



**OSDMA**



# DISTRICT DISASTER MANAGEMENT PLAN 2025

**PREPARED BY**

**District Disaster Management Authority, Puri**

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## **PREFACE**

Natural disaster or calamity brings widespread damage to the property and lives of vulnerable people. The District Disaster Management Plan intends to mitigate the impact of such disasters be it Flood, Cyclone, Earthquake, Tsunami, Drought, Pandemic etc. Undeniably poverty in rural areas is directly proportional to the damage due to its impact. The responsibility of District Administration becomes manifold to prepare them for mitigation. It includes relief, rehabilitation and preventive measures to lessen the impact. Puri District being a coastal district is vulnerable to all such calamities.

A treatise on such management has been attempted taking all things into consideration and obtaining valuable feedbacks and past experiences of all the stakeholders and line departments. I would like to thank all of them for their active involvement in the exercise. Further I hope that this referral book will be of great help to all concerned related to disaster management. The role & active co-operation of PRI members and People's Representatives during disaster management are undoubtedly laudable in the past.

This endeavour will go a long way to guide them in managing the disasters in saving loss to life and property of the vulnerable people whose coping mechanism to fight the impact of disasters are not adequate due to various socio-economic reasons and locational disadvantage.

Further, I would like to congratulate and thank Odisha State Disaster Management Authority (OSDMA) for providing the technical inputs in shaping up the District Disaster Management Plan and the efforts of DEOC, Puri for the preparation of DDMP, Puri 2025-26.

We must remain committed and work together to ease the sufferings of mostly vulnerable people during disasters.

Collector & Chairperson, DDMA,  
Puri

## **Abbreviation**

ADM	:	Additional District Magistrate
AWC	:	Angan Wadi Centre
BDO	:	Block Development officer
BCR	:	Block Control Room
CCA	:	Climate Change Adaptation
CDM&PHO	:	Chief District Medical & Public Health Officer
CDPO	:	Child Development Project Officer
CDVO	:	Chief District Veterinary Officer
CMRF	:	Chief Ministers Relief Fund
DC	:	District Collector
DCR	:	District Control Room
DDMA	:	District Disaster Management Authority
DDMP	:	District Disaster Management Plan
DDM	:	District Disaster Manager
DEOC	:	District Emergency Operation Centre
DRDA	:	District Rural Development Agency
DSWO	:	District Social Welfare Officer
DRR	:	Disaster Risk Reduction
GoI	:	Government of India
GP	:	Gram Panchayat
HRVA	:	Hazard Risk and Vulnerability Assessment
MO	:	Medical Officer
NGO	:	Non-granted Organisation
OSDMA	:	Odisha State Disaster Management Authority
OIC	:	Officer In charge
PHC	:	Primary Health Centre
PWD	:	Public Works Department
RD	:	Route Distance
SP	:	Superintendent of Police
VSO	:	Veterinary Stock officer
W&CD	:	Women & Child Development
UNDP	:	United Nations Development Programme
NIDM	:	National Institute of Disaster Management
CDKN	:	Climate & Development Knowledge Network
GEAG	:	Gorakhpur Environmental Action Group
ISET	:	Institute for Social and Environmental Transitions
SLD	:	Shared Learning Dialogue

# Chapter – 1: Introduction

## The Necessity of the Plan:

Based on the past experiences to combat natural disasters such as flood and cyclone that have ravaged densely populated areas of Puri district, followed by the spread of epidemics and allied diseases, the follow-up actions taken thereby and the lessons learned from it, the rationale of an effective and realistic District Disaster Management Plan was felt. A comprehensive DDMP will strengthen the efforts of the District Administration.

The District Disaster Management Plan has a multi-hazard approach and incorporates various actions, which will promote a culture of preparedness. Triggeris an emergency quick response mechanism, which would spontaneously set in motion all disaster management activities for response and recovery without loss of critical time. The aim of the Plan will be – fool proof communication, authentic and accurate database, documented and rehearsed, to be activated in the shortest possible time with minimum simple orders and procedures ensuring active participation by Government, Community and volunteers at all levels, making optimal utilization of men, material and resources with no gaps or no overlaps to prevent loss to lives and minimize loss to property ensuring fastest restoration of the situation.

## Changing Disaster Profile and Lesson Learnt:

**DISASTER** – “A serious disruption of the functioning of a society, causing widespread life, property or environmental losses, which exceed the ability of the affected society to cope using its own resources”.

Basing on the disasters experienced by the district in the last 15 years, probability of flood ranks first. Accordingly, the occurrence of other disasters such as cyclone, fire accident, drought, epidemic and earthquake rank as orderly mentioned.

<b>Disaster</b>	<b>Year</b>
Flood	1956, 1959, 1969, 1970, 1986, 1987, 1988,1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2001, 2003, 2005, 2006,2008,2011, 2014, 2020 & 2022
Cyclone	1967, 1968