fertilizer application techniques to reduce N_2Oemissions. • Improved crop and grazing land management to increase soil carbonstorage • Restoration of cultivated peaty soils and degraded lands • Agro-forestrypractices
5	Forestry	• Reduceddeforestation • Afforestation/reforestation • Forestmanagement • Tree species improvement to increase biomass productivity and carbonsequestration
6	Waste	• Landfill methanerecovery • Waste incineration with energyrecovery • Composting of organicwaste • Controlled wastewatertreatment • Recycling and wasteminimization • Biocovers and biofilters to optimize CH_4oxidation

6.9 Sector specific climate change mitigation projects:

Table : 6.10

Sl No	Sector	Project Title	Period		Mitigation Targets
			From	To	
1.UltraTech Cement Limited, Jharsuguda Cement Works	Energy	Solar	01.07.2019	31.03.2022	We are in the process of installing 2 MW Solar Plant.
2.TRL Krosaki Refractories Ltd.	Materialrecycling& reuse Replacement of MV/SV/MH by LED lamps		Ongoing 2017 to 2022		Regular Is in progress

N.B.: Please fill in the above table with Project undertaken exclusively for Climate Change Mitigation.

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Chapter – 7

Safety of Schools and Child Care Institutions

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

7.1 Order on WP(C) 483/2004 of Hon'ble SupremeCourt

TheHon'bleSupremeCourtvideordersofdated14.08.2017inWP(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 asfollow:

- Time bound implementation of theGuidelines
- DistrictDisasterManagementAuthoritytoensureandmonitorcomplianceofthesaid Guidelines
- District Education Officer of each Districttobea "Noda lofficer"with responsibility ,liability and obligationaswellaspowersandfunctionstoensurestrictcompliancewiththeGuidelines within the district of hisjurisdiction.
- Joint Monitoring Committee consisting of representations of both Department of School Education&Literacy,MinistryofHRDandNDMA
- QuarterlycompliancereportsfromtheChiefSecretarytoMHRDandNDMAontheactions taken.

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

State & District Level	School Level:
Policy for safety audits in all schools 'Stability certificate' by Government-certified engineer. Manual for fire safety procedures and other safetyprecautions The National Building Code of India, 2005, to construct fire-safe buildings. (Revised2016)	Schools must take appropriate safety measures andanemergencyresponseplanthatdelineates staff responsibilities, communication modes, and training and updating procedures for all members of the faculty, staff andstudents. Fire insurance coverage should be made mandatory for all schools. Ensuring that the kitchen in the precincts of the school has adequate safetymechanisms.

Ref.: FireSafetyMeasuresinSchools(Section3.1p-23)/TrainingofSchoolTeachers&OtherStaff (Section3.1p-25)/SchoolBuildingSpecifications(Section3.1p-27)Clearance&Certificates(Section 3.1 p-29)SC. ***Judgement on WP(C) 483/2004***

7.2 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 fromlarge- 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 ofchildren.

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 well being during the pursuit ofeducation.
- Educational continuity is maintained/ resumed even in the immediate aftermath of adisaster so that Children are physically, mentally and emotionally secure within their schools.

Approach and Objectives

- All hazardapproach.
- Allschools;allstakeholders2.Strengtheningexistingpolicyprovisionstomakeschoolssafer
- SchoolSafetyasanindicatorofqualityforcontinuedplanning,executionandmonitoring
- Primaryobjectiveistoensurethecreationofsafelearningenvironmentforchildren.
- Alsoseektohighlightspecificactionstowardsschoolsafetythatcanbeundertakenbydifferent stakeholderswithintheexistingframeworkofdeliveryofeducation.

Applicability

- TheNationalSchoolSafetyPolicyGuidelinesapplytoallschoolsinthecountry-whether government,aidedorprivate,irrespectiveoftheirlocationinruralorurbanareas.
- TheyapplytoallstakeholdersinvolvedindeliveryofeducationtoChildreninIndia

All hazard approach

- School Safety efforts needs to take cognizance of all kinds of hazards that may affect the wellbeing ofchildren.
- Hazards include structural and non-structuralfactors.
- 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, infestationofthecampusbysnakesandanyotherpests,brokenornoboundarywalls, unevenflooring,blockedevacuationroutes,poorlydesignedandplacedfurniturethat may cause accidents and injury, inadequate sanitation facilities,etc.

Right to Education Act 2009

Key Action Areas

1. **InstitutionalstrengtheningattheState&Districtlevels**
   - Co-optingseniorofficialsoftheDepartmentofEducationinSDMAandDDMA.
   - Nomination of School Safety Focal Point Teacher & Sensitization of School Management Committee onDM.
2. **Planning forSafety**
   - StructuralMeasures(includingsiting,designanddetailingforstructuralsafety).
   - Non structuralMeasures.
   - Preparation&implementationofSchoolDisasterManagementPlan.
   - Leveragingexistingflagshipprogrammestomakeschoolcampussafer.
3. **Capacity building for safeschools**
   - Training for students and schoolstaff
   - SpecializedtrainingandskillbuildingofEducationofficers,representativesofSCERTand DIET,SDMA,DDMA,etconschoolsafety
   - MockDrills
4. **DisasterManagementinCoreCurriculum**
5. **RegularmonitoringofriskandrevisionofSchoolSafetyPlans(includingSafetyAudits&Availability of EmergencyEquipment).**

7.3 Category &type of schools

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

	Rura l	Urba n	Rura l	Urba n	Elementar y	Secondar y	Elementar y	Secondar y
Jharsugud a	89	91	11	15	07	11	39	18
Kirmira	71	0	09	0	01	0	05	01
Kolabira	68	0	09	0	02	02	06	02
Laikera	74	0	07	0	03	05	05	01
Lakhanpu r	280	16	18	02	06	16	16	06

7.4 Category &type of students

Name of the Block	Government Schools				Government Aided schools		Private Schools	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				
Jharsuguda	6880	11249	1024	2380	764	1912	18667	2641
Kirmira	3396	0	1376	0	55	0	915	0
Kolabira	4518	0	605	0	116	212	761	203
Laikera	4930	0	742	0	134	605	646	93
Lakhanpur	13356	2055	1803	373	184	2039	5676	933

School Safety Advisory Committee(District)

1. Date of Formation6.6.2018
2. InstitutionalArchitecture

District Level School Safety Committee, Jharsuguda

Sl No	Name	Designation	Contact Details			
			Mobile No. (Official)	Land Phone (Office)		E- mail ID
				Code	No.	
1	Shri Saroj Kumar Samal	Collector & DM	9438162022	6645	271692	jharsuguda@nic.in
2	Shri Bikash Chandra Dash	Superitendent of Police	9437208862			spjsd.odpol@nic.in
3	Shri Ramesh Ch Mohanty	Divisional Forest Officer	8249096469			afojharsuguda@gmail.com
4	Shri Biswadarshi Sahoo	Dist. Welfare Officer	9437881811			dwo.jharsuguda@gmail.com
5	Sri Suprava Seth	Dist. Social Welfare Officer	9437016505			dswojharsuguda@nic.in
6	Dr L Rourtray	Chief Dist. Medical Officer	9439986890	6645	273104	CDM & PHOjharsuguda@gmail.com
7	Sibaram Pradhan	Executive Engenior RWSS	9438419972			eerwss_jha@ori.nic.in
8	Shri Gobinda Dansena	Dist. Emengency Officer	9438852757	6645	272902	deocjsg@gmail.com
9	Shri Lalit Mohan Khamari	Principal , DIET	8249714476			dietjharsuguda@gmail.com
10	Shri Pradipta Kumar Sa	Block Education Officer, JSG	9937510343			beojharsuguda.sme.od@nic.in
11	Smt Anadini Padhi	NGO/Director SEHEDA	8943734746	6645	274178	sehada(a)rediffmail.com
12	Shri Dambaru Dhara Pujari	SDRT Member, DRCB, JSG	9437560021			dpujari10@gmail.com
13	Smt Minarani Mangal	Dist. Project Co-odinator, SSA	9437250744			dpcjharsussa.opepa@nic.in
14	Shri Pramod Kumar Sarangi	Dist. Education Officer	9437082963	6645	273060	deojharsuguda14@gmail.com

7.5 **Details of School Safety in the district:** The committee was constituted and approved on6.6.2018.

SlNo	Activity	Total School	Achieved				
			Block 1	Block2	Block 3	Block 4	Total
1	Schools having School Safety Advisory Committee**(Number)**	**355**	**283**	**301**	**325**	**355**	**355**
2	Schools having Scholl Disaster management Plan**(Number)**	**55**	**67**	**100**	**120**	**285**	**285**
3	Schools having conducted Safety Audits (Structural)**(Number)**	**0**					
b	Safety Audits (Non-Structural)**(Number)**	**0**					
4	Schools having conducted Annual Mock Drills**(Number)**	**355**					**14**
5	Schools Having Fire Extinguisher**(Number)**	**355**					**nil**
6	Schools Adhering to safety norms in storing inflammable & Toxic Material**(Number)**	**0**					**nil**
7	Schools confirming safety standards as per local building bye-laws (Latest)**(Number)**	**0**					
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)**	**0**					
9	Schools where students & teachers undergo regular training on School Safety & Disaster Preparedness **(Number)**	**0**					
10	Schools where disaster management is being taught as part of the curriculum **(Number)**	**0**					

7.6 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.]

Sl. No.	Name of the Programme	No. of Schools, Colleges and Other Educationalinstitutionstobecovered during theyear	Time Line	Remarks
1	Awareness generation and mock drills for fire/ earth quake etc.	MMCH, Brajarajnagar	Nov to Dec 2022	By ODRAF and Fire Services, Jharsuguda
		ThakarbapaSevashram , Belpahar		
		Jharsuguda Manmohan High school		
		P S Degree College,Kolabira		
		Mahima College, Lakhanpur		
		D P S College , Kirmira		
		High School, Laikera		
		Kendriya Vidyalaya , Jharsuguda		
		L N College Jharsuguda		
2	Preparation of School disaster management plan	150 School disaster management plan	July to September	150 schools @ 30 High Schools/ ME Schools Per Block

Details of Child Care Institutions

Sl No.	Block/ ULB	Name and Address of the Organization	Boys	Girls	Total No of Children	NameandContactno.oftheShift- in-Charge	Fire Safety Equipments (Fire Extinguisher, Alarm)	Staff Training on FireSafety Equipment	Nearby open space for evacuation	Alternative Shelter/s Identified
1	JHARSUGUDA	Thakkar Bapa Seva Sadan	19	20	39	Nirakar Kisan Phone No-9937118695 TikeswarSuna Phone No-7008544976	YES	YES	YES	YES
2		Mercy Memorial Children Home	11	08	19	Rev.Dr. B.K.Pattnaik Phone No-9437050324 PremaManjariPattnaik Phone No-7064402004	YES	YES	YES	YES
3		Mercy Memorial Children Home (SAA)	1	4	5	Rev.Dr. B.K.Pattnaik Phone No-9437050324 RanjitaTanty Phone No-7978623352	YES	YES	YES	YES
4		Mercy Memorial Children Home (Open Shelter)	4	2	6	Rev.Dr. B.K.Pattnaik Phone No-9437050324 BikashBebarta Phone No-9090928082	YES	YES	YES	YES

□□□

Chapter – 8
Capacity Building Measures

8.1 – 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 becomingdisasters

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.

8.1 Capacity Building of Govt. Officials, PRI Members etc.:

[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. Indicative list of training programmes is given below.]

Sl. No.	Name of the Course/ Training Programme	Participants	Duration of the Training Programme	Month of Organization	To be Organized by	Remarks if any
1.	Orientation training programme on disaster management	ADM, Sub-Collector All BDOs, Tahasildars, Head of line departments, Police & Fire Dept. etc.	½ day		DDMA/ Collector	To be Coincided with the First Quarter Meeting of the DDMA

Sl. No.	Name of the Course/ Training Programme	Participants	Duration of the Training Programme	Month of Organization	To be Organized by	Remarks if any
2	Training programme on heat wave preparedness	All BDOs/ EE RWS &S, CDM & PHO, CDVO, NGOs, etc.	1 day		DDMA/ Collector	
3	Hospital preparedness and mass causality management including hospital management plan	Doctors and Hospital Administrators			CDM & PHO	
4	Training progamme on treating heat wave related health issues	Doctors and Paramedical Staff/ ANMs	1 day		CDM & PHO	
5	Mass Casualty Management.	Para Medics/Police/ RPF/Home Guard/Fire and Civil Defense/ Railway Officials			DDMA	
6	Earth quake resistant construction	Asst. Engineers & JEs	1 day			
7	Post disaster damage assessment	AEs of all Blocks and line departments	1 day		DDMA	
8	GIS mapping of Utilities	Block Computer Programmers, Line Department MIS officials	1 day			
9	Public health in emergencies- safe drinking water and sanitation	All BDOs, Block and district level officials of PHED/ RWS & S Dept.			CDM & PHO	
10	Training of teachers on school safety including DM plan and conduct of Mock Drills	Principal/ Head Masters of all Govt. & Private Institutions	1 day		DEO	
11	Role of PRIs and ULBs in disaster management.	Members of ZP and ULBs, Chairman & Vice Chairman of PS.	1 day		DDMA/ Collector	
12	Block level training programmes on role of PRIs in disaster management	Sarapanchas& PS members	1 day		BDO	

Sl. No.	Name of the Course/ Training Programme	Participants	Duration of the Training Programme	Month of Organization	To be Organized by	Remarks if any
13	Role of NGOs/VOs/CBOs in disaster management.	District and block level NGOs/ VOs involved with district administration in disaster management			DDMA/ Collector	
14	Training of ZKSS and BKSS members on basics of disaster management and creating community level awareness for dos and don'ts related to common disasters.	ZKSS and BKSS members		1 day	District Culture Officer/ DIPRO	
15	Search & rescue and safe evacuation.	Civil Defense Volunteers, NSS, NYK Volunteers, NCC	5 days		SP/ Asst. Commandant of the nearest ODRAF unit.	
16	Training of Masons on earthquake resistant construction.					
17	Role of Media in Disaster Management	Media Personal	1 day		DIPRO	

8.2 District/ Block level MockDrills:

[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.]

Sl. No.	Type of Mock Drill	Officials/ Institutions to be involved	Month/ Date	Remarks
1	Tsunami			
2	Flood	BDO Lakhanpur, 2 MFS Shelters	JULY	
3	Cyclone			
4	Earthquake			
5	Industrial Accidents/ Industry Specific Mock drills	BDO Jharsuguda	DEC	
6	Crowd Management	BDO Jharsuguda	OCT	

8.3 Community Capacity Building and Community Based DisasterManagement:

[District to chalk out detailed plan for community capacity building for disaster management which includes formation of village disaster management committees and task forces, their orientation and preparation of village disaster management plans. The villages having multi hazard vulnerability or having more vulnerability towards flood, cyclone and tsunami may be selected in the first phase i.e. for financial year 2018-19]

Sl. No.	Block Name	No. of vulnerable villages to be covered during 2018-19	No. of VDMC and task force member to be oriented	No. NGOsto be involved in the process	Time line	Remarks
1	Lakhanpur GP-Konaktora	8	40	2	OCT/NOV	
2	Lakhanpur GP-Remta	8	40	2	OCT/NOV	

[Block wise village list for 2018-19to be given in Volume II of the DDMP]

8.4 Capacity building of Cyclone and Flood Shelter Maintenance & Management Committee and Task Forcemembers:

[*Note: the districts having Cyclone and Flood Shelter constructed by OSDMA, to draw detailed action plan for formation of CSMMC & FSMMC and training of task forces.]*

Sl. No.	Name of the Training Programme	Total No. of Persons to be trained	No. of Training Programmes to beorganized	Time Line	Remarks if any
1	Orientation of CSMMC and FSMMC	100	2	Aug/ sep	
2	Training of task force members on Search& Rescue and FirstAid	40	2	Sep/oct	
3	Red Cross Volunteers	100	4	Sep/oct	
4	NGO Volunteers	100	4	Sep/oct	

Shelter level mock drills:

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	2	8	Aug/sep

? ? ?

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
Vedanta Limited – Jharsuguda – JH121	Large	Smelter & Power	Village Bhurkamunda, Jharsuguda	21'79"North 84'05"East	Mr. Deepak Prasad	COO – Metal (Factory Manager)	Deepak.prasad@vedanta.co.in	9993000538
Vedanta Limited – Jharsuguda – JH129	Large	Power	Village :Banjari Jharsuguda	21'83"North 83'05"East	Mr. Anjan Sinha	COO – Power (Factory Manager)	Anjankumar.sinha@vedanta.co.in	9078875411
Ib Thermal Power Station	Large	Generation of Electric Power (2x210MW)	Ib Thermal Power Station, Banharpali, Jharsuguda, Odisha 768234	21'42'' North and 83'52'' East	Sudhakar Swain	Plant Manager	sudhakar.swain@opgc.co.in	0933 8715 426
IB Thermal Power station, OPGCII(Unit#3&4)	Large	Generation of Electricity Power	At/Po: Banaharpali, Dist: Jharsuguda, Pin:768234	21' 42'' North &83' 52'' East	Sri Sukanta Mohapatra	Plant Manager	Sukanta.mohapatra@opgc.co.in	9937022575
Indane Bottling Plant Jharsuguda	Small	LPG Bottling with 18000 Cylinders/ Day	Panchapada, Jharsuguda	21.8554 North, 84.0062 Deg East	Subal Sai	Chief Plant Manager	subalsai@indianoil.in	9437035407
IOCL JHARSUGUDA TOP	Large	Storage and dispatch of petroleum	**At: Malimunda , PO: Talmal, Jharsuguda, Odisha**	Latitude – 21.8 Deg North, Longitude –	Sh S C Mahapa	Chief terminal	**mohapatrasarat@indian**	**94375649**

		product(MS,HSD,SKO)		84.00 Deg East	tra	Manager	**oil.in**	**04**
TRL Krosaki Refractories Limited	Large	Manufacturing of Refractory Bricks & Monolithics Capacity: 250000 MT per Annum	AT: Belpahar Dist: Jharsuguda Odisha PIN:768218	21°48'01" N 83°51'41"E	Dr. Tarapada Dash	Sr. VP (Corporate Services)	tarapada@trlkrosaki.com	9937667900
FORTIS CHEMICALS	SMALL	OLEO CHEMICALS: 2730 MT/MONTH	AT: RAGHUNATHPALI DIST: JHARSUGUDA	Latitude: 21.49° N Longitude: 84.08° E	Mr. H.K. Rout	GM (Operation)	hkrout@fortischemocals.com	7381076680
UltraTech Cement Ltd.	Medium	Manufacturing of Portland Pozzolana Cement from Clinker Stage	At- Dhutra, Po: Arda, Dist: Jharsuguda, Odisha – 768202	21.8919663, 84.0990781	Deviprasad Vuriti	Senior Vice President	deviprasad.vuriti@adityabirla.com	7574896447
L N Metallics Limited	Small	2 X 100 TPD	At/PO-Sripura, Dist-Jharsuguda .	21.14021/83.41216	Vijay Kadam	G.M. (Tech.)	lngroupjsg@mail.com	8763147001
M/s SMC Power Generation Limited.	Medium	Sponge-200000 per annual, Billet-250000 per annual & TMT bar 180000 per annual	M/s SMC Power Generation Limited, Hirma, Badamal, Jharsuguda, Odisha.	21.795389671640343, 83.99167216189429	Sh. K.Ravindra Kumar	Factory Manager	site@smcpower.co.in	9238473188
M/s SMC Power Generation Limited. Badmal, Jharsuguda	Medium	Nil	M/s SMC Power Generation Limited, Badamal, Jharsuguda, Odisha.	21.81863487357234, 83.99954304414436	Sh. J. P. Sharma	Executive Director (Works)	jpsharma@smcpower.co.in	9937220624
M/s APAR Industries Limited	Large	Aluminium & Alloy Conductor	Raghunathpali, Kolabira Jharsuguda.	21.8035° N, 84.1738° E	Shri. Rajesh Rangani	GM-Operation	Rajesh.ranganI@apar.com	9909027612

9. 2 Hazardous Chemical Storage Details

Table-9.2

Hazardous Chemical Storage Points Details											
Organisation 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/Cylindrical)**	**Type of Alignment (Horizontal/ Vertical)**	**Hazard Anticipated (Fire/Explosion/ Toxic release)**	**MSDS (Material Safety Data Sheet) of the Chemicals**	**Vulnerable Zone in case of Emergency (Radius in Km/Meter)**	**Down wind Distance**	**Total Number of People in the Vulnerability Zone**
VL-JH-121 (P-1)	Propane	Flammable / Explosive	54 M3	Above Ground	Bullet	Horizontal	Fire / Explosion	YES			
VL-JH-121(P-2)	Propane	Flammable / Explosive	120 M3	Above Ground	Bullet	Horizontal	Fire / Explosion	YES			
VL-JH-121 (BO-P-1)	HFO – Heavy Fuel Oil	Flammable	520 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (BO-P-1)	HFO – Heavy Fuel Oil	Flammable	96 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121	HFO – Heavy	Flammable	1100 KL	Above Ground	Cylindrical	Vertical	Fire	YES			

(BO-P-2)	Fuel Oil										
VL-JH-121 (BO-P-2)	HFO – Heavy Fuel Oil	Flammable	96 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (CPP)	HFO – Heavy Fuel Oil	Flammable	0 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (CPP)	HFO – Heavy Fuel Oil	Flammable	0 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (CPP)	LDO-Light Diesel Oil	Flammable	170 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-129 (TPP)	HFO – Heavy Fuel Oil	Flammable	0 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-129 (TPP)	HFO – Heavy Fuel Oil	Flammable	0 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-129 (TPP)	LDO-Light Diesel Oil	Flammable	520 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (P-1)	High Speed Diesel	Flammable	40 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-121 (P-2)	High Speed Diesel	Flammable	36 KL	Above Ground	Cylindrical	Vertical	Fire	YES			
VL-JH-129 (IPP)	Hydrogen	Flammable / Explosive	136 Kg	Above Ground	Tank	Vertical	Fire / Explosion	YES			
VL-JH-121 (P-	Ammonia	Reactive / Toxic	720 Kg	Above Ground	In Cylinders	Vertical	Toxic Release	YES			

1&2-Cast House)											
Ib Thermal Power Station	LDO	Flammable	700KL	Above Ground	Cylindrical	Vertical	Fire/ Explosion	YES	135.4 meter		02
	Hydrogen	Flammable	0.135 MT	Above ground	250 nos of Individual Cylinders	Vertical	Fire/ Explosion	YES	34.34 meters		40
	Chlorine	Toxic	7.2 MT	Above ground	08 nos. of cylindrical Tonner	Horizontal	Toxic release	YES	645 meter of LD 50		300
	Transformer oil	Flammable	102 KL	Above ground	GT of 2 nos, each having capacity of storing 54.4 KL, ST of 2 nos, each having capacity of storing 38 KL, UAT of 4 nos, each having capacity of storing 10.5 KL,	Vertical	Fire/ Explosion	YES	2.18 meter		Nil
IB Thermal Power station, OPGCII (Unit# 3&4)	Chlorine	Toxic	94Tonners(84.6tn)	On the Ground	Cylindrical	Horizontal	Toxic Release	YES	1.1Km		1450nos
	Hydrogen Gas	Flammable	200Cylinder(0.134Tn)	On the Ground	Cylindrical	vertical	Fire & Explosion	YES	16mtr		5nos
	Light Diesel Oil (LDO)	Flammable	10000KL	On the ground	Cylindrical	Vertical	Fire & Explosion	YES	43Mtr		5nos

	Heavy Furnace Oil (HFO)	Flammable	10000KL	On the Ground	Cylindrical	Vertical	Fire & Explosion	YES	30Mtr		5nos
	Transformer Oil	Flammable	695KL	Above the ground	Cylindrical	Horizontal	Fire & Explosion	Yes	144Mtr		15nos.
Indane Bottling Plant Jharsuguda	Used Oil	Flammable	400 Litres	On the Ground	Cylindrical		Fire	YES	2 Metres	NA	NA
IOCL JHARSUGUDA TOP	POL PROUCTS(MS, HSD,SKO)	**Flammable/**	49119KL	Above Ground	Cylindrical	Vertical	**(Fire/Explosion)**	YES	100 MTR	NA	NA
TRL Krosaki Refractories Limited	Furnace Oil	Flammable	1715 KL	Above Ground	Cylindrical	Two tanks vertical & 11 tanks horizontal	Fire	Yes	15M	15 M	17
	HSD	Flammable	76.5KL	Under ground	Cylindrical	Horizontal	Fire	Yes	4.5M	4.5 M	2
	Producer Gas	Toxic	No storage. Maximum production capacity 9000 Nm3/hr.	Transported through above ground pipelines	NA	NA	Toxic	Yes	115M	115 M	60
	Transformer Oil	Flammable	28560 Ltr.	Inside Transformers & drums	NA	NA	Fire	Yes	NA	NA	
FORTIS CHEMICALS	PHENOL	FLAMMABLE	75 MT	ABOVE GROUND	CYLINDRICAL	VERTICAL	FIRE	YES	3 Meter	17.2 Mtr	

										.	
	PROCESSED OIL	FLAMMABLE	60 MT	ABOVE GROUND	CYLINDRICAL	VERTICAL	FIRE	YES	3 Meter	17.9 Mtr.	
UltraTech Cement Ltd.	HSD	**Flammable**	20KL	**Under Ground**	**Box Type**	Horizontal	**Fire/Explosion**	YES	14Mtr	1-4	Zero
L N Metallics Limited	Used oils	Flammable	200 ltrs	Above ground	Cylindrical	Vertical	Fire	NO	100 mtrs		Nil
M/s SMC Power Generation Ltd.	Hydro Chloric Acid	Flammable	900 Kg	On the Ground	Plastics Barrels	Horizontal	Fire	Available	02 to 03 Mtrs.	50 Fts	15 nos Persons
	Caustic Soda	Non Flammable	500 Kg	On the Ground	Plastics Bag	Horizontal	Toxic release	Available	Under 01 Mtrs.	50 Fts	15 nos Persons
	Sulphuric Acid	Non Flammable	2000 Kg	On the Ground	Plastics Barrels	Horizontal	Toxic release	Available	03 to 05 Mtrs.	50 Fts	15 nos Persons
M/s SMC Power Generation Ltd. Badmal	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
M/s	Diesel	Flammab	30 KL	Above	Cylindrical	Horizontal	Explosion	YES	NIL	NIL	NIL

APAR Industries Limited		le / Explosive		Ground							

9.2 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
Vedanta Limited – Jharsuguda – JH121	Plant equipment & machineries	SCHOOL	Village Bhurkamunda, Jharsuguda	21'79"North 84'05"East	Mr. Deepak Prasad	Deepak.prasad@vedanta.co.in	9993000538	3000
Vedanta Limited – Jharsuguda – JH129	Plant equipment & machineries	SCHOOL	Village :Banjari Jharsuguda	21'83"North 83'05"East	Mr. Anjan Sinha	Anjankumar.sinha@vedanta.co.in	9078875411	4000
Ib Thermal Power Station	Plant equipment & machineries	NA	Thermal Colony, Banharpali	21'42'' North and 83'52'' East	Sudhakar Swain	sudhakar.swain@opgc.co.in	09338715426	Inside plant-800 including contractor employees
Indane Bottling Plant Jharsuguda	A few shops	NA	Panchapada, Jharsuguda	Latitude – 21.8554 Deg North, Longitude – 84.0062 Deg East	Subal Sai	subalsai@indianoil.in	9437035407	200

IOCL JHARSUGUDA TOP	Nil	Nil	na	Na	Na	na	na	na
TRL Krosaki Refractories Limited	High Alumina Office	Plant Office	TRL Krosaki Refractories Limited	21.8033° N, 83.8628° E	Mr. Swaraj Mund	swaraj.mund@trlkrosaki.com	9078887033	10
	Logistic Office	Plant Office			Mr. Asim Guru	asim@trlkrosaki.com	8455868097	3
	Compressor House	Plant Office			Mr, S K Das	sushant@trlkrosaki.com	8455867910	4
UltraTech Cement Ltd.	Fire extinguisher, Fire proximity suit.	Industry	Indian Oil Depot, Jharsugua-768201	21.892566, 84.066354	Saratchandra Mohapatra	mohapatrasarat@indianoil.in	9437564904	Nil
M/s SMC Power Generation Limited, Hirma.	DM Plant	Under the Shead	Hirma, Jharsuguda	21.795389671640343, 83.99167216189429	Sh. Kishor Bacha.	site@smcpower.co.in	7064406314	15 numbers
M/s SMC Power Generation Limited, Badmal, Jharsuguda	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

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**

Vedanta Limited – Jharsuguda – JH121	Factories Act, 1948 & Orissa Factories Rules	Yes - Available	Occupational Health and Safety Management system as per ISO:45001.
	Consent under Air Act & Water Act from SPCB, Odisha		Constitution of Safety Committee and regular meetings
Vedanta Limited (JH-121, Jh129)	NOC from Fire Department	Yes - Available	Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (Control of MAH) Rules, 2001		Safety Report, Safety Audit
			Status of Stability Certificate wrt plant & buildings
			On Site Emergency Plan
			Risk Assessment Study
			Mock Drills
			Periodical Inspections
Vedanta Limited – Jharsuguda – JH121	Factories Act, 1948 & Orissa Factories Rules	Yes - Available	Occupational Health sand Safety Management system as per ISO:45001.
Ib Thermal Power Station	Factories Act, 1948 & Orissa Factories Rules	Stability study done	Status of Stability Certificate wrt plant & buildings
	Consent under Air Act & Water Act from SPCB, Odisha	Obtained	Constitution of Safety Committee and regular meetings
	NOC from Fire Department	Applied	Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	NA	Safety Report
		Conducted by NSC,Odisha Chapter	Safety Audit
		Approved by DFB,Odisha	On Site Emergency Plan
		Conducted	Risk Assessment Study
		Conducted periodically	Mock Drills
		Are being conducted	Periodical Inspection
		Are being imparted	Training & Awareness
IB Thermal Power station, OPGCII(Unit#3&4)	Factories Act, 1948 & Orissa Factories Rules	Available.	Status of Stability Certificate w.r.t plant & buildings

	Consent under Air Act & Water Act from SPCB, Odisha	Available	Constitution of Safety Committee and regular meetings.
	NOC from Fire Department	Available	Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	Submitted to DF&B. on 16.01.2019	Safety Report
		Conducted on Nov'2020.	Safety Audit
		Approved by DF&B,03/04/2019	On Site Emergency Plan
		HAZOP Study done of hazardous processes.	Risk Assessment Study.
		Conducted half yearly. Last mockdrill conducted on31.03.2022	Mock Drills
		Periodic inspection conducted	Periodical Inspection
		Community awareness & Training conducted.	Training & Awareness
Indane Bottling Plant Jharsuguda	Factories Act, 1948 & Orissa Factories Rules	Available	Status of Stability Certificate wrt plant & buildings
	Consent under Air Act & Water Act from SPCB, Odisha	Available	Constitution of Safety Committee and regular meetings
	NOC from Fire Department	Available	Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	Available	Safety Report
		Available	Safety Audit
		Available	On Site Emergency Plan
		Available	Risk Assessment Study
		Available	Mock Drills
		Available	Periodical Inspection

		Available	Training & Awareness
IOCL JHARSUGUDA TOP	Factories Act, 1948 & Orissa Factories Rules	Available	Status of Stability Certificate wrt plant & buildings
	Consent under Air Act & Water Act from SPCB, Odisha	Available	Constitution of Safety Committee and regular meetings
	NOC from Fire Department	Available	Deployment of Safety & Welfare Officers
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	Available	Safety Report
		Available	Safety Audit
		Available	On Site Emergency Plan
		Available	Risk Assessment Study
		Available	Mock Drills
		Available	Periodical Inspection
		Available	Training & Awareness
TRL Krosaki Refractories Limited	Factories Act, 1948 & Orissa Factories Rules – License no-JH-16, valid till 31.12.2022	Safety health policy is available	Status of Stability Certificate wrt plant & buildings- All the relevant infrastructures of the plant has been tested & certified by competent persons declared by DFB, Odisha.
	Consent under Air Act & Water Act from SPCB, Odisha-Consent order-21 & its valid till 31.03.2023		Constitution of Safety Committee and regular meetings- Formed & meeting is being conducted once in every month.
	NOC from Fire Department- Applied		Deployment of Safety & Welfare Officers- 3 nos Safety Officers & 3 nos welfare officers.
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001		Safety Report- Not Applicable
			Safety Audit- We have annual audit plan & audit is being conducted as per schedule.
			On Site Emergency Plan- Approved & in force.
			Risk Assessment Study- Yes. We have HIRA for all the activities.
			Mock Drills- Is being conducted twice / year.
			Periodical Inspection- CICG inspection has been done 13.01.2022 by Asst Director (F&B).

			Training & Awareness- Training calendar is made each year & accordingly training is being imparted.
FORTIS CHEMICALS	Factories Act, 1948 & Orissa Factories Rules Factory License No: JH-132, valid upto 31/12/2022	Updated	Status of Stability Certificate wrt plant & buildings: Stability Certificate Obtained
	Consent under Air Act & Water Act from SPCB, Odisha Consent to Operate No: 143/IND-V-CON-80, valid upto 31/03/2025		Constitution of Safety Committee and regular meetings: Functional
	NOC from Fire Department: Obtained		Deployment of Safety & Welfare Officers: Yes
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001		Safety Report: Complied
			Safety Audit: Every month by Safety Officer
			On Site Emergency Plan: Certified on 12/07/2016
			Risk Assessment Study
			Mock Drills: Conducted twice a year
			Periodical Inspection: Ongoing
			Training & Awareness: Ongoing
UltraTech Cement Ltd.	Factories Act, 1948 & Orissa Factories Rules	Available	Status of Stability Certificate wrt plant & buildings- Done
	Consent under Air Act & Water Act from SPCB, Odisha	Obtained	Constitution of Safety Committee and regular meetings- Done
	NOC from Fire Department	Obtained	Deployment of Safety & Welfare Officers- Done
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	NA	Safety Report- being maintained
			Safety Audit- Done
			On Site Emergency Plan- Available
			Risk Assessment Study- HIRA done
			Mock Drills- Done as per schedule
			Periodical Inspection- Done
			Training & Awareness- Done
L N Metallics Limited	Factories Act, 1948 & Orissa Factories Rules	Obtained	Status of Stability Certificate plant & buildings- obtained

L N Metallics Limited	Consent under Air Act & Water Act from SPCB, Odisha	Obtained	Constitution of Safety Committee and regular meetings- Done on regular basis
	NOC from Fire Department		Deployment of Safety & Welfare Officers-NA
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) Rules, 2001	Obtained	Safety Report-done
			Safety Audit-
			On Site Emergency Plan-obtained
			Risk Assessment Study
			Mock Drills-done
			Periodical Inspection
			Training & Awareness-done
M/s SMC Power Generation Limited, Hirma, Jharsuguda, Odisha	Factories Act, 1948 & odisha Factories Rules	Valid up to 31/12/2022	Statues of stability certificate wrt plan & buildings
	Consent under Air Act & Water Act from SPCB, Odisha	Valid up to 31/03/2023	Deployment of safety committee and regular meetings
	NOC from fire department	Yes	Safety report
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) rules, 2001	Yes	Safety audit
			On site emergency plan
			Risk assessment study
			Mock drills
			Periodical inspection
			Training & awareness
M/s APAR Industries Limited	Factories Act, 1948 & Orissa Factories Rules	Submitted at Director of Factories & Boilers office, BBSR	Status of Stability Certificate wrt plant & buildings- Done on 16.09.2019 & Submitted.
	Consent under Air Act & Water Act from SPCB, Odisha	IND-V-Con-197/521, 31.03.2026	Constitution of Safety Committee and regular meetings- Conducted on regular Basis.
	NOC from Fire Department	09/2020/NR (FPW), 18.03.2022	Deployment of Safety & Welfare Officers- 1 & 1
	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
M/s SMC Power Generation Limited, Badmal, Jharsuguda, Odisha.	Factories Act, 1948 & odisha Factories Rules	Valid up to 31/12/2022	Statues of stability certificate wrt plan & buildings
	Consent under Air Act & Water Act from SPCB, Odisha	Valid up to 31/03/2022	Constitution of safety committee and regular meetings
	NOC from fire department	On progress	Safety report
	Notification of Site (Rule 8 of Orissa Factories (C of MAH) rules, 2001	Yes	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
Vedanta Limited – Jharsuguda – JH121	Govt Hospital,Jharsuguda			Jharsuguda	768202					ICU
Vedanta Limited (JH-121, Jh129)	Govt Hospital,Jharsuguda			Jharsuguda	768202					BURN WARD
Ib Thermal Power Station	Company Hospital	ITPS, Banharpali	Jharsuguda	JSG	768234		Dr.B.L.Biswal	9437069511	bijaylal.biswal@opgc.co.in	Ambulance, 03 nos doctors & other paramedic staffs,
										AMBULANCE
IB Thermal Power Station	OPGC Hospital	IB Thermal Power station	Jharsuguda	Banaharpali	768234		Sri B.L Biswal (CMO)		bijaylal.biswal@opgc.co.in	AMBULANCE
	TRL Hospital	TRL, Gumadera	Jharsuguda	Belpahar						AMBULANCE
IOCL JHARSUGUDA TOP	GOVERNMENT HOSPITAL		Jharsuguda	Jharsuguda	768204	Latitude – 21.855 Deg North, Longitude – 84.0170 Deg East	Dr. B Routray	06645-273140	CDM & PHOjharsuguda[at]gmail[dot]com	ICU
TRL Krosaki Refractories Limited	TRL KROSAKI HOSPITAL	TRL Township, Belpahar	Jharsuguda	Belpahar	768218	21.8033° N, 83.8628° E	Dr.TK Das	8455867986	tkdas@trlkrosaki.com	ICU, BURN WARD,VENTILATOR,AMBULANCE
Fortis	Motilal Yadav	Sambalpur-	Jhar	jhar	76	21.87N, 83.99E	Sh.	70080860		Ventilator

Chemicals pvt.Ltd	Memorial Samleswari Hospital	Rourkela Highway, Beherapat.,	sugu da	sugu da	82 02		B.N.Pand a	10		
	Kolabira PHC									First aid only
UltraTech Cement Ltd.	Govt.		Jhar sugu da	Jhar sugu da	76 82 04	21.890159, 84.048652				ICU, BURN WARD,VENTILATOR,A MBULANCE
L N Metallics Limited	District Head Quarter Hospital	Malimunda, Jharsuguda	Jhar sugu da	JSG	76 82 02	21.89324/ 84.04881	Dr. B Routray	06645-273140	CDM & PHOjharsuguda @gmail.com	ICU, BURN WARD,VENTILATOR,A MBULANCE
M/s SMC Power Generation Ltd, Hirma	Motilal Yadav Memorial Samleswari Hospital	Sambalpur-Rourkela Highway, Beherapat.,	Jhar sugu da	Jhars ugud a	76 82 01	21.870130946259614, 83.99808964229771	Sh. B.N.Pand a	94370687 56		ICU, BURN WARD,VENTILATOR,A MBULANCE
M/s APAR Industries Limited	Government Hospital	Kolabira	Jhar sugu da	JSG	76 82 13	21.8035° N, 84.1738° E	Dr. Dolaman i Tandi	94399867 86		nil
M/s SMC Power Generation Ltd, Badmal	Motilal Yadav Memorial Samleswari Hospital	Sambalpur-Rourkela Highway, Beherapat.,	Jhar sugu da	Jhars ugud a	76 82 01	21.870190686373103, 83.99801454045021	Sh. B.N.Pand a	94370687 56		ICU, BURN WARD,VENTILATOR,A MBULANCE

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**
Jh-121	Jharsuguda City Fire Station		Jharsuguda	Jharsuguda	768201		Mr. Ramesh Mohanty	Asst. Fire officer			Fire Tender/Capacity
Jh-129	Jharsugu		Jha	Jhar	76		Mr.	Asst.			Foam Materials

	da City Fire Station		rsuguda	suguda	8201		Ramesh Mohanty	Fire officer			
Ib Thermal Power Station	Banharpali	ITPS, Banharpali	Jharsuguda	JSG	768234		Samuel Borh	Station Officer		9556940595	Fire Tender/Capacity
											Foam Materials
											Hoods
IB Thermal Power Station	Banaharpali	IB Thermal Power station	Jharsuguda		768234		Sri Pabitra Choudhury	Dy. Manager	Pabitra.choudhury@opgc.co.in	7682854499	Fire Tender/Capacity
MCL	Lakhanpur	Lakhanpur	Jharsuguda							06645252305	Foam Materials
Indane Bottling Plant Jharsuguda	Jharsuguda	Jharsuguda	Jharsuguda	Jharsuguda	768204	Latitude – 21.8554 Deg North, Longitude – 84.0062 Deg East	Ramesh Mohanty	Assistant Fire Officer		9438546264	Fire Tender/Capacity
											Foam Materials
											Hoods
IOCL JHARSUGUDA TOP	Jharsuguda	Jharsuguda	Jharsuguda	Jharsuguda	768204	Latitude – 21.8554 Deg North, Longitude – 84.0062 Deg East	Ramesh Mohanty	Assistant Fire Officer		9438546264	Fire Tender/Capacity
											Foam Materials
											Hoods
TRL Krosaki Refractories Limited	TRL Krosaki Fire station	TRL Krosaki Refractories Limited	Jharsuguda	Jharsuguda	768218	21.8033° N, 83.8628° E	Himansu Sekhar Panda	Assistant Manager	himansu@trlkrosaki.com	8455868164	Fire Tender/ Capacity-3200Litre
											Foam Materials-20 litre jar×40 nos= 800 litres
											Hoods-NA

FORTIS CHEMICALS PVT.LTD	KOLABIRA	Kolabira	jharsuguda	jharsuguda	768202	21.87N, 83.99E	Bipinbihari kailashpati	Sr.Fireman		9556613800	Fire Tender/Capacity
											Foam Materials
											Hoods
UltraTech Cement Ltd.	Kirmira	Kirmira	Jharsuguda	Jharsuguda	768220		Narottam Gardia	Fire officer		9938091794	Fire Tender/Capacity
											Foam Materials
											Hoods
L N Metallics Limited	Jharsuguda	Jharsuguda	Jharsuguda	JSG	768202	21.89 84.028	Ramesh Mohanty	Fire Officer	dm-jharsuguda@nic.in		Fire Tender/Capacity
											Foam Materials
											Hoods
M/s SMC Power Generation Ltd, Hirma	Jharsuguda Fire Station	Bijju Nagar	Jharsuguda	Jharsuguda	768202	21.88, 84.02	Sh. Ramesh Mohanty	Fire Officer	dm-jharsuguda@nic.in	06645-272715	Fire Tender (Water & Foam Type)
M/s SMC Power Generation Ltd, Badmal	Jharsuguda Fire Station	Bijju Nagar	Jharsuguda	Jharsuguda	768202	21.889863047223315, 84.02957655763952	Sh. Ramesh Mohanty	Fire Officer	dm-jharsuguda@nic.in	06645-272715	Fire Tender (Water & Foam Type)
M/s APAR Industries Limited	Kolabira	Kolabira	Jharsuguda	JSG	768213	21.8035° N, 84.1738° E	Mr. Ranjit Lakra	Station Officer	--	9439168118 / 112 / 06640285201/ 9556613800	Fire Tender/Capacity-2700 ltr.
											Foam Materials- Foam compound 100 ltr, foam making equipment -1 nos
											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				
ADFB	Director of Factories and boilers	Mr Manoj Ku Mishra	9668117930		
Executive Director	OSDMA	Mr S R Sahoo	8895485759		
	District Administration (Collector, Emergency Officer, ADM)	Mr Saroj Kumar Samal	9437226644		
	Home department				
	State pollution control board				
	RTO	Dinabandhu Sandhi	9437401437		
	Department of Factories and Boiler	Swaroop Jena	9437213135		
	CSO	Umesh Ch Swain	9438200044		
	NDRF				
	ODRAF	Manoj Ku Purohit	7377276191		
	NGO	SEHADA	9437347467		
	FIRE	Ramesh Chandra Mohanty	9438546264		
	OIL INDUSTRIES (HPCL, BPCL, IOCL)	Pravin Kumar	7763817481		

B. 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
	Nil						

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-NIL

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	CDM&PHO (District)	9439986890
2	Bio Terrorism/ War	Home Department	SP	
3	Animal Health Disaster	F&ARD Department	CDVO (District)	
4	Agro -Terrorism	A&FE Department	DAO	

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

	Member	Dept./Instt.	Contact Details

Table 10.3 Task Force
District Level Task force Team

Name	Designation	Contact No.
Dr Dolamani Patel	DPHO	9439986843
Dr Madhulita Sahu	ADPHO(DC)	9437648733
Dr Ratnakar Choudhury	Epidemiologist	9438529339

Rajendra Kumar Patra	MPHS(M)	9861429513
Srikanta Sahu	MPHS(M)	9439986888
Manas Kumar Patel	DEO	7978569096

Table 10.4 Technical Experts

	mber	pt./Instt.	ntact Details
1	Dr. Lalmohan Routray	CDM&PHO	9439986890
2	Dr Dolamani Patel	DPHO	9439986843
3	Dr Madhulita Sahu	ADPHO(DC)	9437648733
4	Dr Ratnakar Choudhury	Epidemiologist	9438529339

- A public health institution of eminence, matching international standards needs to be created, with following measures:
  - All existing public health institutionsproviding technical expertise in the area offield epidemiology, surveillance, teaching,training, research, etc., need to bestrengthened. The core capacity needs to be developed forsurveillance, border control at ports andairports, quarantine facilities, etc.
  - Each District will strengthen its public healthinfrastructure, including public healthinstitutions which would collectepidemiological intelligence, shareinformation with IDSP, provide for outbreakinvestigations and manage outbreaks.
  - Hospitals will develop capabilities to attendto mass casualties and public healthemergencies with isolation facilities. In the districts, DDMAs 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

me of the Institution, Address & Contact details of the contact (Nodal) Person	. of trained Doctors (Biological Disaster)	. of trained Paramedical staffs (Biological Disaster)	cilities available	uipment's available

Sl No	Name	Designation	Place of posting	Contact no
1	Dr Lalmohan Routray	CDM & PHO	DHH	9439986890
2	Dr. A. K. Pandit	Doctor MBBS	DHH	9437392564
3	Dr. Arun Kumar Das	Medicine Specialist	DHH	9437121273
4	Dr. Deepak Kumar Tripathy	O&G Specialist	DHH	9861438125
5	Dr. Dolamani Patel	Assistant District Medical Officer (PH)	DHH	9439986843
6	Dr. Harekrishna Satapathy	O&G Specialist	DHH	9437302768
7	Dr. Hrusikesh Naik	TB Specialist	DHH	9937450499
8	Dr. Jeetan Patel	Surgeon	DHH	9439391818
9	Dr. Latika Kishan	Doctor MBBS	DHH	8763075862
10	Dr. Laxman Kumar Karmi	District Leprosy Officer	DHH	9437347759
11	Dr. Prashanta Kumar Barik	ADMO (M)	DHH	9853383117
12	Dr. Purnendu Sekhar Biswas	Medical Officer	DHH	8763430330
13	Dr. R. M. Barla	SENIOR ASSISTANT SURGEON	DHH	9937815087
14	Dr. Rabindranath Majhi	DTO	DHH	9439999314
15	Dr. Ratnakar Choudhury	Epidemiologist	DHH	9439986825
16	Dr. S. N. Danta	SENIOR ASSISTANT SURGEON	DHH	9437132467
17	Dr. Sankar Prasad Panda	ENT	DHH	
18	Dr. Satyabrata Patel	Medical Officer	DHH	9437253434
19	Dr. Silwanti Jojo	Pathologist	DHH	9437254221
20	Dr. Suprava Barik	Assistant District Medical Officer(FW)	DHH	9439987001
21	Dr. Tanuja Patra	Medical Officer	DHH	9438654445
22	Dr. Trinath Pati	Orthopedician	DHH	9437119398
23	Dr. Sabita Patel	Medical Officer	Talpatia PHC	9439987029
24	Dr. S. Tierkey	Medical Officer	Rajpur CHC	9439987027
25	Dr. Mitrabandu Patnaik	Medical Officer	Loising PHC	8280329402
26	Dr. Jasnita Bhoi	Medical Officer	Sripura PHC	9437076761
27	Dr. Babita Naik	Medical Officer (AYUSH)	Loising PHC	9439999317
28	Dr. Pradeep Pandey	Medical Officer (AYUSH)	Brajrajnagar CHC	9439999318
29	Dr. Guruprit Paneswar	Medical Officer (BDS)	Rajpur CHC	9348120341
30	Dr. Anuvab Agrawal	Medical Officer (BDS)	Brajrajnagar CHC	7353322345
31	Dr. Basudeb Murmu	Medical Officer (Med)	Brajrajnagar CHC	9439299269
32	Dr. S. K. Panigrahi	Medical Officer (O & G)	Rajpur CHC	6370942348
33	Dr. Dines Kumar Naik	Medical Officer (Ped)	Brajrajnagar CHC	8280026741
34	Dr. Roshan panda	MO (RBSK)	Brajrajnagar CHC	9439650787
35	Dr. Saroj Patel	MO (RBSK)	Brajrajnagar CHC	9937214700
36	Dr. Soumya Pamdey	MO (RBSK)	Brajrajnagar CHC	8763692580
37	Dr. Susmita Dora	MO (RBSK)	Brajrajnagar CHC	8018970044
38	Dr. Bijay Pradhan	MO (RBSK)	Brajrajnagar CHC	9348597994
39	Dr. Lopamudra Mohanta	MO (RBSK)	Brajrajnagar CHC	7008507325
40	Dr.Ghanshyam Soren	Medical Officer I/c	CHC Kirmira	9439986053
41	Dr. Rupashree Tripathy	MO Dental	CHC Kirmira	9438313749
42	Dr. Shiv Kumar Kashyap	Medical Officer DMF	PHC Bagdihi	9776182818
43	Dr. Omkar Prasad Patel	MO Ayahs	CHC Kirmira	9777783030
44	Dr. Kamalini Jaypuria	MO Ayahs	PHC Bagdihi	9439999320

45	Dr. Chinmaya Mishra	MO Ayahs RBSK	CHC Kirmira	9861013318
46	Dr. Debashis Nayak	Medical Officer	CHC Kirmira	8249149421
47	Dr. Debashis Das	Medical Officer	CHC Kirmira	9692337399
48	Dr Dolamani Tandi	Medical Officer	CHC, Kolabira	9439986786
49	Dr Sesod Kumar Buda	MO Ayush	CHC, Kolabira	9938915710
50	Dr Namita Sahu	MO Ayush	PHC Bhadimal	9439999321
51	Dr Priyabrata Arun Kumar Sahu	MO Ayush	PHC Pokhrasal	9439999322
52	Dr Sarat Chandra Pradhan	MO Ayush RBSK	CHC, Kolabira	9556406807
53	Dr Dipika Patel	MO Ayush RBSK	CHC, Kolabira	8895870961
54	Dr Nibedita Barik	M.O I/C	Lakhanpur CHC	7008367692
55	Dr Ekanta Kumar Pradhan	M.O AYUSH	Lakhanpur CHC	9439999326
56	Dr Ahuti Bhoi	M.O Dental	Lakhanpur CHC	9439170613
57	Dr Sitikanta Parida	M.O	Lakhanpur CHC	8895533607
58	Dr Gopinath Soren	Ped Spl	Lakhanpur CHC	7978465715
59	Dr Soumya Sushreeta Purohit	M.O	Adhapada PHC	9439986920
60	DR ATISH PATEL	M.O	Govt.Hospital,Belpahar	9439832452
61	Dr Latika Patel	M.O	Govt.Hospital,Belpahar	9439986961
62	Dr Dileswar Meher	M.O	Kanaktora PHC	9778386700
63	Dr Gopal Ch.Pradhan	M.O Ayush	Palsada PHC	9439999329
64	Dr Pravitanjali Sahoo	M.O Ayush	Kumarbandh PHC	9439999328
65	Dr.Ghanashyam Soren	MO I/C	CHC.Mundrajore	9439986053
66	Dr. Kailash Kishor Pradhan	MO (AYUSH)	PHC (N), Pakelpada	9439999324
67	Dr.Jyoti Soy	MO (AYUSH)	CHC.Mundrajore	8847849677
68	Dr.Birendra Ku Sahoo	MO (AYUSH)	CHC.Mundrajore	9777227310

10.6 Collaborative Institutions

me of the NGO/CSO/ Private Sector	pertise	ntact Person	ntact Details (Number & Email ID)	dress

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 disasterresponse plan
- Pre-exposure immunization (preventive, if available any) of first responders against anthrax andsmallpox must be done to enable them to helpvictims' 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

	rastructure/ titution Type	ot./Instt.	ntact person with ntact Details

Sl. No	Name of the Hospital	No of Beds
1	Covid Hospital, JSG	100
2	DCHC, MCL, Bandhabahal	50
3	CCC, OLD DHH	100
4	CCC Rental Complex, Jsg	30
5	CCC, OTDC Jsg	50
6	CCC, H. Katapali	60
7	CCC, Kolabira	30
8	CCC Kuanrmal	50
9	CCC Belpahar	50
10	CCC Lakhanpur	30
11	CCC Brajrajnagar	20
12	CCC Kirmira	0

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

	rastructure/ titution Type	ot./Instt.	ntact person with contact Details

S.No.	Name of the Facility	Address	Nodal Person		
			Name	Designation	Cell Number

1	PHS BADMAL	BADMAL	Kulamani Chhatria	PEO	9437739771
2	HSP HS CHICHINDA	CHICHINDA	Fagu Munda	JE	9937176204
3	UGHS PURNA	PURNA	Dinesh Sunani	PEO	9777899059
4	YNHS TALMAL	TALMAL	Nihar Mohapatra	MI	7008658838
5	UGHS BADJOB	BADJOB	Rabi Narayan Meher	PEO	8249921904
6	RKHS H.KATAPALI	H.KATAPALI	Dasarath Mohanta	JE	9438028752
7	UGHS HIRMA	HIRMA	Tapswini Kumura	PEO	7008593711
8	APHS JAMERA	JAMERA	Tarani sen Pradhan	PEO	9078222480
9	MUNDAPADA PS	KATIKELA	Rozy Patel	GPTA	7008623910
10	NDHS KUDOPALI	KUDOPALI	Mukta Ekka	PEO	8895444269
11	UGHS TILEIMAL	TILEIMAL	Jadumani Naik	PEO	9437739792
12	RAMCHANDI HS RAMPUR	MALDA	Madhusmita Mishra	JE	9937712589
13	NHS BUDHIPADAR	BUDHIPADAR	Rashmita Moharana	JE	9861865202
14	PATRAPALI HS	PATRAPALI	okila Pradhan	PEO	9938322578
15	NMHS RAJPUR	RAJPUR	Rajesh Ku Singh	JE	9438714282
16	BAPUJI HS SRIPURA	SRIPURA	jugeswar Majhi	PEO	8249677010
17	TALPATIA HS	TALPATIA	Sidheswar Naik	PEO	9437055135
18	MCL KALYANMANDAP	MCL KALYANMANDAP	Dillip Kumar Patel	E O Muncipality	9438713768
19	MUNCIPAL KALYANMANDAP	MUNCIPAL KALYANMANDAP	Dillip Kumar Patel	E O Muncipality	9438713768
20	HILTOP SURABHI CLUB	HILTOP SURABHI CLUB	Dillip Kumar Patel	E O Muncipality	9438713768
21	NETAJI BHABAN BUDHIJAM	NETAJI BHABAN BUDHIJAM	Dillip Kumar Patel	E O Muncipality	9438713768
22	Arda High School	Arda	Bhopal Chandra Jayapuria	PEO	9937405440
23	Bandhapali High School	Bandhapali	Trilochan Patel	PEO	9437256744
24	Bhimjore UPS	Bhimjore	Hamit Tajan	APO	8658075594

25	Kadobahal UGHS	Kadobahal	Ajit Sahu	BSSO I/C	8018501981
26	RMPS High School	Bagdihi	Kashiram Pradhan	PEO	9437220232
27	Nodal High School	Kirmira	L. N. Upadhya	PEO	9437934015
28	Naxapali UGUPS	Naxapali	Rasmita Patel	PEO	9337510015
29	Sulahi High School	Sulahi	Arjun Patel	PEO	9938740530
30	Govt High School, Jhirlapali	Jhirlapali	Duryodhan Sahu	AEE	9437290285
31	Gudigaon High School, Gudigaon	Gudigaon	Padmalochan Padhan	JE	9556617079
32	Panchyat Samiti High School, Kolabira	Kolabira	Jyoshnamayee Kisan	JE	8917318553
33	BNRGSK Building, Kulihamal	Kulihamal	Sunayana Behera	APO	7008079925
34	CDB Nodal High School, Parmanpur	Parmanpur	Ranjeetabala Dash	JE RWSS	8093734566
35	Bhismadev Govt High School, Baghmara	Pokhrasale	Chamara Bag	AFO	9438792794
36	Raghunathpali Govt High School, Raghunathpali	Raghunathpali	Dubraj Naik	PA	6370011324
37	GP Nodal High School, Samasingha	Samasingha	Deeptilata Barik	MI	7873547294
38	Govt. Asharam High School Sodamal	Sodamal	Motilal Patel	AE	6371187353
39	GP High School Babuchhipidihi	Babuchhipidihi	Simanjali Barik	HW-F	9439986820
40	Govt High School Bhatlaida	Bhatlaida	Bhupendra Naik	HW-M	9439986816
41	UP School Jammal	Jammal	Surendra Kisan	HW-M	9439986831
42	UGHS Sudung	Sudung	Khulana Rana	HW-F	8439986832
43	Nodal High School Salhetikra	Salhetikra	Nalini Naik	HW-F	9439986819
44	KBJ High School Laikera	Laikera	Jasoda Naik	HW-F	9439986813
45	High School Niktimal	Niktimal	Mini Naik	HW-F	9439986814
46	Nodal High School Pakelpada	Pakelpada	Sailendra Ray	HW-M	9439999684
47	JOHS Sahaspur	Sahaspur	Ramani Ranjani Ray	HW-M	9439986824

48	LPSD High School Aitapali	Aitapali	Jasobanta Bhoi	HW-M	9556162101
49	UP School Tileimal	Tileimal	Reena Patel	HW-F	9439986994
50	Kumar Project UP School	Attabira	JAGANNATH BHOI	GRS	9938852513
51	Badimal PUPS	Badimal	PRASHANTA BHO	GRS	9938918362
52	GP High School, Baghmunda	Baghmunda	DUSHMANTA PUJHARI	PEO	9437738125
53	Bandhabahal Colony Primary School	Bandhabahal	JOGESWAR BISWAL	PEO	9937934511
54	Bartap PUPS	Banjari	LOKESWAR BADHEI	GRS	9938819398
55	Bhikampali Nodal high School	Bhikampali	BIJAY KUMAR SAHU	GRS	9777776315
56	BPM NODAL HIGH SCHOOL, BHOURNKHOL	Bhounrkhol	NARENDRA PATEL	PEO	9437208238
57	AANCHALIK HIGH SCHOOL, MURALIPALI	Charpali	BHABANI SHANKAR MEHER	PEO	9556674074
58	AANCHALIK HIGH SCHOOL, DALGAON	Dalgaon	BHIMDEV PANDEY	GRS	8249360424
59	JAMGAON HIGH SCHOOL	Jamgaon	SAROJ PRADHAN	GRS	7077187168
60	MAHATMA GANDHI HIGH SCHOOL	Kadamdihi	NIMEI NETI	PEO	9938961324
61	KANAKTORA TOUP	Kanaktora	BIPIN BIHARI CHOUDHURY	PEO	8328851030
62	Kandheikela Primary School	Kandheikela	DEBRAJ KHAMARI	GRS	9938918482
63	BANJIPALI PROJECT UPPER PRIMARY SCHOOL	Katarbaga	JAGDISH NAIK	PEO	9937934520
64	DAHALDERA PROJECT PRIMARY SCHOOL	Kudaloi	ASHOK SETH	PEO	9937506673
65	RKP HIGH SCHOOL, Kumarbandh	Kumarbandh	SRIKANTA BARIK	GRS	8658452252
66	GL NODAL HIGH SCHOOL	Kushraloi	A R ROHIDAS	PEO	9556830392
67	PANCHAYAT NODAL HIGH SCHOOL	Lakhanpur	ASWINI PRADHAN	GRS	9938830399
68	UP GRADED HIGH SCHOOL, MACHIDA	Machida	PARAKSHITA SETH	PEO	8658335074
69	UDAY BEHERA HIGH SCHOOL, PALSADA	Palsada	NISHIKANTA CHAND	PEO	8455052530
70	RENGALI-B UPPER PRIMARY SCHOOL	Panchagaon	SUMANTA KU DAS	PEO	9938533272
71	NODAL HIGH SCHOOL PANDRI	Pandari	SABYASACHI NAIK	PEO	8658499570

72	PIPLIKANI UPGRADED HIGH SCHOOL	Piplikani	NABA KUMAR SAHU	GRS	8018182024
73	PIPLIMAL UPGRADED HIGH SCHOOL	Piplimal	BIJAY PRADHAN	GRS	9238633179
74	PITHINDA UPGRADED HIGH SCHOOL	Pithinda	MANOJ KU SA	MI	7008529117
75	RAMPELLA HIGH SCHOOL	Rampella	JAYANARAYAN PRADHAN	PEO	9938956531
76	UP GRADED UP SCHOOL, BHUTIA	Remenda	TRIBIKRAM SA	PEO	9937543418
77	REMTA TOUP SCHOOL	Remta	LAXMIKANTA KANSARALI	PEO	7077527555
78	UPPER PRIMARY SCHOOL, DUANMUNDA	Samarbaga	JAGDISH NAIK	PEO	9937934520
79	KHADAM UP SCHOOL	Sarandamal	NARAYAN BHOI	PEO	6370480334
80	SUNARI UP GRADED HIGH SCHOOL	Sunari	SURENDRA RAN	PEO	9937748798
81	BANHARPALI PROJECT UPPER PRIMARY SCHOOL	Telenpali	SURENDRA CH. KARTI	MI	7894797246
82	TULASI SAHU NODAL HIGH SCHOOL, TILIA	Tilia	UMESH SARANGI	PEO	6371501921
83	Art of Living Center, Near Jagannath Mandir	Belpahar	Susanta Kumar Patel	JE	9337432833
84	Jagannath Kalyan Mandap, Near Jagannath Mandir	Belpahar	Lalmohan Kishan	HA	9439585354
85	Jubilee Hall, Gumadera	Belpahar	Ashish Baran Naik	AE	9937128014
86	Auditorium cum Sports Complex, Mangal bazar	Mangal bazar, Jharsuguda	Ram Chandra Pradhan	EO	9437257507
87	Gangadhar Meher Kalyan Manadap	Beheramal, Jharsughuda	Ram Chandra Pradhan	EO	9437257507
88	Rental housing complex for Migrant Construction workers	New DHH Road, Malimunda	Ram Chandra Pradhan	EO	9437257507

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 reducemorbidity and mortality. Abiological disaster response plan is to be evolvedon the basis of the national

guidelines with dueparticipation of health officials, doctors, variousprivate and government hospitals, and the publicat the national, state and district levels. The governmenthealth departments also need to be equipped withstate-of-the-art tools for rapid epidemiologicalinvestigation and control of any act of biological threat. Theimportant 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 pediatrics, anesthesia, 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.

10.7Training & 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 educationand web-based training must be given forgreater awareness and networking ofknowledge so that they are able to detectearly warning signs and report the same tothe authorities, treat unusual illnesses, andundertake public health measures in timeto contain an epidemic in its early stage.
- Refresher training will be conducted for allstakeholders at regular intervals. Anadequate number of specialists will bemade available at various levels for themanagement of cases resulting from anoutbreak of any epidemic or due to abiological disaster.
- Standardisedtraining modules for different medicalresponders/community members forcapacity building in the area of disastermanagement developed by state government or national government should be followed to create adequatetraining facilities for the same.
- Selected hospitals will develop trainingmodules and standard clinical protocols forspecialised care, and will execute theseprogrammes for other hospitals. Table-topexercises using different simulations will beused for training at different levels followedby full-scale mock drills twice a year.
- A district-wise resource list of all thelaboratories and handlers who are workingon various types of pathogenic organismsand toxins will be prepared.
- BDM related topics will be covered in thevarious continuing medical educationprogrammes and workshops of educationalinstitutions in the form of symposia,exhibition/demonstrations, medicalpreparedness weeks, etc.
- Biological disaster related education shallbe given in various vernacular languages.Simple exercise models for creatingawareness will also be formulated at thedistrict level.
- Biological disaster plans will be rehearsedas a part of training every six months.
- Knowledge of infectious diseases,epidemics and BT activities will beincorporated in the school syllabi and alsoat the undergraduate level in medical andveterinary 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 healthservices, preventive measures such achlorination of water for controlling thepossibility of epidemics, sanitation ofthe area, disposal of the dead, andsimple non-pharmacologicalinterventions will be mediated throughvarious resident welfare associations,ASHA/ANM, village sanitationcommittees, and PRIs.
  - Community level social workers whocan help in rebuilding efforts, createcounselling groups, define morevulnerable groups, take care of culturaland religious sensitivities, and also actas informers to local medicalauthorities during a biological disasterphase, will be created after propertraining and education.
  - NGOs and VoluntaryOrganizations (VOs) will be involvedin educating and sensitizing thecommunity.
  - Supporting activities like street shows,dramas, posters, distribution ofreading material, school exhibitions, electronic media, and publicity, etc.,will be undertaken.

A legally mandated quarantine in a geographicarea, isolation in hospitals, home quarantine ofcontacts, and isolation management of less severecases at homes would only be possible with activecommunity 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 reducemorbidity 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 majoraspects 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 includethe 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 needassessment analysis of mass casualtyincidents. There will be a triage area andemergency treatment facilities for at least50 patients and critical care managementfacilities for at least 10 patients.
- The quality of medical treatment of serious/critical patients will not be compromised.The development plan will aim at thesurvival and recuperation of as manypatients as possible.
- Hospitals will plan to recruit a sufficientnumber of personnel, including doctors andparamedical staff, to meet the patients' needs for emergency care.
- It is essential that all hospital DM plans havethe command structure clearly defined,which can be extrapolated to a disasterscenario, with clear-cut job definitions whenan alert is sounded.Emergency servicesprovided must be integrated with otherdepartments of the hospital.
- The hospitals will submit data on theircapabilities to the district authorities andon the basis of the data analysis, the surgecapacities will be decided by the districtadministration.
- There is no universal hospital DM planwhich can be implemented by all hospitalsin all situations. Therefore, on the basis oftheir specific considerations, each hospitalwill develop a disaster plan specific to itself.The plan shall be available with the districtadministration and tested twice a year bymock drills.
- The hospital DM plan will cater to theincreased requirement of beds,ambulances, medical officers, paramedicsand mobile medical teams during a disaster.The additional requirement of diseaserelatedmedical equipment, disaster-relatedstockpiling and inventory of emergencymedicines will also be factored into thehospital DM plan. The DM plan must bestrengthened by associating the privatemedical sector.
- Networkingbetween public and private hospitals must be done andhospital DM plans need to be updated atthe district/state level through frequentmock drills.
- The registration and accreditation policy mustmake it mandatory to have a hospital DMplan.
- The existing infectious diseases hospitalswill be remodelled to manage diseases withmicroorganisms that require a high degreeof biosafety, security and infection controlpractices. There will be one such hospitalin each state capital. In addition, the districthospitals and medical colleges will haveisolation wards to manage such patients.Also, identified hospitals in vulnerablestates will be strengthened for managingCBRN disaster victims by putting in placedecontamination systems, critical careIntensive Care Units (ICUs) and isolationwards with pressure control and lamelarflow systems. The infectious controlpractices will include the following:

- When dealing with biologicalemergencies, the health workersassociated with the investigation ofsuch exposures will have adequatepersonal protection.
- Depending upon the risk, the level ofprotection will be scaled up from useof surgical masks and gloves, toimpermeable gowns, N-95 masks orpowered air-purifying respirators. Theywill follow laid down SOPs for use ofPPE.
- Infection control practices will befollowed at all health care facilities,including laboratories.
- Of the potential biological disasteragents, only plague, smallpox andVHFs are spread readily from personto person by aerosols and requiremore than standard infection controlprecautions (gowns, masks with eyeshields, and gloves).
- The suspected victims and those whohave been in contact with them willbe advised to follow simple publichealth measures such as using masks/handkerchief tied over the nose andmouth, frequent washing of hands,staying away from other people by atleast a metre, etc.

- To handle biologicaldisasters, a hospital DM plan will have thefollowing facilities:

  - Medical and paramedical staff: It Isimportant to train medical staff andparamedics properly in universalsafety precautions, use of PPE,communication, triage, barrier nursing,and collection and dispatch ofbiological samples. A team ofspecialists must be made available to handle infectious diseases affectingvarious body systems and they will besuitably immunised against agentssuch as anthrax and smallpox.
  - Expansion of casualty area: If thehospital casualty ward is unable toaccommodate a large number ofcasualties, provision will be made touse the patients' waiting hall, dulyreoriented, to receive the casualties.Each major hospital will cater to atleast 50 additional patients at timesof disaster.
  - Isolation wards: Adequate number ofisolation wards are required to beplanned with surge capacity toaccommodate a large number ofpatients of infective disease. If required, side rooms,seminar rooms, other halls can beimprovised for this purpose.
  - Security arrangements: Hospitalsecurity staff will prepare SOPs toprevent overcrowding of hospitals byvisitors, relatives, VIPs, and the mediaat the time of a disaster. Help of thedistrict administration will be sought,if required.
  - Identification of patients: The processwill start at the time of giving first aidand triage. A system of labelling andidentifying patients during spot registration by giving a serial numberto 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 indeed and patients who die while receiving resuscitation will be segregated and shifted to the mortuarythrough a separate route. Temporary mortuary facilities will be created tocater for a mass casualty incidence.
  - Diagnostic services: All laboratories and radio diagnostic services will be kept fully operational and utilizedas 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 50patients 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 ofblood.
  - Other logistic support: Adequate, uninterrupted supply of water andelectricity 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 specialties on 24x7 basis underNRHM by GoI are steps in the right direction to strengthen medical care facilities in rural areas' initiatives will be expedited to reach every nook and corner of the country.

Table 10.9

	ility	it	sting Capacity	ension Capacity	marks
	dical Staff				
	amedical Staff				
	ecialists				
	chnical experts				
	sualty Section				
	lation wards				
	curity arrangement				

	gnostics Services				
	dical Supplies				
	od Bank Services				
	rtuary				
	her logistics				

- **Mobile Hospitals and Mobile Teams**

States will acquire and locate at least on eMobile 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 mobilized 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 mobilizedto 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 treating25/50/100 casualties will be kept ready tomove with mobile units at short notice.
- Drills will be conducted at regular intervalsby mobile hospitals and mobile teams tokeep them in a functional mode at all times.

Table 10.10 Mobile Hospitals & Health Teams-NIL

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 tocontain the spread of the disease. All first responderswill 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

	Medicine/Drugs	ual Requirement	sent availability

- **Public Health Issues**
  - Panic is a critical element in a disaster and, therefore, DMplans 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 disaster seven 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, incubationperiod, immune status of individuals, amount of infectious agent entering the body, etc. However,a large number of cases arising in a short span oftime may require prompt establishment of medicalposts near the incident site. They would triage the patient, provide basic life-support ifrequired at the site, and transport patients to thenearest identified health facility along withcollection and dispatch of biological andenvironmental samples. If the incident commandsystem is implemented, then the RRT/MFR will beintegrated with the ICP and function under theoverall directions of the incident commander. Important components of an EMR plan are asfollows:
    - Pre-hospital care shall be established andoperationalised using a trained medicalforce. EMR at the site will depend uponthe quick and efficient response of MFRs.
    - MFRsmust be trained in the use of PPE andin collection and dispatch of samples fromair, water, food and biological materials. Thestandards for detection and basic lifesupport(airway maintenance, ventilationsupport, anti-shock treatment andpreparation for transportation) will also bedeveloped. EMR will be integrated with ICPand will function under the overall directionsof the incident commander
    - There will be periodic mock drills forchecking response time and reducing it toa minimum. Periodic training and refreshertraining schedules will also be prepared.
    - The medical posts shall provide evacuationservices, specialised health care, food,shelter, sanitation, etc. These will coordinatewith other functionaries involved in search,rescue, helplines and informationdissemination, transport, communication, power and water supply, and law and order.
    - SOPs for providing hospital care and acommand control centre with the districtcollector as supreme head, will be laid downand rehearsed using mock exercises.
    - The modes of communication will bedovetailed with emergency services of thedistrict. Inter-hospital and inter-servicescommunication will be established at alllevels.
    - Mechanisms for checking the status ofcoordination in planning, operations andlogistic managemesnt will be developed.

10.10 Psycho Social Care

Disasters usually leave a trail of human agonies including loss of humanlife, livestock, damage to properties, loss of livelihood, and alldevelopment 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 interventionsaimed to help individuals, families and groups to restore socialcohesion 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 thatmay prevent adverse psychological and social consequences among disaster affectedpeople.

11 Disaster Mental Health Services

The Psycho-Social Support and Mental HealthServices (PSSMHS) should be consideredas a continuum of the interventions in disaster situations. While psychosocial supportwill 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 disasterhave direct relevance to recovery. The more the problems and life difficulties thesurvivors experience during the recovery phase, the more persistent will be theiremotional reactions. This warrants appropriate interventions in accordance with thephase of recovery of the affected population with the diminished social supports beingbuilt for speedy recovery.

Table-10.12 Nodal Psycho Social Health Institution

me of the Institution, Address & Contact details of the contact (Nodal) Person	. of trained Doctors (Psycho Social)	. of trained Paramedical staffs (Psycho Social)	ilities available	uipment's (If required any) available

Table-10.13-Collaborative Institutions

me of the NGO/CSO/ Private Sector	ertise	ntact Person	ntact Details (Number & Email ID)	dress

13 Community Based Disaster Psychosocial Care

The psychosocial aspects of disasters on human beings have been acknowledged asan international agenda (WHO, 1992). However, in India, the psychosocial aspects havenever 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 severeimpact and the sensitivity of the politico-economic issues involved. The psychosocialimpact was studied systematically although intervention programmes were more ofpsychiatric in nature. Marathawada earthquake (1993), and Andhra Pradesh SuperCyclone (1996) were disasters in which mental health professionals took an active partin terms of providing mental health services and undertaking research to study thepsychosocial impact of these disasters.

The ICMR studies over last twenty years have provided strong base for integration ofmental health services with general health care services and sensitization of thecommunity 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-costcommunity-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 finerdetails of the mechanisms and strategies for integration of mental health services withgeneral health care services still need to be worked out.

Table-10.14 Volunteers &Paramedical Staffs (Community)

e of Volunteers	tution/ nisation	act Person with contact details	act Details (Number & Email ID)	ress

Concept of Social SupportNetwork

The psychological response to a disaster depends on three main factors

Table-10.15

Disaster	Community	Survivor
» Place of occurrence » Magnitude » Suddenness » Type	» Level of preparedness » Social support network » Leadership » Past disaster experience	» 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 beeither adaptive or maladaptive.

Table-10.16

Adaptive	Maladaptive
• Adaptive responses allow individuals to overcome the difficulties caused by the disaster. • For instance, obtaining information or developing effective survival skills.	• 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 firstphase is considered as rescue which is up to 72 hours after the disaster. The secondphase is relief which continues for three months after the disaster. The third phase isrehabilitation, which lasts for one to two years and the last phase is rebuilding, orreconstruction, which extends over lifetime. Reconstruction phase is the longest periodwhen the population rebuilds personal skills, social support and leadership. This overlapswith 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

14. Coping with Loss &Circles of Support

It is very clear that the usual social support systems are eroded after a disaster. Thefamily and the neighborhood no more exist as a functional unit. The tertiary level ofsupport system exists to some extent in terms of larger community, government andother external agencies. So, it is essential to pull these external resources (out of theaffected community) for rebuilding the social support system and normalize the life ofthe survivors.At the third level the government and external agencies take themain role to rebuild the entire support system. Apart from the government agencies a lot of otherplayers 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

15. Needs of More Vulnerable Groups

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

Table-10.18

Category	Exposure/Vulnerability
Children	• 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	• 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	• 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 diversegroup. 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, lifeconditions after a disaster become even worse. This could induce higher level ofpsychological distress and negative emotional reactions, which in turn could jeopardizetheir whole life functions. Therefore, psychosocial care givers should take extra cautionto safeguard their self-respect and cater to their mental health needs. In case specialintervention programme is needed to address their overall safety, dignity and needs,more emphasis should be placed on the inter-sectoral collaborations for theirbetterment. The following aspects& vulnerabilities should receive special attention of the care giversin 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

16. 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 abnormalsituation
- Disaster results in two types of traumai.e.individual and collective trauma. Individualtrauma 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 specificcommunities 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

17. Basic Techniques of DisasterPsychosocial 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 realisethe 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 listeningis an important skill to facilitate ventilation and develop empathy, which in turn facilitatethe whole process of providing emotional support. The following guidelines can helpthe care giversin 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 extremelyimportant for feeling comfortable and secure. In a disaster situation all the supportsystems get disrupted, hence the need to rebuild and restore.
- Externalization of Interests: Engaging them in smallbut productive activity/work (keeping age, gender, physical status, skills and interest asconsiderations) 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 hasproved 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 practicedreligious rituals and practices (e.g. daily worship, prayer and related activities) wouldalso facilitate the ventilation process, whereby there is a possibility of verbal/nonverbalexpression of feeling/emotions and thus, making the survivor more peaceful inmind.

18. 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 remainin understanding the occurrence and modification of stress response.

Table10.19

Emotional	Interpe rsonal	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 untidy Low productivity Bad time management	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 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

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	» 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 heat beat & palpitation

» Low creativity and change in performance » Less ability to utilise relevant information			» 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 » 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:	**Referral 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	» 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 » Sad, rigid, clenches the fists	Is apathetic, immobile and unable to move around » 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 reiteratingabout 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 Survivour** » Is unable to be aroused and is completely withdrawn » Is excessively emotional and shows in appropriate motions » 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

19. 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 anunbiased 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

Preparedness

9.1 Relief Lines: District toBlocks-

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (Blocks)
	From	To			
1	Jharsuguda	Lakhanpur-Konaktora and Maudi Village	SH and RD Road, Pichu Road, 35km	The Villages are well connected by SH and in past flood no issues in transportation reported	2

9.2 Relief Line Channels: Block to GPs &Villages

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (In Nos.)	
	From	To			Village	Population
1	Lakhanpur-	Konaktora and MaudiVillage	SH and RD Road, Pichu Road, 80km	The Villages are well connected by SH and in past flood no issues in transportation reported	2	12000

9.3 Resources available: Response force &Volunteers

Sl. No	Response Force/	Capacity (In Nos.)	No. of trained person			Name of Nodal Person	Contact Details (Mobile/Phone)
			Search /Rescue	First Aid	Relief line Clearance		
1	NDRF	35	35	35	35	Chandanku Saha	9438882018
2	ODRAF	50	34	34	34	A K Dubey	06645-270096
3	Police	Lakhanpur PS	12	12	12	D Sahu	06645-252212.
4	Home Guards	Lakhanpur PS	12	12	12	P K Nayak	06645-252212.
5	Civil Defense						
6	NCC	Belpahar Mahavidylaya	20	20	20		06645 250 446
7	NSS	Belpahar Mahavidylaya	24	24	24		06645 250 446
8	NYK						
9	Trained Task force						

9.4 Preparedness at District level: (The list is Indicative & may be extended further as per need &requirement)

Task	Activity
District Emergency operation Centre (DEOC)	• Test Checkup of all communication Interfaces inregular interval • Proper manning of the Control Room as per Para-10 of the Odisha ReliefCode • A dedicated vehicle must be earmarked for ControlRoom
Upward & Downward Communication	• Have a list of Nodal person with contactdetails • Establish regular linkages with all importantstakeholders • Contact SEOCregularly
Meeting of DDMA (Heads of the department & stakeholder)	• DDMA must meet twice every year & before anydisaster • Fix time & venue for regular Preparedness meeting toAssess preparedness of District /Department /Civil Society /Block Community /Family /Individual levelregularly • Circulate the minutes of the meeting with clear-cut role &responsibility
Capacity Building	• Identifying & designating Nodal Officer for differentDept. • Capacity building & skill upgradation of ODRAF/Fireservices/ Police/HomeGuard • Identify Volunteer like Civil Defense/Cyclone shelterTask Force/NCC/NSS/Scout & Guide & train them on Search & Rescue, First aid, evacuationetc. • Take stake of required materials for search & rescue, first aid, casualty management, evacuation, relief etc. & update IDRN portalregularly • Assess preparedness through Mock drill at District, Block &Communitylevel
Shelter Management	• Take necessary steps for operation & maintenance ofshelters • Test Check of various Equipment at shelter level & repair of the defectiveones • Ensure regular meeting of Sheltercommittee • Assess Shelter level preparedness through Mock drilll
Planning & Reporting	• Collect & transmit Rain fall dataregularly • Collect & transmit weather reportregularly • Ensure preparation of Disaster Management Plans &Safety plans at alllevels • Capacity building of all Stakeholders • Integrate the District plan with block & Villagedisaster managementPlans • Develop healthy mediapartnership

9.5 Preparedness at CommunityLevel

Task	Activity
Early Warning Dissemination	• Build regular linkages with BEOC &DEOC • Test Check of various Equipment at shelter level & repair of the defectiveones • Keep updates fromBEOC/DEOC • Monitor & Transmit updates toBEOC • Supply required information to BEOC &DEOC
Ensuring Preparedness	• Have a list of Nodal person deployed in the village with contactdetails • Identification of safer routes &shelters • Identify possible ways to reach persons like Farmers/Fisherman/NTFP collectors etc. who venturesinto fields, sea & forestrespectively • Build teams from among the task force on Search &Rescue, First aid, Damage & lossassessment • Assess preparedness at Family/Individual level • Test Check-up of equipment's
	• Understand Local dynamics exposed & vulnerable to differentdisaster • local Social Economic & weatherconditions • Develop Village DMplan • List of emergency contact Nos. & display it in Centre places. • Participate in the activities of Preparing village Disaster Management, developing Safety plans, Capacitybuilding Programmes & Mock Drills

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

Task	Activity
Warning Communication	• List the minimum Important requirements Keep allthe important Documents in a water proofpolythene • Record the Safe & alternative routes toshelter • Keep News update inRadio/TV
Preparedness	• 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), Handwash/soap, Important Documents/Valuables, Whistle/match box/lighter/ torch/battery/ umbrella, Mobile & charger / radio • Family must have a "Ready to go First Aid Kit" containing Iodine/ Band aids/ Cotton/ Medicines/ ORS/ ointments/ scissor/ halogensetc. • Assess preparedness on a regular basis by checking Radio/Mobile/ Emergency Kit/First Aid Kit/Fuels &Kerosene (as perneed) • Replace the damaged outdated or expired materials with newones.
Capacity Building	• Participate & involve in the activities of village disaster Management plan, preparation of Safety plans, participate in Capacity building Programmes & involve in MockDrills

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

Task	Activity
Early Warning Dissemination	• List & keep a ready to go minimum Importantrequirements • Record the Safe & alternative routes toshelter • Keep News update inRadio/TV
Ensuring Preparedness	• Every individual/children must have a Personal Identity information like a copy of Aadhar card/ Voter ID / School Identity Card & Contact numbers of Preferably two whocan be contacted in time ofemergency • Family members especially kids must be sensitized about family gathering point during disaster & crowdedplaces • Assess preparedness on a regular basis by checking Radio/Mobile/ Emergency Kit/First Aid Kit/Fuels& Kerosene (as per need)
Capacity development	• Participate & involve in the activitiesof • DisasterManagement • Safetyplans • Capacity buildingProgrammes • Mock Drills &FAMEX

9.8 Preparedness ofDepartments

The list is Indicative & may be extended as per need & requirement

Name of the Department	Normal Time
Collector/ADM / Emergency Officer	• Ensure regular meetings of District DisasterManagement Authority • Develop & update Disaster Management Plan, carry out Hazard analysis in thedistrict • Identify safe alternate routes to cycloneshelters. • Keep a list of Contacts of EoCs, Nodal officer of different departments, Important stake holders, Village leaders,shelters • List of Relief lines & storageplaces • List & maintenance of SARequipment • Capacity building of stakeholders &volunteers • Asses preparedness through Mock Drills for different disasters at district department, block & communitylevel • Adopt sustainable mitigationmeasures • Integrate DM & DRR features in developmentprogrammes
CDM & PHO	• Disaster Management Plans & Safety plans forHospitals • Capacity building of Medical & Para MedicalStaffs • Assess preparedness through Mock Drills & familiarexercises • Integrate department plans with plans with Village & Block Plans and developmentprogrammes • Develop mediapartnership • Develop capacity of hospitals with advance equipment, proper manning & disaster resilientinfrastructures
Superintendent of Police (SP)	• Law and order in thedistrict • Round the clock watch and ward arrangement at vulnerablepoints
EE- RWSS	• Repair of rain cuts are to bemade. • Scouredpointsaretobecoveredwithsandbagswithbullahpiling,if necessary,beforefloodsituationarisestoavoidfurtherdamage.Geo- textile or simple polythene sheets may be spread below sandbags if the soil is of less rigidity in order to arrest furtherscour. • Round the clock watch and ward arrangement at vulnerable points will be made once flood water touches the embankments and the water shows a rising trend. Patroling for this purpose will continue till water finally recedes from theembankment. • Theriversaretobecarefullywatchedforscouringanderosionof banks for taking necessary precautionary measures.

EE- Irrigation	• Communication establishment with District and Block/ Tahasil Control Rooms and departmental offices within thedivision • An officer to be appointed as NodalOfficer • Activation of flood monitoringmechanism • Methods / communication arrangement of alerting officers on various sitesestablished. • Mechanism evolved for forewarning settlements in the down streams/ evacuation/ coordination with other damauthorities • Identification of materials required for responseoperations • Repair/ under construction activity are wellsecured • Water level gaugesmarked • In late and out late to tanks arecleared • Watch and ward of weak embankments and stock pilling of repair material • Guarding of weekembankments All staff informed about the disasters, likely damages and effects
DAO-Agriculture	• Communication establishment with District and Block/ Tahasil control room and departmental officers within thedivision • An officer to be appointed as nodalofficer • Information provided about the disaster and likely damages to crop andplantation • Organized transport, storage and distribution of seeds/fertilizers/ pesticides • Cleaning operation carried out to avoid water logging andsalinity • Surveillance for pests and diseases being carriedout • Establishment of public information centers requirements for salvage or re-plantation assesseddamage • Identification of different areas to be affected by differenthazards • Listing of irrigation sources withstatus All staff informed about the disasters, likely damages and effects
EE- Rural Works	• Communication establishment with District and Block/ Tahasil Control Rooms and departmental offices within thedivision • An officer to be appointed as NodalOfficer • Arrangement of water tankers and other temporary meansof distribution and storagewater • Adequate arrangement to provide water to relief camps/ affected villages, alternative water supply arranged in feeding centers/cattle campetc. • Disinfections of waterbodies • Identification of appropriate portable watersupply All staff informed about the disasters, likely damages and effects

EE- Public Works	• Communication establishment with District and Block/ Tahasil control room and departmental officers within thedivision • An officer to be appointed as nodalofficer • Arrangement of extra vehicles/ heavy equipments, such as front-end loaders/ towing vehicles/ earth moving equipments/ cranesetc. • Inspection and emergency repair for roads/ roadbridges/ underwater inspection/ piers/ concrete and steelwork • Emergency inspection by mechanical engineer of all plant and equipments • Route strategy for evacuation and reliefmarked • Clearance of blockedroads • Community assistance mobilized for roadclearing All staff informed about the disasters, likely damages and effects
DTO-Telecom	• Communication establishment with District and Block/ Tahasil control room and departmental officers within thedivision • An officer to be appointed as nodalofficer • Standby arrangements for temporary electric supply orgenerators • Inspection and repair of poles etc. • Identification of materials required for responseoperations All staff informed about the disasters, likely damages andeffect
CDVO	• Functioning of Control rooms 24 hours with required roster arrangement. • Pre-floodVaccination: • Stocking ofMedicine • Preparatory actions on Feed & Fodder • Formation of MobileTeams • Preparation for shifting / evacuation oflivestock • Route Chart for reliefdistribution • Preparedness for properreporting • Staff Management for floodsituation • Rescue of livestock duringflood • Shelter of the livestock duringflood: • Provision/ distribution of Feed & Fodder during flood • Arrangement for drinking water foranimals • Maintenance ofSanitation: • De-worming after theflood: • Treatment of sickanimals: • Touring the FloodedArea: • Disposal ofCarcass: • Health Camp after theflood:
EE- Electricity	• Communication establishment with District and Block/ Tahasil control room and departmental officers within thedivision • An officer to be appointed as nodalofficer • Standby arrangements for temporary electric supply orgenerator

	• Inspection and repair of high-tension lines/ substations/ transformers/ polesetc. • Clearing of damaged poles/ salvaging of conductors andinsulators • Identification of materials required for responseoperation All staff informed about the disasters, likely damages and effects
EE – PHED	• Communication establishment with District and Block/ Tahasil Control Rooms and departmental offices within thedivision • An officer to be appointed as NodalOfficer • Arrangement of water tankers and other temporary meansof distribution and storagewater • Adequate arrangement to provide water to relief camps/ affected villages, alternative water supply arranged in feeding centers/cattle campetc. • Disinfections of waterbodies • Identification of appropriate portable watersupply All staff informed about the disasters, likely damages and effects

PROCEDURE FOR USING INMARSAT ISAT PHONE 2

1. Stand outside with a clear view to the sky with the phone antenna pointingupwards.
2. There must be a clear line of sight between the phone's antenna and thesatellite.
3. Point the antenna towards **South-East**direction.
4. SwitchonthephonebypressingtheRedpowerbuttonofthephoneforfewseconds.Until the screen lightsup.
5. Align the antenna for getting the maximum satellite signal strength (minimum two bars)

6. The screen will show "searching for satellite" "registering withnetwork".
7. The screen will show "ready for service". Inmarsat name will come in top rightcorner.
8. Then the phone is ready tooperate
9. Simply dial the desiredno:
    i. From satellite to landline : Dial **00** + Country code 91+ **STD code (without 0**) + desired **TelephoneNo**
    ii. From **Satellite to mobile** : Dial 00 + 91+ MobileNumber
    iii. From **Satellite to satellite**: 00+ satellite phonenumber
    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 thenspeak.
- The user is also advised to SPEAK SOFTLY to get better voice quality at the other end.
- CheckttheBattery.(Displaywillshowarectangularblockthatwillbefilledaccording to the charge in the battery). Always charge the battery till it gets charged100%.
- For more detail information please follow the **User Guidedocument**.

Allotted Satellite Phone Numbers

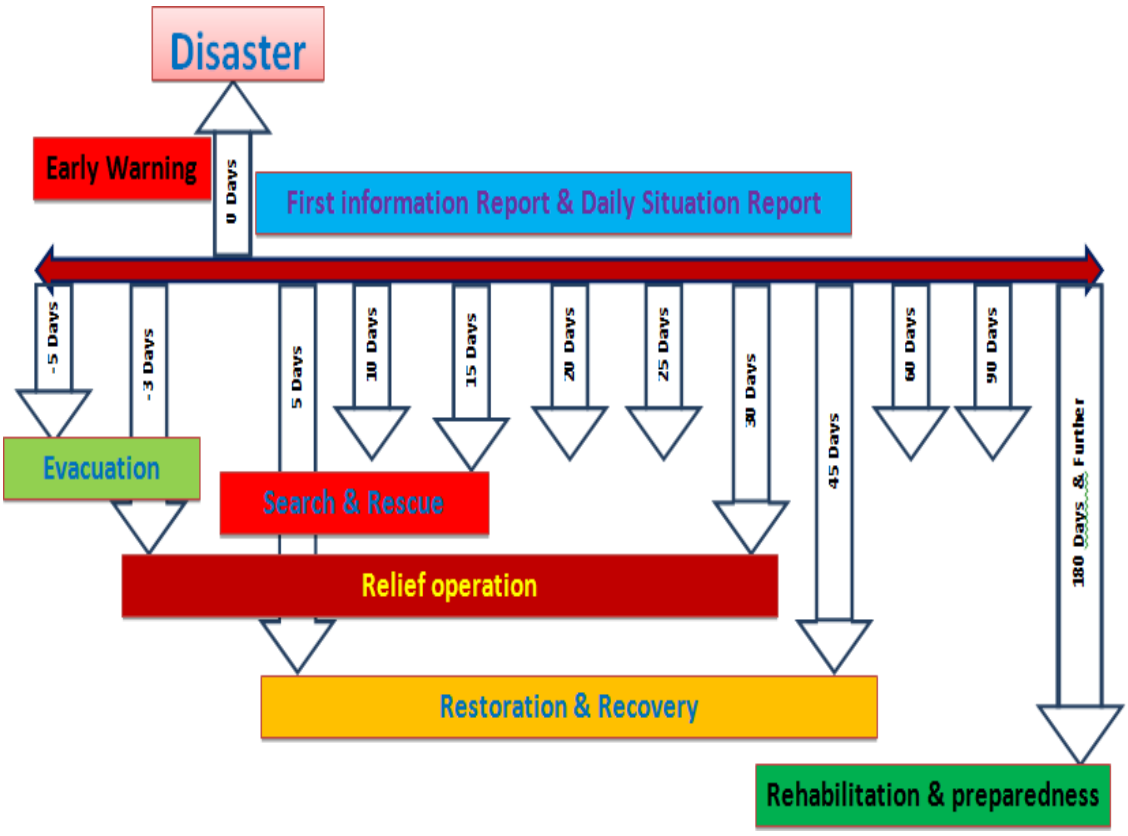
Sl	Districts	Calling Numbers
1	CollectorAngul	8991118456
2	CollectorBalasore	8991118457
3	CollectorBargarh	8991118458
4	CollectorBhadrak	8991118457
5	CollectorBolangir	8991118458
6	CollectorBoudh	8991118459
7	CollectorCuttack	8991118460
8	CollectorDeogarh	8991118461
9	CollectorDhenkanal	8991118462
10	CollectorGajapati	8991118463
11	CollectorGanjam	8991118464
12	CollectorJagatsinghpur	8991118465
13	CollectorJajpur	8991118466
14	CollectorJharsuguda	8991118467
15	CollectorKalahandi	8991118468
16	CollectorKandhamal	8991118469
17	CollectorKendrapada	8991118470
18	CollectorKeonjhar	8991118471
19	CollectorKhorda	8991118472
20	CollectorKoraput	8991118473
21	CollectorMalkangiri	8991118474
22	CollectorMayurbhanj	8991118475
23	CollectorNabarangpur	8991118476
24	CollectorNayagarh	8991118477
25	CollectorNuapada	8991118478
26	CollectorPuri	8991118479
27	CollectorRayagada	8991118480
28	CollectorSambalpur	8991118481
29	CollectorSubarnapur	8991118482

Sl	Districts	Calling Numbers
30	CollectorSundargarh	8991118483
31	ODRAF Cuttack, OASP 6th Battalion	8991118484
32		8991118485
33	ODRAF Bhubaneswar, OSAP 7th Battalion	8991118486
34		8991118487
35	ODRAF Baripada, OSAP 5th Battalion	8991118488
36		8991118489
37	ODRAF Rourkela, OSAP 4th Battalion	8991118490
38		8991118491
39	ODRAF Koraput, OSAP 3rd Battalion	8991118492
40		8991118493
41	ODRAF Jharsuguda, OSAP 2nd Battalion	8991118494
42		8991118495
43	ODRAF Chattrapur, OSAP 8th Battalion	8991118496
44		8991118497
45	ODRAF Balasore	8991118498
46		8991118499
47	ODRAF Bolangir	8991118500
48		8991118501
49	ODRAF Jagatsinghpur	8991118502
50		8991118503
51	Special Relief Commissioner (SEOC)	8991118504
52	Managing Director, OSDMA	8991118505

Chapter-12

Response

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 hardshipsandsuffering,andrestoreessentiallifesupportandcommunitysystems,tomitigate further damage or loss and provide the foundation for subsequent recovery. Effective response planning requires realistic identification of likely response functions, assignmentof 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.



10.1 Phases of Response: Timeline(Indicative)

Phases of response involve Mitigation, preparedness, response and recovery. Mitigation refers to measures that reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies. This is achieved through risk analysis, which results in information that provides a foundation for typical mitigation measures include establishing building codes, zoning requirements, and constructing barriers such as levees. Effective Mitigation efforts can break the cycle of disaster damage, reconstruction, and repeated damage.

Preparedness

Preparedness activities increase a community's ability to respond when a disaster occurs. The National Incident Management System (NIMS) defines preparedness as "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response."

This preparedness cycle is one element of a broader National Preparedness Sys to, recover from, and mitigate against natural disasters, acts of terrorism, and c

Typicalpreparednessmeasuresincludedevelopingmutualaidagreementsandmemorandums of understanding, training for both response personnel and concerned citizens, conducting disaster exercises to reinforce training and test capabilities, and presenting all-hazards education campaigns.Unlike mitigation activities, which are aimed at preventing a disaster from occurring, personal preparedness focuses on preparing equipment and procedures for use when a disaster occurs, i.e.planning.

Preparedness measures can take many forms including the construction of shelters, installation of warning devices, creation of back-up life-line services (e.g. power, water, sewage), and rehearsing evacuation plans. Two simple measures can help prepare the individual for sitting out the event or evacuating, as necessary. For evacuation, a disaster

supplies kit may be prepared and for sheltering purposes a stockpile of supplies may be created. These kits may include food, medicine, flashlights, candles and money.

Response

A well-rehearsed emergency plan developed as part of the preparedness phase enables efficient coordination of resources. Response actions carried out immediately before, during, and after a hazard impact are a imedat saving lives,reducing economic losses,and all eviating suffering.The response phase includes the mobilization of the necessary emergency services and first responders in the disaster area. This is likely to include a first wave of core emergency services,such as fire fighters,police and ambulance crews.Response actions may include activating the Emergency Operations Center (EOC), evacuating threatened populations, opening shelters and providing mass care, emergency rescue and medical care, fire fighting, and urban search and rescue.Response begins when an emergency event is imminent or immediately after an event occurs. Response encompasses the activities that address the short-term, direct effects of an incident. Response also includes the execution of the Emergency OperationsPlan and of incident mitigation activities designed to limit the loss of life,personal injury,property damage,and unfavorable outcomes.

As indicated by the situation, response activities include:

- Applying intelligence and other information to lessen theeffects or consequences of anincident.
- Increasing securityoperations.
- Continuing investigations into the nature and source of thethreat.
- Ongoing public health and agricultural surveillance and testing processes, immunizations, isolation, orquarantine.
- Specific law enforcement operations aimed at preempting, interdicting, or disrupting illegal activity, and apprehending actual perpetrators and bringing them tojustice.
- Restoring critical infrastructure (e.g.,utilities).
- Ensuring continuity of critical services (e.g.,lawenforcement,publicworks).Inother words, response involves putting preparedness plans intoaction.

Chapter- 13

Recovery

Actions taken to return a community to normal or near-normalconditions, includingtherestorationofbasicservicesandtherepairofphysical,social and economic damages. Typical recovery actions include debris cleanup, financial assistance to individuals and governments, rebuilding of roads and bridges and key facilities, and sustained mass care for displaced human and animal populations.Recovery differs from the response phase initsfocus;recoveryeffortsareconcernedwithissuesanddecisionsthat Must be made after immediate needs are addressed.Recovery efforts are primarily concerned with actions that involve rebuilding destroyed property, re-employment, and the repair of other essentialinfrastructure.

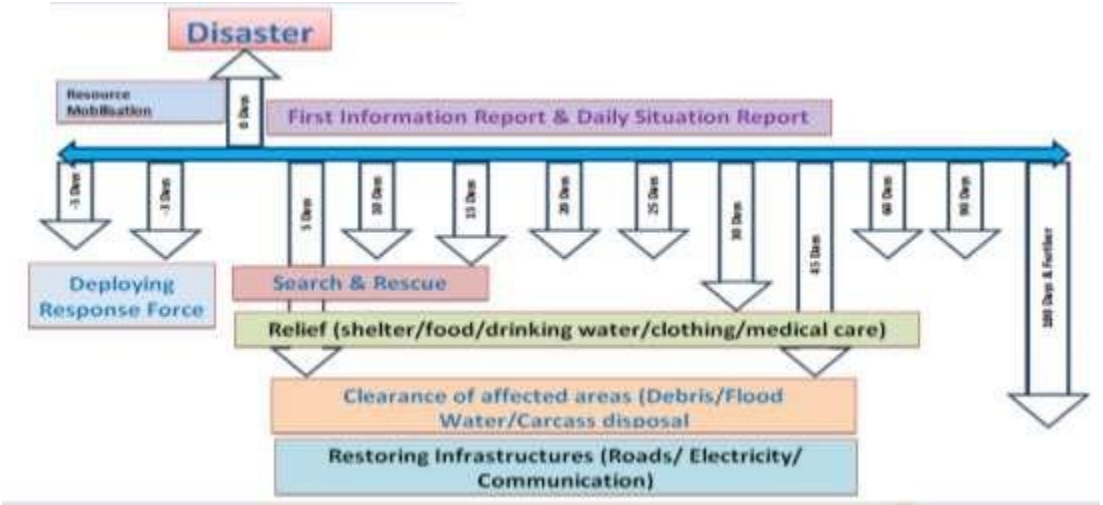
The goal of recovery is to return the community's systems and activities to normal.Recovery begins right after the emergency. Some recovery activities may be concurrent with response efforts.

Recovery is the development, coordination, and execution of service- and site-restoration plans for impacted communities and the reconstitution of government operations and services through individual, private-sector, nongovernmental, and public assistance programs that:

- Identify needs and defineresources.
- Provide housing and promoterestoration.
- Address long-term care and treatment of affected persons.
- Implement additional measures for communityrestoration.
- Incorporate mitigation measures and techniques, asfeasible.
- Evaluate the incident to identify lessonslearned.
- Develop initiatives to mitigate the effects of future incidents.

Long-term recovery includes restoring geconomic activity and rebuilding community facilities and housing. Long-term recovery (stabilizing all systems) cans sometimes take years.

10.2 Relief Management:Timeline



10.3 Response

Response: District (The list is Indicative & may be extended further as per need & requirement)

Task	Activity
Warning Communication	• Warning dissemination to the list of Nodal person & concerned BDOs • Recording the receipt of information & regular Statusupdate • Transmitting updates to SEOC in regular interval asinstructed
Meeting of DDMA (Heads of the department & stakeholder)	• Collector to take up a department coordination meeting & distribute works among all theDepartments • Collector issues circular to keep Govt. offices open cancelling allholidays. • A fixed time to be finalized every day for reporting at alllevel. • A nodal officer is identified for mediamanagement • Circulate the minutes of the meeting with clear-cut role & responsibility
Pre-positioning of staff, resources & Evacuation	• Identifying & designating Nodal Officer for different stages of disaster & affectedareas. • Positioning of ODRAF/NDRF/Fire services/ Police/Home Guard in the affectedareas • Pooling Volunteer services (Civil Defense/Task Force/NCC/NSS/Scout &Guide)

Task	Activity
	• Take stake of required materials for search & rescue, first aid, casualty management, evacuation, reliefetc. • Make necessary arrangements of shelters forevacuation • Constitute a special team for special care to vulnerable section like Specially abled, Sr. Citizen, Pregnant & lactating women, Infants & childrenetc.
Response	• EOCs to Ensure back up (Power/Fuel/internet/ Communication at Dist/Dept. & Blocklevels • Response force under guidance of Nodal officers ensure complete Evacuation (Human/ Animal), carry out Search & Rescue, clear relieflines, • Collectortosubmitrequisitionofvehicle/boat/helicopters&list of support from state & Centre to all concernedauthorities • CSOtostorerequiredreliefmaterials(Chhuda.Gur,DryFoods) in the nearby storagepoints • CDVO to store, transport & distribute required fodders for animals to the affectedareas
	• Cyclone shelter committee & Village Disaster management committee to organize free kitchen in the shelters with help of revenuedept. • EE- RWSS & CDM & PHO to ensure supply of drinking water, disinfection of water & maintain Health & hygiene in the shelters • CDM & PHO to carry out First aid & casualtymanagement • Collector to collect & transmit First Information Report (FIR) & Daily Situation Report as perrequirement

10.4 Response: Community Level (The list is Indicative & may be extendedfurther as per need &requirement)

Activity

- DEOC to disseminate warning communication to BEOC &Community
- Response force to ensure Power/Fuel/internet/ Communication at Shelters backup
- 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 ofrelief

- Doctors to carry out First aid & casualty management, Carcass disposal & sufficient mortuary facility in the affectedareas

10.5 Response: Family & Individual Level (The list is Indicative & may beextended further as per need &requirement)

Task	Activity
Response	• Listen to the instruction of the response force &warnings • Economicuseof"ReadytogoEmergencyKit"ReadytogoFirstAidKit • Cooperatetheresponseforce/officers&Rendervolunteerserviceifasked for • Maintain cleanliness & hygiene atshelter

10.6 Response: Standard Operating Procedures for Departments (The listis Indicative & may be extended as per need &requirement)

Name of the Department	On Receiving Warning	Response time	Post Disaster
Collector/ADM / Emergency Officer	• Review the situation inDDMC • Activate EOC & EarlyWarning • Workdistributionforoperation • Circulartokeepofficesopen • Arrange vehicle & activate Evacuation(Normal/Forceful)	• ActivateSearch&Rescue • Arrange temporary shelters • Arrange logistics in shelters • Workout financial estimates (evacuation / relief/recovery)	• Activaterelieflineclearance • ProperreliefDistribution • Startdamageassessment • Facilitate Ex-gratia &Compensation • Startprimarydamageestimate • PoolresourcesforSAR/shifting of criticalpatients
CDM & PHO	• Disseminate the alert to all concerned (Stafflist) • Arrangement of medicine, First aidkits&teams • Mobile Health units for inaccessiblepockets • Identifying & shifting patients requiringintensivecaretosafer places • Supply of medicines & pre-positioningofmedicalteamsto vulnerableareas • Vaccination for prevention of communicablediseases	• Mass Casualty Management units & Triage • First AidCenters • Medicalsurgicalteams • Adequate mortuaryfacility • Measures to shift patients requiringintensivecare • Pool of Blood donors (Preferablyeachgroup) • Additionallaboratories • Carcass disposal team &units	• Psycho-SocialCounseling • Post Disaster Disease surveillancesystem • Specialattentiontovulnerable section • Networking with & promote treatmentinPrivateHospitals • Carcass Management &IssuanceofDeathCertificate

Name of the Department	**On Receiving Warning**	**Response time**	**Post Disaster**
	• Measures to dis –infect drinking water • Availability of Blood Banks/Ambulance		
Superintendent of Police (SP)	• PerformsSovereignTaskofthe Statefor Protecting Life • Tool for Implementing State Policies • Trained & DisciplinedHuman Resource • Settingupcontrolroomand managingofcontrolroomround theclock	• To provide security and maintainlawandorderat disaster location. • Topreventcommissionof cognizable offences against life, property and public tranquility	• Saving life & Property of victims • Projecting a humanitarian face ofPolice • Image building exercise for Police • Collapsed Structure Search andRescue(CSSR), • MedicalFirstResponse
EE- RWSS	• Settingupcontrolroomand managingofcontrolroomround theclock		
EE- Irrigation	• Setting up control roomand managingofcontrolroomround theclock		
EE- Irrigation	• When early signs of distress appearinanypartofthedistrict, EE Irrigation will submit a special situation update to DM indicatingthepositioninrespect ofIrrigationpreparednessinthe district. • Prepareandupdatethedisaster riskmapofthedistrict.Themap should show the vulnerability and risks of the critical infrastructure related to irrigation and also whether alternate source of H2O within thedistrict.	• Will ensure availability of adequate number of tool kits to prevent any damage duringdisaster. • Provide special attention tothoseplaceswherethe Bundhs were breached and repaired during the last floods/disaster last year. These are the Bundhs, which will be threatened first during thedisaster.	• Undertake channel improvement for rivers and nalastotheextentpossible. Undertake de-silting / cleaning of Nalas and canalsto improvetheflowofwater. • Supply the essential tool kits and protection materialat critical places for emergency repairandconstruction. • Organize round the clock inspection and repair of equipments.

Name of the Department	On Receiving Warning	Response time	Post Disaster
	• Prepare a contingency plan for the maintenance and repairs of Bundhsandembankments. • Identify Bundhs, which are critical for disaster protection andcontrol. • Review and update precautionary measures and procedures.	• Deployed adequateteam in the mostvulnerable areas.	
DAO- Agriculture	• Prepare HRV Analysis ofthe district. • Develop Contingency Action PlanbasedonHRVanalysis. • Review and update precautionary measures and procedures. • Check available stocks of equipments and materials which arelikelytobemostneeded duringandafterdisaster • 6. Provision of agricultural servicesshouldbecoordinated with irrigation department, DRDO, District EOC, SITE OPERATIONSCENTREs.	• Supply of agricultural equipments which may be requiredduringDisaster. • All valuable equipments and instruments shouldbe packed in protective coverings and stored in room the most damage-proofduringdisaster • All electrical equipments should be unplugged during disasterperiod.	• Suggest variety of seeds and cropping pattern, whichcan reduce losses and reducethe risks tofarmers • Plan for emergency accommodations for agriculture staff from outside thearea. • A pests and disease monitoring system should be developedtoensurethatafull pictureorrisksismaintained. • Callforemergencymeetingto takestockofthesituation. Develop a strategy and objectives. • Establishcontactwithsoiland watertestinglaboratories.
EE- Rural Works	• When early signs of distress appear in any part of the district, EE Rural workswill submit a special situation update to DM indicating the position in respect of rural works preparedness in the district. • Prepareandupdatethedisaster riskmapofthedistrict.Themap should show thevulnerability and risks of the critical infrastructure related to rural areas. • Ensurecommunityinvolvement in disaster preparednesson:	• Will ensure availabilityof adequate number of tool kitstopreventanydamage duringdisaster. • Providespecialattentionto those places whichwere most vulnerable areas duringdisasterlastyear.. • Deployedadequateteamin themostvulnerableareas. • Provide for preventive medication for entire livestock to check the spread of any disease amongthesurvivingcattle.	• Provide for agricultural rehabilitation of disaster affected area by necessary assistance, with the help of state government, to affected farmers in activities suchas sowing/harvesting. • Make available requisite seeds and fertilizers free of cost to the farmers, of course, with the help of concerned government departments. • Provide agricultural equipment/toolsthrough

Name of the Department	On Receiving Warning	Response time	Post Disaster
	Riskassessment(topointto which measures to implement);Early warning systems; Life safeguarding equipment; Resources and emergency kits in anticipation of need; Maintaining emergency rosters and evacuation plans; Emergency information and communication systems; Capacity building to ensure adequate emergency response.	• Ensure the rural communication system and shelter management processduringdisaster.	Banks and other funding agencies. • Help in rehabilitation of artisans and marginal businessmen affecteddueto thedisaster. • Make efforts to re-start schoolsassoonaspossible and encourage children to attendschoolregularly. • Rehabilitation of livestock affectedduetothedisaster; Ensure replacement ofmulch cattle to the affected farmers; Free cattle feedfor about2to3months.
EE- Public Works	• ConductHRVanalysisofPWDof thedistrict. • Based on HRV analysis, prepared Contingency Action PlanfortheDepartment. • All personnel required for disaster management should work under the overall supervision and guidance of DeputyCommissioner. • All officers (technical officers) shouldbenotifiedandshould meet the staff to review emergencyprocedures. • Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. • Maintainallthehighwaysand access roads, which are critical from the point of view of supplyingrelief.	• Carryoutrouteopeningby removing debris on the road. • Provide a work team carrying emergency tool kits, depending on the natureandextentofthe disaster, essential equipments to thedisaster spot. • Ifpeopleareevacuatingan area,theevacuationroutes should be checked and peopleassisted. • Construct/ reinforce the connecting roads from villages to roads, canals andBundhsandraisetheir levelsothatpeoplecan access the high ground duringdisaster.	• 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 temporaryroadstoserveas access to temporary transit andreliefcamps,andmedical facilitiesforfloodvictims. • As per the decisions of the District Control Room, undertake construction of temporary structures required, for organizing relief workandconstructionofrelief camps, feeding centres, medicalfacilities, cattle camps andsiteoperationscentres. • An up-to-date report of all damageandrepairsshouldbe kept in the district office reportbookandcommunicate

Name of the Department	On Receiving Warning	Response time	Post Disaster
			thesametotheDistrictControl Room.
DTO-Telecom	• Communication establishment with District and Block/ Tahasil control room and departmental officerswithinthedivision. • An officer to be appointedas nodal officer • Standby arrangements for temporary electricsupplyorgenerators. • Inspectionandrepairofpoles etc. • Identification of materials required for response operations. • All staff informed about the disasters, likely damages and effect	• Where Disaster strikes with/ without early warning signals, TSPs shall immediately assess damage to their network and deploy RapidDamage Assessment Team &Disaster Response Task Force Teams (DRTF) with required inventory toprovide emergency communication to priority callers like police, Fire, Medical,civildefense,Red Cross, Army, financial institutions, NGOs, all officersandstaffsengaged in restoration of telecommunication services,etc • Acontrolroomwillbesetup atthestateHQ/nearestto affected area, as the case may be, and made operational under control of TERM cell of affected area.	• Ifrequiredportable/vehicle mounted / air-transportable BTSs/BSCswithbackhaulon satellite media may be installedbyTSPs. • Nodal officer of TSPs of affected telecom circlelevel shallreporttoconcernedDDG (TERM), DoT (Chairman of STDCC) in that circle, for sharing information and coordination relatedmatters. • TERM units of DOT shall bethe single nodal point in the disaster region where representatives of TSPsshall also be present to coordinate and oversee communication restorationefforts • All the affected areas and infrastructure will maintain immediately to make surethe effective communicationafter disasterforquickresponse.
CDVO	• Prepare HRV Analysis of Animal Husbandry Department of the District. • Based on HRV Analysis, prepare Contingency Action Plan ofthe District. • All personnel required for Disaster/Flood Management should work under supervision and guidelines of District Magistrate. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.	• . Supply stocks of equipments and drugs whicharelikelytobemost neededduringthedisaster. • Fill department vehicles withfuelandparkthemin a protectedarea. • Prepare an area of the hospital for receivinglarge number of livestockduring disaster. • Distribute the requirement ofwater,fodderandanimal feed, for cattle camps and organizethesame.	• Post Disaster Disease surveillancesystem • Specialattentiontovulnerable section • Assist the Revenue Departmentinpreparingplans for cattle campus andcattle feedingcenters. • Organize vaccination campaigns in disaster prone villagesafterthedisaster.

Name of the Department	**On Receiving Warning**	**Response time**	**Post Disaster**
	• Review and update precautionary measures and procedureandreviewwithstaff the precautions that havebeen takentoprotectequipments. • Stock emergency medical equipments which may be required during and post disaster	• Ensure that adequate sanitaryconditionsthrough cleaning operations are maintained in order to avoid outbreak of any epidemic duringdisaster.	
RTO/MVI	• Disseminate the alert to all concernedstaff. • Prepare a list of vehicles- trucks, buses, jeeps, tractors, etcofgovernmentandprivate agencies in the district and providethelisttotheDistrict controlroom. • Issue standing instructionsto the State transport department for providing buses for evacuationandrelief. • Recall important functionaries fromleave;communicatetothe staff to man their places of duties like the ward and divisionalofficesandrespective departments. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.	• 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 chainmanagement. • Fill department vehicles withfuelandparkthemin a protectedarea.	• Providing vehicles for communicationandrelief. • Provide ambulances to rural areas for bringing affected people to hospitals after disaster.
DFO-	• Conduct HRV analysis of Forest of thedistrict. • Based on HRV analysis, prepared Contingency Action PlanfortheDepartment. • All personnel required for disaster management should work under the overall supervision and guidance of DeputyCommissioner. • Alldistrictlevelofficialsofthe department would be asked to report to theDeputy	• Allow the transportation of fodder from forestareas, when the fodder is not freelyavailable. • Evacuate the peopleand animal under theforest areastoasafestplace. • Cut down the most vulnerable trees nearthe residentialareas. • Provide wooden polesand bamboo for temporary shelter.	• Ensure Plantation to maximum possibleextent. • Ensure supply of woodfor disposalofdeadbodies. • Recall importantfunctionaries from leave; communicateto thestafftomantheirplacesof duties like the ward and divisional offices and respectivedepartments. • Callforemergencymeetingto takestockofthesituation.

Name of the Department	On Receiving Warning	Response time	Post Disaster
	Commissioner when disaster occurs • Emergencytoolskitsshouldbe assembled for each division, and should include: Crosscut saws, Axes,rope.		Develop a strategy and objectives.
Railway	• Overall coordination with the district administration for disasterresponse. • Disseminate the alert to all concernedstaff. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. • Prepareandupdatethedisaster riskmapofthedistrict.Themap should show thevulnerability and risks of the critical infrastructure related torailway lines.	• ActivateSearch&Rescue • Arrange temporary shelters • Mass Casualty Management units &Triage • First AidCenters • Medicalsurgicalteams • Acontrolroomwillbesetup atthedistrictHQ/nearest to affected area, asthe case may be, and made operational under control of TERM cell of affected area.	• Providing necessary informationtopublic. • Clearing the railway line blockages and restoration of the communicationsystem. • Providing relief line to the vulnerable areas after disaster. • Specialattentiontovulnerable section.
EE- Electricity	• Conduct HRV analysis for the departmentofthedistrict. • Based on HRV analysis, prepare Contingency Action Plan of departmentofPowerSupply. • All personnel required for disastermanagementwithwork under the overallsupervision and guidance of responsible officer. • Establish radio communications with State Emergency Operation Centre, Divisional Commissioner, District Control Room and your departmental offices withinDistrict/Division. • After receiving alert warning, immediately undertake following inspection: High tension lines ,Towers ,Sub-stations ,Transformers ,Insulators , Poles and Other equipments.	• Instruct district staff to disconnect the main electricity supply for the affectedarea. • Dispatchemergencyrepair groupsequippedwithfood, bedding,tents,andtools. • Protect Power Stations from disaster. Raise the height of compound walls. Arrangegunnybags. • Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, etc. • Provide information to the people about the stateof powersupply.Itisoneof themostimportantsources ofinformation.	• EnsurethatthePowerSupply department to makealternate arrangements of emergency supplyforthefollowingoffices from time of receipt of districts: Hospitals ,Public Health Departments , Deputy Commissioner Office,District EOC, Sub-Divisional EOC, site Operation Centres. , Police Stations , Telecommunications buildings , Meteorological stations.IrrigationOffice. • Hire casual labourers onan emergency basis for clearing ofdamagedpolesandsalvage ofconductorsandinsulators. • Beginrepair/reconstruction.

Name of the Department	**On Receiving Warning**	**Response time**	**Post Disaster**
EE – PHED	• When early signs of distress appear in any part of the district, EE PHED will submit a special situation update to DM indicatingthepositioninrespect of water supply preparedness in thedistrict. • Prepareandupdatethedisaster riskmapofthedistrict.Themap should show thevulnerability and risks of the critical infrastructurerelatedtowater supplyandpublichealth. • Prepare a contingency planfor the maintenance and repairs water pipesystems. • Identifyvulnerableareas,which are critical for disaster protectionandcontrol. • Review and update precautionary measures and procedures.	• Will ensure availabilityof adequate number of tool kitstopreventanydamage duringdisaster. • Providespecialattentionto those places where the water supply were breached and repaired duringthelastdisasterlast year. • Deployedadequateteamin the most vulnerable areas. • Opening the blockage of sewerage and sewage systemduringdisasterto control the disease and epidemics.	• Supplythesafedrinkingwater at the affected areas immediately after the disaster. • Maintaince of Water works immediately after the disaster. • Cleaning the sewerage system with adequate disinfection to prevent disease and epidemics.
DEO- School & Mass Education	• Conduct HRV analysis ofschools of thedistrict. • Based on HRV analysis, prepared Contingency Action PlanfortheDepartment. • All personnel required for disaster management should work under the overall supervisionandguidanceofthe DEO. • All officers (technical officers) shouldbenotifiedandshould meet the staff to review emergencyprocedures. • Obtain IEC materials postars, Phmplets,simpletipsondo's and don'ts in different disasters. • Conduct awareness generation activities systemically in the wholeschooltargetingdifferent	• Duck cover and holdfirst sign of earthquakemove awayfrombuildings. • Assist the evacuation teams in evacuation ofthe schoolbuildings. • For a chemical hazard assist the warning team in disseminating therequired safety tips to the entire school. • Ensuring the schools becomes the shelter houses with adequate nos of equipments duringthe disaster.	• Dissemination of information ondo'sanddon'tssothatthe situationdoesn'tworsen.This can be done in the coordination with the warning and informationdissemination teams. • The damaged building and infrastructure should repair immediately after the disaster. • The relief lines should be measured from the school buildingafterthedisaster.

Name of the Department	On Receiving Warning	Response time	Post Disaster
	classes and also staffs and teachers. • Assistsinorganizationsofthe evacuations drills for various hazards.		
DEO – Higher Secondary Education	• Conduct HRV analysis of Higher Secondary schools of the district. • Based on HRV analysis, prepared Contingency Action PlanfortheDepartment. • All personnel required for disaster management should work under the overall supervisionandguidanceofthe DEO. • Organizeddemonstrationoffire safety, first aid and search and rescue through linkages with the fire brigade, health officials and civil defense and home guards. • Obtain IEC materials posters, Pamphlets, simple tips on do's and don'ts in different disasters. • Conduct awareness generation activities systemically in the wholeschooltargetingdifferent classes and also staffsand teachers. • Assistsinorganizationsofthe evacuations drills for various hazards.	• Duckcoverandholdfirst signofearthquakemove awayfrombuildings. • Assist the evacuation teamsinevacuationofthe schoolbuildings. • For a chemical hazard assistthewarningteamin disseminating therequired safety tips to the entire school. • Ensuring the schools becomes the shelter houseswithadequatenos of equipments during the disaster.	• Dissemination of information ondo'sanddon'tssothatthe situationdoesn'tworsen.This can be done in the coordinationwiththewarning and information disseminationteams. • Thedamagedbuildingand infrastructure shouldrepair immediately after the disaster. • Therelieflinesshouldbe measuredfromtheschool building after thedisaster.

10.7 Format for First Information Report (FIR) on occurrence of naturalcalamity

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

From:District-_____ Date ofReport:- _____

To

Special Relief Commissioner, Orissa
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 ofCalamity

b. Date and time ofoccurrence

c. Affected area (number and name of affectedBlocks)

d. Populationaffected(approx.)

e. Number ofPersons
   - Dead
   - Missing
   - Injured

f. Animals
   - Affected
   - Lost

g. Crops affected and area(approx. inhect.)

h. Number of housesdamaged

i. Damage to publicproperty

j. Relief measures undertaken inbrief

k. Immediate response & relief assistance required and the best logistical means of delivering that relief from State/National

l. Forecast of possible future developments including newrisks

m. Any other relevant information

AuthorisedSignatory

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. HealthDepartment.

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 pouchesdistributed-

Bleaching powder distributed-

Sintex Tanksavailable-

Tube wellsdisinfected-

3. FS& CWDepartment

- ……Qtls. Chuda, ……. Qtls gursuppliedto..... Blocks

(Qty .in quintals)

District	Chuda	Gur

- …… Qtls of rice has been allocated to the Districts mentionedbelow

Blocks **Quantity allocated (in quintal)Total:**

4.Fisheries& A,R.D.Department

- Animals vaccinated-
- Animalstreated-

Damages to Roads/RiverEmbankments

- **R.D.Department**

  Roads damaged-

  CD/Breach occurred-

  Breach closed- Building

  damaged- Building

  collapsed-

  Pipe water supply affected-

  Tube Wells affected-

2. WorksDepartment

Roads damaged- Breach

occurred- CD works

damaged- CDs washed

away- Breachclosed-

3. W.RDepartment

Breach occurred-

Breaches closed-

Breach closing works in progress

Chapter-14

Restoration & Rehabilitation

11.1 Rehabilitation and restoration comes under recovery phase immediately after relief and rescueoperationofthedisaster.Thispostdisasterphasecontinuesuntilthelifeoftheaffected 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 rehabilitationetc.

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.

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

Name of the Department	**Normal Time**
Collector/ADM / Emergency Officer	• Restoration of Critical Infrastructures to bring situationto normalcy • Ensure Restoration of roads & channels,Communication network, Electricity &Energy • Ensure health in the affectedareas • Adopt sustainable mitigation measures in therestoration activities
CDM & PHO	• Carry out Disease surveillance measures to check epidemic pronediseases • Dis-infection of drinking water & measures for health& hygiene • Rehabilitation of deprived &destitute • Carry out Trauma & Psycho-socialcounseling

Superintendent of Police (SP)	• Security arrangements for relief materials in transit andin campsetc. • Senior police officers to be deployed in control rooms at State & district levels during L 1 level deploymentonwards. • Deploy personnel to guard vulnerable embankments and at other riskpoints. • Arrangement for thesafety. • Coordinate search, rescue and evacuation operations in coordination with theadministration • Emergency trafficmanagement. • Maintenance of law and order in the affectedareas. • Assist administration in taking necessary action against hoarders, black marketersetc.
EE- RWSS	• Provision of tube wells at the squares, market places, bus stops, public buildings like schools, hospitals etc. to face the heat wavesituation. • Alternate drinking water sources for the fluoride- affectedareas like Roof top water harvesting, rainwater conservation and recycling. • Construction of drains in the villages for easy discharge of the flood water, wastewater andsewage • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and duringdisaster inparticular.
EE- Irrigation	• Planning for new medium irrigation project and completion of the ongoing project in the rivers to increase the irrigational potential of thedistrict. • Strengthening the weak points of the riverembankments, • Provision of spurs, stone packing, launchings at theturning point and guide bank along the course of the rivers and big Nallas to prevent the damage during flashflood. • Constructions of culverts, cause ways and other crossdrainage work for quick discharge of flood water and to prevent prolonged submergence causing damage to the important infrastructure. • Planning and Construction of Minor Irrigation Projectsat suitablelocation. • Construction of masonry check dams on some seasonal and perennialNallas
DAO- Agriculture	• Encourage the formation of social institution to increasetheir access to credit, market,insurance etc. like Producers/Growersassociation, • Cooperatives, Societies, Farmers clubetc. • Capacity building of farmers and grass root extensionworkers on the modern agriculture practices, dynamic contingency crop planning, IPM, INM, alternate land use etc on

	• Popularization of Seed Village scheme and promotion of Community managed SeedBank. • Increase the access of farmers to appropriate agroinformation, market, creditetc. • Promotion of the cultivation of vegetables, spices, tuber crops, mushroom etc through on field demonstration and minikit distributionprogram. • Construction of low cost storage structures for the perishable agro/hort.Products. • Training of the SHGs, vegetable growers etc. on the package of practice, proper storage, processing and value addition of the hort.Products. • Treatment of arable and non-arable lands through various mechanical and vegetative measures to prevent furthertheir degradation and increase productivity
EE- Rural Works	• Strengthening and restoration of infrastructure with an objective to eliminate the factor(s) which caused thedamage.
EE- Public Works	• Construct/reinforce the connecting roads from villages to roads, canals and bunds and raise their level so that people can access the highground. • Install adequate road signs to guide and assist thedrivers. • Institute repair of all paved and unpaved road surfaces, including edge metaling, pothole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring theirconditions. • Take on construction of temporary roads to serve as access to temporary transit and relief camps and medical facilities for disastervictims.
DTO-Telecom	• Assessment of damage and restoration ofcommunication network. • Ensure all communication equipment installed atDEOC.
CDVO	• Popularization of the livestock farming as one of the viable alternative livelihood option in the normal year in particularand in drought year in general through awareness generation, attractive schemesetc. • Improvement of the quality and productivity of local livestock through Artificial Insemination and other breedingprocess. • Strengthening of the dispensaries/Livestock Aid centers with staffs, medicines, and equipment to proper health care of theanimal. • Capacity building of the grass root extension workers/Para worker/ farmers on animal health care and hygiene, AI/breeding, birth careetc. • Popularization of the cultivation of nutritious fodder grassesor trees in the home stead/field bunds of farmers/village pasture lands etc. through demonstration unit, mini kit distribution etc.

	• Storage, Processing, Market linkage, Price fixatation ofthe livestockproducts • Promotion of the development of Institutions like Milk Cooperatives, Goat grower association etc.for better accessto market, creditetc. • Introduction of Pisciculture in all theDams, • Reservoirs/MIP/GP tanks and otherbodies. • Supply of quality and productive fingerlings of fast growing/improved fishspecies. • Capacity building of fish farmers/grass root extn. Workers/SHG members on commercial pisciculture, fish seed and feed production etc.
RTO/MVI	• Emergency repairs of roads if affected must be carriedout. • A system for priority transport of relief goods and personnel must bedeveloped. • Relief goods may be considered for exemption from freight charges, ifany. • All bus depots should be equipped with emergency communicationequipments. • Every work gang should have tools which will be needed in an emergency. • This should include crosscut saws, axes andropes. • Raincoats, caps and gumboots should be made available to work gangs in anemergency
DFO-	• Improvement of the Vegetation coverage and Biomass production to meet the multiple community need like food,fuel wood, fodder etc. through three-tierplantation. • Regeneration of degraded village Common PropertyResources like village forest, waste land through the gap filling and block plantation of multipurpose treespecies. • Prevention of indiscriminate forest felling through strict introduction of rules and regulation and massive awareness generation. • Strengthening of the community based organizations like VSS through varioustraining,exposure, orientation, and sensitization and ensures the involvement of the local community in forest management (regeneration, protectionetc.) • Fair Collection and marketing of the NTFPproducts • Restricted grazing of the cattle herd in the forest area is to be ensured to protect the natural regeneration of the forest ecosystem.
Railway	• Rapid access to the site of the accident. • Effective site management by making best use of on-boardand locally availableresources. • Quick extrication of victims. Speedy transportation of victims tohospital.

	• Proper communication system both for assisting thestranded passengers as well as giving out timely information to the media.
EE- Electricity	• Disconnect electricity after receipt ofwarning. • Attend sites of electrical accidents and assist in undertaking damageassessment. • Stand-by arrangements to ensure temporary electricitysupply. • Inspection and repair of high tensionlines /substations/transformers/poles etc. • Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distributionsystems. • Restore electricity to the affected area as quickly aspossible. • Replace / restore of damaged poles/ salvaging of conductors andinsulators.
EE – PHED	• Provision of tube wells at the squares, market places, bus stops, public buildings like schools, hospitalsetc. • Alternate drinking water sources to affectedarea • Construction of drains for easy discharge of the floodwater, wastewater andsewage • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and duringdisaster inparticular.
DEO- School & Mass Education , DEO - Higher Secondary Education	• Department and the field level institution will preparea contingent Action Plan for theirreconstruction. • Damaged buildings (including classroom building, department building, and breaking of window) should be assessed and the report is to be sent to SRC for adequate funding needed for repair and constructions of building, boundary wall, Hostels etc. for quick recovery and restoration ofEducation.

11.3 Damage LossAssessment

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					

11.4 Calculation of assistance for agricultural inputsubsidy-SMF

(Rs. In lakh)

Sl.	Name of the Block	Area held by SMF (in Hectares)	Total Agricultural area Affected [inHect.]	Total agricultural area where crop loss is >50%	Crop loss 33 & above			Expenditure incurred			Total
					Irrigated [inhect.]	Rainfed [in hect.]	Perennial	Irrigated @Rs.13,500/- per hectare	Rainfed @Rs.6800/- per hectare	Perennial @ Rs.18000/ per Hect.	
1											
2											
3											
4											
Total											

11.5 Agricultural input subsidy- Farmers other than SMF Farmers

affected firstyear

(Rs. In lakh)

Sl.	Name of the Block	Area held by farmers other than SMF (in hectares	Crop loss >33%							
			No of Farmers	Irrigated area in hect	Amount spent @ Rs.13,500/- per hect.	Rainfed Areainhect.	Amount spent @ Rs.6800/- per hect.	Perennial Area in hect	Amount Spent @ Rs.18000/ per Hect.	Total Amount Spent
1	Jharsuguda		1684		3627198	613.4				3627198
2	Lakhanpur		5765		19702133	771				19702133
3	Kolabira		9279		17916137	3085				17916137
4	Kirmira		5880		13119753	763.2				13119753
5	Laikera		2600		6311779	2022				6311779
Total			25208		60677000	7253.6				60677000

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-terms 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 & rehabilitationworks.
- Evaluate the extent of works under SDRF/NDRF & other sources(damaged infrastructures)
- Exploreopportunitiesforexternalaidslike(InternationalAgencies/CivilSociety / Corporate Sector)
- Allocate funds for the stabilization of the repaired & reconstructedinfrastructure.
- Integrate Climate change & Disaster Risk Reduction features in the recovery programmes

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

- Generally monitor the management of the recoveryprocess;
- Ensure implementation of the recovery plan by line departments,blocks
- Effective service delivery minimizing overlap andduplication;

□ □□

Chapter- 16

FinancialArrangement

13.1 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 adnorms.
- 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 formNDRF.
- This is, however, subject to the adjustment of 75% of the balance available in the State's SDRF for the instant Calamity.

13.2 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 the13th 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.Thebalance25%matchingshareofcontributionisgivenbytheStateGovernment.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 a near lier release of the Central share upto 25% 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.

13.3 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.

13.3.1 Cases Eligible for Assistance underCMRF

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

13.3.1.2 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 suchpersons.

13.3.1.3 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 othercalamity'affecting af amily or a community,

which deserves extreme compassion and not covered under any existing assistance scheme of State/central Government.

13.3.1.4 AssistanceforRuralDevelopment: 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 dueprocedure.

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.

13.4 Release of Funds to Departments andDistricts:

Funds required toward spure relief to affected persons/families for natural calamities in shape of emergency assistance, organizing relief camp / free kitchen / cattle camp, agriculture inputsubsidy and other assistances to affected farmers,ex-gratiaas 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 / sanctionof
S.E.C. However, funds towards pure relief are released under orders of Special Relief Commissioner/Chief Secretary and the sameis 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 ReliefCommissioner.

13.5 Damage Assessments and Report afterFlood/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.

13.5.1 Submission of preliminary damage report (Para-76 ofORC)

1. The Collector as well as the district level officers under each Department of Governmentshallimmediatelyafterassessmentoffloodd amageforwardacopyof

their report to their immediate Head of Department. The district level officers may also supply reports to the Collector.

2. TheHeadsofDepartmentsafternecessaryscrutinyshallforwardtheirreportstotheir respective Departments of Government with copy to Special Relief Commissioner, not later than two weeks from the date of abatement offlood.
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 ofDepartment.
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.

13.5.2 Submission of final flood damage report (Para-77 ofORC)

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 RevenueDepartment.

13.6 Central and State Government programmes and Schemes onNatural 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.

Table: Different State and Central Government Schemes and Programmes

Sl No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1	National Agriculture Insurance Scheme (NAIS)/ RastriyaKrishiBimaYojna (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, hail storm, storms, animal depredation, etc.
2	JanashreeVimaYojna	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	Pradhan MantriFasalBimaYojana(PMFBY)	Crop Insurance	Agriculture	Insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases.
4	Pradhan Mantri Jeevan JyotiBimaYojna	Life Insurance		Life insurance cover for death due to any reason
5	Pradhan MantriSurkhyaBimaYojna	Life Insurance		Accidental insurance for death/full disability or partial disability
6	Postal Life Insurance (PLI) and Rural Postal Life Insurance (RPLI)	Life Insurance	Postal	Life insurance under a number of schemes for employees in government, public sector banks and government-aided education institutions

7	SSA/RMSA/RUSA	Education	Human Resource Development	To induce institutional safety plan and development of Policy paper of institutional safety at various level of education.
8	RashtriyaKrishiBimaYojana	Health Insurance	Agriculture	Crop insurance
9	Biju KrushakaKalyanYojana (BKKY)	Health Insurance	Health	Financial support through health and accident insurance
10	Mahatma Gandhi BunakarBimaYojana	Accidental Insurance	Handloom and Textile	Insurance for accidental death and disabilities
11	Accident Insurance Scheme	Accident Insurance	Fishery	Assistant to fishermen towards hospitalization expenses during serious disease
12	Disease Control Programmes			Protective vaccination for various diseases to livestock and treatment of animals
13	Mahatma Gandhi National Employment Guarantee scheme	Mitigtion measures	PR Dept., Govt. of India	Utilisation of MGNREGS funds to reduce the vulnerability of Panchayat vis a vis natural hazards such as drought, forest fire, cloud floods, etc
14	Pradhan Mantri Gram SadakYojana	Roads	Rural Works	To ensure that in case of disasters these roads get provision for restoration to ensure all weather connectivity
15	Indira AwasYojana	Housing	Rural Development/ Panchayati Raj	To promote measures like application of Hazard resistant design in construction of IAY houses, appropriate sitting of IAY housing. Besides, fire proof houses to fire victim for special allocation quota.

16	National Rural Health Mission	Health	Health and Family Welfare	To ensure that the village Health Plan and the District health plan explicitly address the disaster risk reduction concerns in the vulnerable habitations and the vulnerable districts and the disaster management plan as per DM Act 2005 takes links itself to the District and village Health plans.
17	Finance Commission Grant	Infrastructure Development	PR Dept.	10% of the fund will be dedicated to disaster related projects

13.7 Roles of District Planning committee on financial outlay on mainstreaming Disaster Risk Reduction (DRR) in developmentprogrammes.

District Disaster Management Authority (DDMA) have been constituted in Jharsuguda district under Sec.25(1)and(2)of the Disaster management Act,2005 to over see Disaster Management activities in the district. The Collector, Jharsuguda is the Chairperson of DDMA whereas the President, Zilla Parishad, Jharsuguda is the Co-Chairperson of DDMA. 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 24 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 Orissa District Planning Committee Act, 1998 and subsequent Orissa District Planning Committee Rules, 2000 which have been enacted for effective planning process at the district level. Subsequently, DPMU, Jharsuguda 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.

In this back drop,the DDMP,2022 focused on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

13.8 Fund provision for disaster preparedness & capacitybuilding

The district administration is the administrative department for management of disasters. Collector is the District Relief Officer and Disaster Manager. Block is the lowest unit of relief administration .BDOs and Tahsildars jointly manage relief administration at the lowest level. District Natural Calamity Committee (DNCC) and District Disaster Management Authority (DDMA) functions with representations from district level officers and people's representative under the chairmanship of the district Collector for supervision and monitoring. Block Disaster Management Committee under the chairmanship of chairperson of Panchayat Samiti and G.P. Disaster Management Committee under the chairmanship of Sarpanch is functioning.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 organize straining 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 thispurpose.

Preparation and Implementation of District Disaster Management Plan

The DDMP prepared by the DDMA, Jharsuguda with the support and assistance from all the line departments of the districts. All the line departments provided data for the development of DDMP and its submission to the OSDMA in the scheduledtime.

Jharsuguda district followed the following process in preparation of DDMP, 2022.

Steps	What has done	Who were involved	Methodology
	Review of DDMP Jharsuguda 2016 along with all District records and Jharsuguda Gazette	• Collector, ADM, EmergencyOfficer • DPO • Selected district levelofficial	• Past history of disasters to be discussed and documented • Extent of severity and damage to berecorded • The nature of the Warning issued to beanalysed • The nature and extentof the rescue and restoration done, to be revisited

Steps	What has done	Who were involved	Methodology
	Situation Analysis	District and Block level officials	• Mapping the geography and topography of the risk prone areas, block-wise, GP-wise andvillage-wise • Demographic details to be recorded • Mapping of the habitation in the concernedareas • The natural resources to be marked on themaps • Listing all the livelihoods andproperties • The existing risk prone/ safe infrastructure to be marked on themap
	Hazard Analysis	District and Block level officials	• Identification of all possible hazards in the area based on past experience and available records • Identification of the most vulnerable areas with relation to threat tolife, livelihoods and property
	Vulnerability Assessment	District and Block level officials	• Locations of the vulnerable areas are to be mappedseparately • Identification of the vulnerable people such as, the elderly, the disabled, children and pregnant women, families living in thatched houses, fishermen at sea (if any), ailing people,etc. • Identification of property or assets which are likely to be affected, such as, cattle and other livestock, kachcha houses, weak structures, pump sets, tube wells and other installations, crops, horticulture and plantations, boats, nets, etc.

Steps	What has done	Who were involved	Methodology
			• Identification of weak points on embankments (ifany) • Marking the drainage system in the concerned area
	Opportunity Analysis	District and Block level officials	• Identification of the existing resources which may help to reduce risks to life andproperty • Identification of the safe houses and buildings for shelter andstorage • Listing the existing flood/cyclone shelters, if any • Identification of the elevated and up-lands which can act as natural barriers to protect livestock • Listing of the existing health and sanitation facilities • Identification of safe routes forevacuation • Identification of the sources of funds to carry out the preparedness activities

Roles of ADM, DEO and Nodal Officers support from other line Departments

1	Collector/ADM	Issue of necessary directives to the line department. Provided critical inputs to the DDMP compilation team
2	DEO/DPO	Desk Review of DDMPs, decisions of DDMA, DLNCC of previous years, District gazette, Contingency Plan of the departments Coordinated line department officials to provide information in time Consulted head of the departments for improvisation of DDMP, 2018.

3	Heads of Line Departments	Hazard, Vulnerability and capacity analysis of the district Provided necessary information and data. Review the proposed DDMP, 2018 Extended necessary supports and feedback for improvisation of DDMP, 2018.

Support of line departments

Supports of the line department were the key to complete the DDMP, 2018 in a stipulated time frame. Officials of the line departments were showed keen interest in sharing of required information of their departments in the prescribed formats. Official ssuggested to revise the formats based on the unit of data maintain the various levels to make it practicable. GP/Village wise information was compiled from the standardized sources like Census, Agriculture Census, Livestock Census, SECC and GPDP were supplied by the departments to avail any conflict in which were available with department for ready references. Information at block level was also supplied by the department as already planned under Statistical Handbook, DIP, MGNREGS Action Plan and CDP of thedepartments.

Procedure for preparation of DDMP as per the DM act to be elaborated

Information were collected from several sources like census, block level administrative functionaries,web links, district NIC center,and other line departments of the district. The DPO and district emergency section compiled the information and prepared the DDMP.

It is hoped that the plan would provide concrete guidelines towards preparednessand quick response in case of an emergency and help in realizing sustainable Disaster Risk Reduction & mitigate/minimizes the losses in the district in the longrun.

Further, it is suggested that the District level officials of different department will carefully go through the plan and if they have any suggestions be free to convey the same sothat the same can be done as the present document is a continuous process and it requires more refine from time to time as per needs.

Roles of ADM, DEO and Nodal Officers support from other line Departments to be defined

1	Collector/ADM	Issue of necessary directives to the line department. Provided critical inputs to the DDMP compilation team
2	DEO/DPO	Desk Review of DDMPs, decisions of DDMA, DLNCC of previous years, District gazetteer, Contingency Plan of the departments Coordinated line department officials to provide information in time Consulted head of the departments for improvisation of DDMP, 2022.

3	Heads of Line Departments	Hazard, Vulnerability and capacity analysis of the district Provided necessary information and data. Review the proposed DDMP, 2022 Extended necessary supports and feedback for improvisation of DDMP, 2022.

Support of line departments (for providing information) to be mentioned.

All the district departments were instructed to send the data to Deputy Collector Emergency vide official letter. Many departments send the data by emd of March 2022 and many departments were again given instructions by telephonic call to furnish data. Supports of the line department were the key to complete the DDMP, 2022 in a stipulated time frame. Officials of the line departments were showed keen interest in sharing of required information of their departments in the prescribed formats. Officials suggested to revise the formats based on the unit of data maintain the various levels to make it practicable.

Time lines for updating DDMP to be mentioned. (From January to February of every) should be incorporated in matrix (information to line departments etc.)

Sl No.	Activities to be done	Timeline
1	Consultation with line department officials and important stakeholders at district level	1st week of January
2	Submission of base line data by all line departments	3rd week of January
3	Compilation of information's and preparation DDMP. Sharing of draft with Chairperson, members of DDMA and other stakeholders	1st week of February
4	Necessary modification and finalization	2nd week of February
5	Placing the final copy before DDMA, finalization and submission of a copy to SDMA	Last week of February
6	Approval by SDMA	By March

Details of number of consultation and meetings, discussion with stakeholders for modification and final sharing.

Several meetings held at Collectorate conference hall to discuss with the heads ofthe departments to prepare the DDMP for 2022. Inputs received from all quarters were taken care and a draft plan was prepared. The drafted plan was shared with the departments for review and provides their critical input for

improvisation of the DDMP,2022.

Sharing and placing before DDMA for approval

All the DDMA members hold the meeting under the chairmanship of District Collector. Final DDMP, 2022 was placed before DDMA and approved. The proceedings of the meeting are attached for reference in annexure.

□□□

Chapter -17

Lessons learnt and Documentation

Drought is the major natural calamity arises due to absence of rainfall for a period of time in the district. A *drought* is a period of below-average precipitation in a given region; resulting in prolonged shortages in its water supply, whether atmospheric, surface water or ground water.

In Jharsuguda district in 2015 draught affected the whole district. All the five blocks were affected causing distress for farmers. The below table represents the block level annual rainfall and cultivated area in hectors.

Table No-17

Sl. No.	Name of theBlock	Average Annual Rain Fall	Ground Water Level	Cultivated Area (In Hectares)			
				Paddy		Non- Paddy	
				Rain fed Area In hecters	Irrigated area In hc	Rain fed Area in hc	Irrigated area
1	Jharsuguda	90.00	24.51%	2388.470	2657	23.18	-
2	Lakhanpur	108.78	26.82%	10895.800	7938	49.90	-
3	Kolabira	80.59	19.51%	4746.590	1790	19.58	-
4	Laikera	93.58	24.51%	7231.551	1733	27.21	-
5	Kirmira	89.93	39.61%	4364.82	6947	55.89	-

Table No. 18: Drought 2015

Sl. No.	Name of the Block	Year- 2015			
		No. of GPs experienced drought	No. of Villagesaf fected	Agricultural Crop Area lost (in Hectares)	
				Paddy	Non-Paddy
1	Jharsuguda	17	66	2388.470	nil
2	Lakhanpur	33	124	10895.800	nil
3	Kolabira	9	47	4746.590	nil
4	Laikera	11	45	7231.551	nil

5	Kirmira	8	42	4364.82	nil

Drought is a natural hazard, it has a slow onset, and it evolves over months or even years. It affected the whole Jharsuguda district in the year2015 and causes severe crop damage. 29627.226 hectors of agricultural fields were draught affected, 31503 numbers of farmers affected due to draught.Government provided 20,00,00000 input subsidy to farmers. The impacts of drought can be reduced through preparedness and mitigation.Under the chairmanship of Collector, the Agricultural department, RWSS, RD, Horticulture etc developed an integrated plan to reduce the draught in thedistrict.

The components of a drought preparedness and mitigation plan were the following:

- Prediction
- Monitoring
- Impactassessment
- Response.

Prediction can benefit from climate studies which use coupled ocean/atmosphere models, survey of snow packs, anomalous circulation patterns in the ocean and atmosphere, soil moisture, assimilation of remotely sensed data into numerical prediction models, and knowledge of stored water available for domestic, stock, and irrigation uses.

Monitoring exists in countries which use ground-based information such as rainfall, weather, crop conditions and water availability. Satellite observations complement data collected by ground systems.Satellites are necessary for the provision of synoptic, wide-area coverage.

Impact assessment is carried out on the basis of land-use type, persistence ofstressed conditions,demographics and existing infrastructure,intensity and are alextent,and its effect on agricultural yield, public health, water quantity and quality, and building subsidence.

Response includes improved drought monitoring, better water and cropmanagement, augmentationofwatersupplieswithgroundwater,increased public awareness and education, intensified watershed and local planning,reduction in water demand,and water conservation.

Drought preparedness and mitigation can be accomplished with the following practices: (1) soil and water conservation, and (2) herd management.

Soil and Water Conservation

Conservation practices minimize the disruption of the soil's structure, composition and natural biodiversity, thereby reducing erosion and soil degradation, surface runoff, and water pollution. The following are established practices of soil and water conservation:

- Croprotation
- Contoured rowcrops
- Terracing
- Tillagepractices

- Erosion-controlstructures
- Water retention and detentionstructures
- Windbreaks andshelterbelts
- Littermanagement
- Reclamation of salt-affectedsoil.

Water-supply projects were also implemented for drought mitigation, with a view to strengthen drought preparedness. Activities such as water-use planning, rain-water harvesting, runoff collection using surface and underground structures, improved management of channels and wells,exploration of additional water resources through drilling and dam construction, are implemented as a part of a drought-mitigation plan.

To increase moisture availability, the following in-situ moisture-conservation practices can be adopted:

- ✓ For agricultural crops, measures include ridges and furrows, basins, and water spreading.
- ✓ For tree crops, measures include saucer, semi-circular bunds, crescent-shaped bunds, catch pits and deeppitting.
- ✓ Rainwater harvesting collects rainfall or moisture for immediate or eventual use in irrigationordomesticsupplies.Partoftherainwatercollectedfromroofscanbestored in a cistern or tank for lateruse.
- ✓ Landscape contouring is used to direct runoff into areas planted with trees, shrubs, andturf.

Draughtmitigationandpreparednessisacontinuousprocess.Farmer'scognizanceof draught is very much necessary to tackle the naturalcalamity.

Additional information in the wake up of COVID-19

Initiativestakenatthedistrictlevel: After the out break of pandemic covid 19, nation, state and district level lockdown were declared to break the chain of transmission. Several initiatives were taken by the district administration to stop the chain of transmission thus reducing the morbidity and mortality due to COVID-19. Major initiatives were-

i. To prevent the spread of the COVID-19 virus by breaking the chain of transmission there by aiming for zero morbidity/mortality due to COVID-19.

ii. To identify person having chances for acquiring COVID-19,put them under quarantine, send their swab samples for verification and to have close watch over their healthcondition.

iii. Contact tracing of suspected cases and identifying the person who could have acquired thesame.

iv. Strict vigilance at community level to identify any person having the symptoms of the disease and take further action.

v. Facilitating treatment of COVID-19 patients.

vi. Large Scale awareness at community level.

Institutional Arrangements (teams formed/ specific assignments) made at the district and sub district level for responding to COVID-19 pandemic.

District Collector declared as the nodal person for all preparedness and response activities within his jurisdiction. District Collector will hold regular meetings with health functionaries, DDMA, Revenue, PWD, Forest, Educationand PanchayatiRaj /Local Self Governance Departments where the containment plan will be finalized and operationalized. These officials will issue directions to their ground level staff in all aspects of preparedness, control and containment in accordance with the Containment Plan and Guidelines. District Collector would need to identify key issues (logistics, legal, technical and resources) and address them for implementing containment operations. He/she will keep ready all administrative orders for social distancing,restriction of rail/road/air transport,perimeter control and continuity of essential services.

In addition, a compendium of all the administrative orders required for enforcing the non-pharmaceutical interventions would be prepared well in advance and kept ready to be executed during response phase.

a. District Health EOC & Help line:

COVID-19 Cell District Control Room	06645-272902
DHH Helpline, Jharsuguda	06742390466 9439994857 9439991221 9437040564 18003456779

State Help Line	104

ControlRoomandCallCentre: Adedicated COVID-19Cell has been set up with a control room functioning round the clock. A 24×7 call center at DHH: A call center has been operationalized at DHH, Jharsuguda working round theclock.

No. of DH/SDH	1
No. of CHCs	6
No. of UHC	3
No. of PHCs	17
No of Medical Professionals (Doctor, Compounder, Trained First aiders etc.)	399
No. of ASHA	629
No. of ANMs	113
No. of AWWs	957
No. of Response Force	(ODRAF unit-1/Fire service station-6/Police station-11)

Details of the infrastructures created at the district level to deal with COVID-19 patients.

i. Hospitals – Govt. -27 / Private-3 / Nursing Homes-7 / Clinics -10/ PHCs - 17 & UPHCs - 3/CHCs-6
ii. Hospital and critical care facility, ICUs etc. – Hospital-1 Isolation beds - 100 and ICUbeds-10
iii. Health Personnel in the District: Doctors in govt -76, private -29, Ayurvedicdoctors-23,RetiredDoctors-10,veterinarydoctors,Nursesingovt -103 and private-156 , Paramedical staff—Govt-78 & Private-33, health workers-167
iv. DrugsStock-AllthedrugsareavailableintheNIRAMAYAcentersinDHH, CHC, PHC & UPHC health center on free ofcost.
v. Testing Facilities - Testing facility – demand, availability and gap- Not applicable
vi. Isolation and Quarantine Facilities – There is are 89 Government Quarantine facility, isolation facility is existing in the district with 2985 number of beds with water facility, electricity andtoilets.
vii. Medical Colleges (Allopathic, Homeopathic, Ayurvedic, Siddha etc.) – The VIMSAR Burla is the nearby Medical College which is 70 Kms away from the district headquarter
viii. Resourcesavailableintheneighbouringdistrictincasethelocalcapacity is overwhelmed-There are two COVID-19 hospitals at Sundergarh district and Samabalpur district to accommodate the overwhelmed patients.

Availability of PPE and Live Saving Equipment at the district level.

At present-PPEs - 1070, Ventilators-0, Masks- 54,311 7 N-95 masks-1577, Gloves -, Oxygen Cylinders- VTM-105 etc

i. Adequate stock of Personal Protective Equipment (PPE) and othersafetykitshavebeenkeptreadyinthedistrictspecifically for health

personnel in case ofrequirement.

PPE kit	N-95 Mask	Gloves	Three-layer Mask	Sanitizer
1070	1577	15100	54,311	3100

Medical and Para- Medical Staffs trained for COVID-19 response

Training and Capacity Building**:** To deal with COVID-19 situation, training has been imparted to the following category of clinical and non-clinical staff.

Sl No.	**Category**	**Number of persons trained**
1	Specialist	34
2	MBBS, Doctor	42
3	Staff Nurse	103
4	Pharmacist	42
5	Lab. Technician	29
6	PHEOs	5
7	MPHW (M)	54
8	MPHW(F)	113
9	ASHAs	629
10	Attendant	57
11	Group D staffs	173

Details of the District, Block and Gram Panchayat Level Quarantine/ Isolation Facilities created- In case of requirements, the following quarantine centers have been identified

Place	**No. of Centre's**	**No. of Identified beds**
Jharsuguda	17	466
Kolabira	9	280
Kirmira	8	220
Laikera	11	401
Lakhanpur	34	1640
Jharsuguda MPL	13	208
Brajarajnagar MPL	4	280
Belpahar MPL	13	190
Total	**109**	**3297**

Creation of Temporary Medical Camps:

In line with the Govt. instruction already communicated, total of 109 TMCs have been

identified and completed in all respect of all GPs and ULBs having 3297

beds. Water supply, Power backup and all other logistics such as provisioning of toilet, beds, fan, light etc. have been ensured as on 30.6.2022.

Details of the NGOs/ CSOs and other organizations involved with District Administration for COVID-19 response.

Since the outbreak of COVID 19, NGOs are working with close coordination with District administration. ADM Jharsuguda initiated the NGO coordination with a meeting held on 28.3.2022 to detail out the plan of action for mitigating the negative effect of COVID -19. Under the chairmanship of Collector Jharsuguda NGO coordination meeting was held on 1.4.2022 where all the district level officers, Active NGOs of Jharsuguda district participated in the meeting and submitted the action plan with area of operation tomitigatethenegativeeffectofCOVID19inJharsugudadistrict.On14.4.2022underthe chairmanship of Sub- Collector Jharsuguda the NGO coordination meeting was held to discuss the status of activities undertaken by NGOs, issues, and strategic plans for action. As on 19.4.2022 65 NGOs are working in the district on different areas are asfollow-

INFORMATION OF NGOs & VOLUNTEERS WORKING IN JHARSUGUDA DISTRICT FOR COVID19

Sl No	**Name of District**	**No. of NGOs involved in relief camps, distribution of food etc.**	**Activities**	**No of NGOs involved in relief Camps distribution of food etc.** **(names of NGOs to be indicated**	**Area of Operation** **(Ward No/ MPL/ Village/ Block) to be mentioned**
1	**JHARSUGUDA**	**49**	Providing food, material assistance as well as financial assistanc	1. RSS/H.J.M (Area)	Ward No-1, 2,3,11,16,20,21,22,24(Day time)
				2.Unity Club	Ward No-24
				3.KGN Dargha committee	Ward No-1, 2,3,11,16,20,21,22,24(Night time)

			e to the people in need	4.Jai Mataswari Ganesh Pooja Committee	Ward no-3,9
				05. Voice of Women	Ward no-2,6,11,17
				6.Khidmat	Tatagali, buromal, Telibhata
				7.Hanuman Mandir Seba Samati	Ward no-17,21,22
				8.Brahaman Samaj	Ward no-17,21,22
				9.Gosala Samiti	Ward no-17,21,22
				10.Biswa Group	Ward no-17,21,22
				11.Jharsuguda Youth Group	Ward no-17,21,22
				12.Paschimnchal Ekata Manch	Badmal and OMP area
				13.Maa Manggala Kirnner Welfare Trust	Ward No-22
				14.Sangini	Ward No-16
				15. Brundaban Colony Residential Society	Ward no-9 (Pahadimandir,Lecturer Colony,Oram pada,Kapumal)
				16.Maa Saraswati Mahila Sangathan	Ward no-12 (Bhuyanpada, OMP)

				17. Society of the Divine Word	Ward no-10, Brajrajnagar leporcy colony
				18. Hotel Aryan Group	Ward No-2,4,5,9,19,20,21,22,23,
				19.Jina Esika Nam ha	Telibhata,dharsadhipa
				20. Bajrang Dal	Ward No-5,6,7,11,23
				21. BJP Yuva Morcha	Ekatali Area
				22. Sai Mahila Group	Dhipupada
				23. Sambhav Social Trust	BTM Area
				24.Bhoi Memorial society	Buromal,Santinagar
				25.DNS Foundation	Badhaimunda
				26.Garibo ke Duniya	Mungapada
				27.Helping Hand	sarbahal
				28.Christan Religious Institution.	Cox colony
				29.Mali Samaj	Ekatali
				30.Young star charitable Trust	sarbahal
				31. Pahadeswar Bikash Parisad	Food to stray animal,Jharsuguda town
				32.Eita Jibana	Satnamipada
				33. SEHADA	Kapumal,OMP,Luhurapada Sitliapada,Talibhata,Ekatali
				34.Pabitra Atma Sebika Sangha	W.N-24,4,

				35.Social Action	Dipupada,Byepass,BTM
				36.Help to needy	Dipupada,Byepass,BTM
				37.Kerla Samajam	Jharsuguda town
				38.Adcon Welfare Society	Sarbahal
				39.Kennel Group	Cooked food to street dog Beheramal to Badmal,Baxi chowk to Badhaimunda
				40.Anil Agrawal and Group	Railway station,Mangal Bazar,Friday market area,sukhu godam
				41.Sambalpur Social Service Society	Badehi G.P.Kirmira,Jharmunda
				42.Jansahajog Foundation	Buromal,Budapara,Goutipada
				43. Swami Vivakananda Samajkalyan Sangha	Budapada,Goutipada
				44.Khidmat Mahila Samiti	Talibhata,Ekatali
				45. Mahila Arogya Samiti	Buromal,Budapada
				46. Rajastan Club	Jhaarsuguda Muncipality
				47.Eagle Group	Jhaarsuguda Muncipality
				48.RUNAYA	Jhaarsuguda Muncipality
				49. Ya Taj Foundation	Bangalipada,mangalbazar,Tatagali,khabjanagar
2	**Jharsuguda**	**24**	Public Awarenes ss	1. SEHADA	Jharsuguda Municipality, Jharsuguda Block and Kirmira Block

			generation on social distancing, personal hygiene and other preventive measures.	2. Binapani Club	Lakhanpur Block (11 G.P..)
				3. AJKA	Lakhanpur Block (11 G.P..)
				4. Sambalpur Social Service Society	Jharsuguda Municipality and Lakhanpur Block
				5. Young Star Charitable Trust	Jharsuguda Municipality
				6. SEWA	Kolabira and Laikera Block
				7. VSS Club	Lakhanpur Block (11 G.P..)
				8. Jeena ishika naam hai	Belpahar and Jharsuguda Municipality
				9. People Forum	Jharsuguda Municipality
				10. Durgati Nasini Trust	Sripura G.P.
				11. Vivekananda Seva Sansad	Jharsuguda Municipality
				12. Mahila Arogya Samiti	Buromal
				13. Divya Seva Sangha	Jharsuguda Municipality
				14. The Society of Snehadeepti	Jharsuguda Municipality
				15. Society of the Divine World	Jharsuguda Municipality
				16. Zilla Dibyanga Mahasangha	Jharsuguda Municipality
				17. KHIDMAT	Jharsuguda Municipality
				18.Janseva Ekta Manch	Jharsuguda Muncipality

				19.Nursing Youth Association	Brajrajnagar Muncipality
				20. Jyoti Club	Brajrajnagar Muncipality
				21 Youth club	Brajrajnagar Muncipality
				22.Tiger Club	Belpahar Muncipality
				23.National Youth Project	Belpahar Muncipality
				24.Maa Samleswari Mahila samiti	Kirmira Block
3	**Jharsuguda**	6	Assisting G.Ps in identifying seek ,indigent and PWDs etc	1. SEHADA	Jharsuguda and Kirmira Block
				2. Binapani Club, Pithinda	Lakhanpur Block(11 G.P.)
				3. SEWA	Kolabira and Laikera Block
				4. AJKA	Lakhanpur Block(11 G.P.)
				5. VSS Club	Lakhanpur Block(11 G.P.)
				6. Maa Samleswari Mahila Samiti	Kirmira Block
4	**Jharsuguda**	**5**	Tracking Migrant workers coming from outside state or district and working with such people for registration with GPs, self-quarantine, social	1. SEHADA	Jharsuguda and Kirmira Block
				2. Binapani Club, Pithinda	Lakhanpur Block(11 G.P.)
				3. SEWA	Kolabira and Laikera Block
				4. AJKA	Lakhanpur Block(11 G.P.)
				5. VSS club	Lakhanpur Block(11 G.P.)

			distancing and removal of stigma/ ostracisation if any.		
5	**Jharsuguda**	**16**	Helping elderly, physically and mentally challenged persons with disability, women and others	1.Ram Agrawal	Jharsuguda Municipality
				2.Pawan Sultania	Jharsuguda Municipality
				3. Sandip Awasthi	Jharsuguda Municipality
				5. Kundan Bhosal	Jharsuguda Municipality
				6. Arbind Barik	Jharsuguda Municipality
				7. Ashish Kumar Panda (CHILDLINE)	Jharsuguda Municipality
				8. Radheshyam Naik(CHILDLINE)	Kolabira Block
				9. Dolamani Seth(CHILDLINE)	Laikera Block
				10. Satish Chandra Mishra (CHILDLINE)	Kirmira Block
				11.Rajat Bihari Mishra	Laikera Block
				12.Jyoshna Pradhan(CHILDLINE)	Jharsuguda Block
				13.Tikeswari Patel(CHILDLINE)	Jharsuguda Block
				14. Sailesh Awasthi	Jharsuguda Municipality
				15. Sanjiv Tiwari	Jharsuguda Municipality
				16. Anil Agrawal	Jharsuguda Municipality
6	**Jharsuguda**	**07**	Providing psycho social	1.Madhusmita Baral Counselor ,SAKHI	Jharsuguda Municipality

			counselin g to the distresse d people and geriatric people.	2. Subhashree Sahoo,Counselor,CH ILDLINE	Jharsuguda Municipality
				3. Priyanka Singh,Conunsellor,S wadhar	Belpahar Muncipality
				4. Sabitri Rana,Counsellor,Sw abhiman	Jharsuguda Block
				5.Sanngita Swain,Counsellor Railway CHILDLINE	Jharsuguda Municipality
				6. Rajesh Padhi	Jharsuguda Municipality
				7. Ram Agrawal	Jharsuguda Municipality
7	**Jharsugu da**	**06**	Assisting in manage ment of quaranti ne facilities / GP level medical centers through supply of Voluntee rs and other supports.	1. SEHADA	Jharsuguda and Kirmira Block
				2. Binapani Club, Pithinda	Lakhanpur Block(11 G.P.)
				3. SEWA	Kolabira and Laikera Block
				4. AJKA	Lakhanpur Block(11 G.P.)
				5. Maa Samleswari Mahila Samiti	Kirmira block(4 G.P)
				6.VSS CLUB	Lakhanpur Block(11 G.P.)
8	**Jharsugu da**	**06**	To support the poor and marginali zed in livelihoo d	1. SEHADA	Jharsuguda and Kirmira Block
				2. Binapani Club	Lakhanpur Block(11 G.P.)
				3. SEWA	Kolabira and Laikera Block
				4. AJKA	Lakhanpur Block(11 G.P.)
				5. VSS Club	Lakhanpur Block(11 G.P.)

			activities & income generation through short, medium and long term activities	6. Maa Samleswari Mahila Samiti	Kirmira Block

Total NGO involved-67, Individual Volunteers-22

Volunteers mapped and trained for additional support- online training was done by OSDMA .

Repairing and readiness of MCS and MFS buildings of OSDMA- 2 MFS Repairing was completed on 30.6.2022

Assessment of the capacity of the MCS/ MFS to accommodate the number of evacuees taking into account the social distancing norms in the wake up of COVID-19-Done

Basic readiness of the MCS/MFS to maintain sanitation and hygiene in the wake up of COVID-19- MFS are Ready for Covid 19.

Readiness of the shelter level equipment- All the equipment are in good and functional condition.

Identification and maintaining the list of additional safe shelters like pucca school, college buildings etc. with basic facilities for emergency- In each and every Panchayat shelter have been identified for emergency.

Coordination with District and Block Level Nodal- NGOs and other Civil Society Organizations (CSOs) and finalization of the basic action plan for coordinated response during emergency situation- In regular intervals district administration Coordinated with District and Block Level Nodal- NGOs and other Civil Society Organizations (CSOs) to mitigate the negative effects of COVID19 in the district and effective management of covid pandemic at the district level.

Chapter -18
Forest Fire

Name of the District -Jharsuguda

SL No.	Name of the Division	Name of the Range	Notified Forest Area in Sq km	Zonation of Forest Area		
				Red (Highly Fire sensitive zone) (in Sq. km)	Orange (Moderately fire sensitive zone) (in Sq. km)	Green (Less fire sensitive zone) (in Sq. km)
1	Jharsuguda	Bagdihi	39.85	1.65	1.37	36.83
2		Brajrajnagar	29.87	10.57	1.84	17.46
3		Belpahar	46.47	19.73	3.14	23.6
4		Jharsuguda	6.246	1.15	0.38	4.716
5		Kolabira	27.12	1.39	1.6	24.13
	Total		149.556	34.49	8.33	106.736

No. of villages inside and population in different zone:

There is no Forest Village in Jharsuguda Forest Division.

Detail Action Plans for Management of Forest Fire in the District

i. Fire lines of 300 kms & 98 kms are created and maintained under CAMPA and General fund respectively. In total fire lines of 398 kms are created and maintained in Jharsuguda Forest Division.
ii. Fire awareness campaign and meetings are being conducted in 40 VSSs for prevention and control of fire hazard, Oath also given to people to protect the forest.
iii. Eight nos. of fire squad consisting of 80 persons and 5 fire watchers were deployed along with staff and other squad. And they are provided with 7 vehicles for fire protection.
iv. Mahua trees were identified and controlled burning was done to avoid kindling of fire.
v. Thirty nos. of fire blowers were provided to clear the fire lines and for fire fighting.
vi. Fire protection equipment like safety shoes, uniform, helmets, water bottles, first aid kits, oral rehydration facilities for fire squad persons were arranged and provided.
vii. Awareness message through awareness song, advertisements and awareness campaign were done to sensitize the people.
viii. Pre- fire season workshops, training and capacity building programs were organized to train the squad persons and other staffs.
ix. Incentives were given to 45 nos. of villages/ communities for providing information about fire and for helping in fire fighting.

Roles and Responsibilities of Different Stakeholders

a. Forest Personnels:

The Forest Department staffs have 2 kinds of Roles in protection of Forest Fire. The first one is prevention of Forest fire by creating awareness among the people and the other is taking remedial measures to control the forest fire. The immediate actions have to be taken to extinguish the fire by proper mobilization of the manpower.

The Forest Officials after receiving the information on occurrence of forest fire from various sources (Modis/SNPP satellite data, local informer, TV news, etc.) will ensure its immediate transmission to the concerned Range Officers, Section foresters and start actions to attend and douse the fire.

The forest guard/forester after extinguishing the fire has to do the procedure of reporting through OFMS mobile App.

b. Duty and Responsibilities of Villagers: -

As per the Orissa Forest (Fire Protection) Rules, 1979, It shall be the duty of every person residing in the vicinity of any reserved or protected forests, whether be a right-holder or not to intimate forthwith the occurrence of any fire in the forest or in the vicinity thereof, within his knowledge, to the nearest Forest Officer, and whether or not so required by any Forest officer, to take steps to-

(i) Extinguish any such fire, and

(ii) Prevent by all lawful means within his capacity the spread of any such fire into the forest,

c. Kendu leaf Pluckers and KL wing of Forest Department:

As the main reason for forest fire in many locations under this division is deliberate fire for KL collection, a proper co-ordination with the KL wing of the department is necessary. The KL pluckers also needed to be sensitized not to set fire to the KL areas.

d. PRI Members:

Awareness meetings in villages, schools, colleges etc. have to be conducted in presence of the PRI members in order to make aware the people regarding the ill- effects of forest fire. The people have to be oriented to be alert during the fire season in order to participate in firefighting activities, by informing any fire occurrence in time, by participating in fire extinguishing activity etc. Awareness campaigns should also aim educating the people regarding the legal provisions related to Forest fire as mentioned in Orissa Forest Act, 1972 and Wildlife Protection Act 1972.

e. Fire Department:

Fire department has responsibility to help the Forest department in case of large fire occurrence which may not be extinguished manually. Other than this, Fire department should provide the technical knowledge and support to the Forest personnel in field to prevent and control the Forest Fire.

f. Police Department:

Police Department staff during their patrolling can detect the fire incidence and inform the same to Division Control Room. Being the enforcement authority, the Police Department should manage the law-and-order situation, if any arise due to Forest Fire.

g. Revenue Department:

Revenue department has the role to aware the people in the villages nearer to forest in every meeting, coordinate with the Forest department for the proper management regarding preventing and controlling the Forest Fire.

h. Others:

It is the Role and responsibility of all the citizens to prevent the Forest Fire and save the natural resources of our country.

Standard Operating Procedure for management of Forest Fire

1. Introduction:

Forest fire, whatever be the source & affected area, causes extensive damageto flora and fauna side by side generate heat and smoke causing pollution tolocal environment. In Odisha, forest fire occurs starting from the month ofFebruary to June. But number of incidence increases during the month ofMarch & April. Though there are working plan prescriptions as well as severalexecutive instructions on the subject, no systematic approach and effectivemanagement practices with accountability has been devised for prevention offorestfiresofar.HenceacomprehensiveStandardOperatingProcedure(SOP)to prevent forest fire is required for field level officers to resolve the problematsource.

2. Objectives

The main objective of SOP is to deal with the problem of forest fire step by step at different level with coordination of government institutions and community participation. Besides,it is a management practice tool which is helpful for field staff to reduce the occurrence and minimize the impact of fire there by reducing threat to forest resource and micro eco-system.It will also ensure precise planning and implementation of forest fire control measures.

3. Strategies

The control on incidence of forest fire will be strategized in an effective and speedy manner by responsible staff with active participation of VSSs and local inhabitants.The active participation of VSS and EDC members with incentive mechanism for villagers will be devised. The SOP will clearly indicate the responsibility of each level of field staffs. This SOP shall be followed as per provision stipulated in the Odisha Forest (Fire) protection Rules, 1979.

This Standard Operating Procedure (SOP) endows with the basic steps whichneeds to be taken at field level for dealing with fire preventive measures,information collection & maintenance of records, tackling ablaze area, andpost fire operations. Applicability of this SOP covers the forest area undermanagementofForestDepartment.

4. Responsibilities:

ATDIVISIONLEVEL

The Divisional Forest Officer / In-charge of the Forest Division will be responsible for following works:

i) Organizing Coordination meetings with District level fire officers, DFO Kenduleaves, DM,OFDC and other concerned departments.

ii) Preparation of fire prevention & reclamation Plan and supervise the implementation of the approved plan.

iii) Action for filling of vacant positions in fire risk forest Beats & Sections before on set of fire season.

iv) Procurement of fire fighting equipment and tools required for strengthening the base level.

v) Notification of prohibited activities and display on conspicuous place for public as persection 3(2)of Orissa Forest(FireProtection)Rules,1979.

vi) 24 X7 fire prevention control room at division headquarters in charge ofan officer of Deputy Ranger/ Forester rankwith staffs and equipment. Ensure Registration of official Mobile no with FSI website(http://www.fsi.org.in) forgetting fire alert message and setup effective two-way communication network. Contact number of control room should be displayed at Beat,Sectionand Range offices.

vii) Make Incentive provision for VSS & public informants.

viii) Monitor&review fire control operation on weekly basis in the Division.

ix) Ensure timely submission of fire occurrence report.

AT RANGE LEVEL

The Range Officer / Incharge of the Range will be responsible for followingworks:

i) Monitor and supervise the works like maintenance of fire line,selection of fire fighting squads members well in advance of the fire season.

ii) Repair to forest roads, maintenance of boundary & compartment lines,select site to set up camps, construction of Machans and decide on firefightingsquadmemberswellinadvanceoffireseason

iii) Organizing monthly meetings of VSS during fire season, organize public awareness programmes,proper display of sign boards/banners on proper places.He must have regular interaction with VSSs.

iv) Deploy staff and squad members on strategic points with specific duty and chalk out their movement to cover fire sensitive forest areas.

v) Organizing mock drill training for Forester, Forest Guard , Squad andVSS members with assistance of fire service personnel for effective fire control.Maintain Duty Register and logbook for fire squadsand staff.

vi) Conduct enquiry into each fire affected forest area, assess the loss, verify the action taken by the staff to control fire and submit report

vii) Recommend names of VSS,informants and squad members for incentives and awards.

AT SECTION LEVEL

The Section Forester /Section in charge will be responsible for the followingworks:

i) Prepare detail map showing fire prone area, route chart to those sites andavailablewatersources

ii) Execution and supervision of fire control measure works (maintenanceand creation of Fire Line, compartment and boundary line) in fire proneareaswellinadvance.

iii) Organizing VSS meetings on regular basis and encourage members to take appropriate steps for control of fire asa Convenor.

iv) Safe custody of fire fighting equipments and kits from range office.

v) Receiving fire alert messages from VSS, range office & division controlroom on a day to day basis, ensure entry into a register and pass on to Beat Guard.

vi) Arrange labour,hire of vehicle and provide logistic support to fire fighting squads.

vii) Action taken report with details of area fire affected with GPS survey and damage to flora and fauna (photographs)to be submitted within 48 hours.

viii) Keeping close contact with local FireService Station for information and technical guidance.

ix) Expeditiousstepstoinitiatelegalactionagainstculpritswithdueprocedureandadequateevidence.

x) Ensure all equipments required for fire fighting have been supplied to allForest Guards, VSS members, fire fighting squads and are in workingcondition.

AT BEAT LEVEL

Beat Forest Guard / In charge of the Beat will be responsible for followingworks:

i) Wellacquaintedwitharea,map, topography,routesandfireriskareasofhisjurisdiction.

ii) Makeregularpatrollinginforestareasandinteractionwithlocals.Hewillprovide his mobile no. to local ward member/ Sarpanch/ Important localvillagers and request them for providing the information about forest firepromptly.

iii) Receive messages from control room, range office, section forester andVSSonfireoccurrence,recordin logbook/register.

iv) Submit weekly report ensuring forest area not affected by fire due to hiseffort.

v) Submit the area affected by forest fire on daily basis to Section Foresterand RangeOfficer.

vi) Makefrequentnighthaltsininteriorpocketsofhisjurisdiction.

5. Preparedness before the onse tof the fire season

(a) i. Range Officer will ensure clearance of the fire lines in all the vulnerableforests in the range. DFO will ensure the completion of the fire linemaintenanceand will report to theRCCF/PCCF before onset of fireseasons.

i. Supply of the fire maps clearly showing the fire prone sites to all beat guards,section foresters and range officers will been sured by the DFO.

ii. Range Officer will ensure proper deployment of fire fighting squad and its members in strategic vulnerable locations within and outside forest area in such a way that they reach the fire spot within minimum time gap.

iii. Before onset of fire season, Range Officer will convene a meeting of all the VSS in his jurisdiction and analyze and discuss the success and failure of efforts in previous years to extinguish forest fire. He will decide the strategy after due consultation with VSS members, Foresters, Forest Guardsand squad members for current year. Range Officer will also apprise the VSS members about incentive scheme for checking forest fire by villagers.

iv. Updation ofPhone/ mobile nos. and email IDsof all Range officers, section foresters, beat guards , Fire fighting squads and VSS presidentsetc. will be done by the control room of the DFO and a copy will besupplied to each Range officerwho will supply a copy to each ForesterandForestGuard.

v. Procurement and supply of Fire fighting equipments, safety kits, communication devices, transportation and other logistic supports.

(b) The Divisional Forest Officer shall procure required quantity of fire fightingequipments and safety kits for each range. Safety kits will include first aid medicines, mask, hat,waterbottle,torch with batteries besides other necessary items.

(c) DFO will organize necessary training programme on use and maintenance of equipments at the site and also ensure mock drills are conducted. After stock entry, required equipments and safety kits would be supplied to each Range Officer who will further supply to the section Foresters and beat Guards.

(d) Specific Use of Blowers- It is observed that fire lines maintained to obstructspread of fire, get covered by fallen dry leaves and it is of no use in fireseason. Besides maintaining the fire lines on a regular basis, blower can alsobeusedforregularclearingoffirelines.This is a machine operated device and is very effective equipment for making fire line by blowing out the fallenleaves on forest floor thereby creating a barrier to the ground fire. Blower is also helpful at the time of fire suppression operation.

(e) Equipments for communication such as VHF sets, walkie talkie,mobile phones would be procured / repaired and supplied to all concerned well before theonset of the fire season. A set of mobile would also be provided to the leader of each firefighting squad/ VSS president and to the team leaders of the local youths for making quick communication without loss of time.

(f) It will be the duty of each section forester to ensure that all equipments provided to fire fighting squad, VSS members and Forest Guard are in working condition.

6. Operation after occurrence of the forest fire

a. The DFO & RO after receiving theinformation on occurrence of forest firefromvarious sources (Modis satellite data, own staff local informer,TV news, Print Medias etc), willrecord the same in the Log Register through controlroom of the division and will ensure its immediate transmission to the concernedRange officers, Section Foresters andbeat Guards who will also record thesameintheirLogRegistersandstartactionwithoutlossoftime.

b. The concerned Section Forester and Beat Guardswho are key personsincontrolling and suppressing a forest fire, will rush to the spot fully equippedwithteam of manpower, fire fighting squads / VSS members/ villagers whateverwillbenecessary.

c. Local fire stations will also be informed by Range Officer and ensure that they reach with water tanker inaccessible forest areas.Their services will be properly utilized to extinguish fire.

d. Range officers have to ensure that prior arrangement for providing mode of transportation to vulnerable fire sites has been made and will review at Range,Section and Beat level.Necessary emergency fund should also be made as per provision particularly at Forest Guard level to tackle the problems in an effective manner.

e. For every two persons in fire fighting team, one blower has to be madeavailable. Blower would be used to make fire line at least 1.5 mt. away fromthe periphery of fire area. Second team will join with the team and take up additional worksas per requirements on the site.

f. In case of multiple fire sites at the same time in a beat, section or Range area,the local manpower would be utilized along with the divisional squads deputed in other Section and Ranges.

g. In case of burning of dry trees, solid logs, branches, where fire usually last for long period, local fire station may be called with water tank to extinguish the fire.

h. At all the sites, arrangement of sufficient drinking water & first-Aid would be made available.

i. The Section Forester/Forest Guard will personally ensure complete suppression of fire at site. They will assess the damage on the spot with GPS reading, enquire the cause of fire and furnish detail report to Range officer within 24hour of the occurrence. But, message on fire and action taken information would be passed to Range office and control room at the end of the operation through VHF/mobile phone.

j. Information on Fire in VSS forest area would also be responded promptly.The section forester will lead the team with assistance of VSS members.

7. Evaluation and Reporting

a. On complete suppression of fire, the section forester will make a detail report on the incidence within 48 hours.

b. The Range Officer, if feels necessary, may conduct further enquiry otherwisesend the report with his comment to the Divisional Forest Officer within 48hours.

c. At Division level, after scrutiny the consolidated report will be sent forward (to RCCF and PCCF level) within 3 days.

d. Compiled information from DFO would reach to Forest Head quarters (PCCF Office) fortnightly for each Division without fail.

e. Complete information of a fire season would compiled and analyzed.Site wise source of fire and frequency of occurrence would be kept on record. The period for highest and lowest number of occurrence can be evaluated.

f. Such field level basic information would be taken into consideration while preparing division fire prevention management plan.

g. Post fire operation shall be taken up.Soil and Moisture Conservation measures would be given priority in affected areas. Besides, Gap plantation would be taken up to bring vegetation cover in original condition.

Model Fire Protection and Reclamation Plan and Month wise work programme for prevention of Forest Fire are enclosed in Annexure 1 and 2respectively.

(Annexure-I)

MODELFIREPREVENTIONANDRECLAMATIONPLAN

1. Introduction
2. Aim and objectives
3. DescriptionofArea
   a) General
   b) Climate
   c) Topography
   d) Firefuels
   e) Landuse
   f) Wateravailability
   g) Infrastructuresandaccesstosupports
4. ForestFire
   - ForestfireHistory
   - FireRisk,Hazardandthreat
   - Summaryofforestfirepotentialissues
5. Firemitigationstrategies
   - HazardManagement
   - Accessandstrategicfirebreaks
   - Publiceducation andcommunity awareness
   - NoFireZone
   - Assessmentoffiremanagementstrategies
6. FundrequirementforForestFireManagement-
   - AssessmentofFundforfirelinecreation
   - Incentivestoinformers.
   - Strengtheningofbeatinfrastructureforfirereporting.
   - CashinhandrequiredfortheForestGuardtotakestepsforextinguishingthe fire.
   - CostofEquipments/Blowersetc.
   - Contingencies

APPENDIX

- Maps
- Worksprogramme
- Guidelines, specifications & minimum standards and a month wise workprogrammefor prevention of forest fires areenclosed in Annexure- 1and2respectively.

(Annexure-II)

MONTHWISE WORK PROGRAMME FOR PREVENTION OF FOREST FIRE

Month	Workitems	Actionat			
		Beat Level	Section Level	Range Level	Division Level
AugustSeptember	CoordinationmeetingwithDeputyFireOfficer,DM, OFDC,DFOKLandVSSrepresentatives			y	y
	PreparationofFirepreventionandreclamationPlan	y	y	y	y
	FinalizationandSubmissionofPlan			y	y
October	DiscussionandrecommendationofPlanbyRCCF				y
	ApprovalofthePlanbyPCCF				y
November December	Analysisandrationalizationtorequirementof VHF, firecontrolequipmentsandprocurement.		y	y	y
	Firelinecreation,maintenanceandcompletionoffieldworks	y	y	y	y
	ConstructionofMachhansandselectionofcampsites		y	y	
	Awareness&Training		y	y	y
January	SelectionofFirefightingsquadsdrawingyouthsfrom fireriskforestvillages		y	y	
	Maintenance of Forest roads andverification ofapproachroutestovulnerableforestareasandvillages	y	y	y	y
	LocatingLabourpotential	y	y		
	FirePrevention ControlRoom				y
FebruaryJune	Footpatrollingtovulnerableareas	y	y	y	y
	MaintenanceandcreationofFirelinebyblower	y	y		
	Collectionofinformationofforestfireandactionthereof	y	y	y	y
	Receivefirealertinformation,Registrationandactiontakenthereof	y	y	y	y
	implementationofreclamationworksinburnedareas(S&MC)	y	y	y	y
	Monitoringfirefightingworks		y	y	y
July	Analysisandsubmissionoffinalreportonforestfire		y	y	y
	Suggestivemeasuresforimprovementinpractices	y	y	y	y

Other important Information

The various reasons for forest fire in Jharsuguda Forest division are as follows:

a. Deliberate fire put by the villagers for collection of Kendu leaf etc.

b. Setting of Fire around the Mahua trees for collection of Mahua flowers.

c. Accidental fire from the agricultural land during land preparation for agriculture.

d. Accidental fire due to careless activities of visitors in picnic areas.

e. Deliberate setting of fire in the Forest for poaching the animals.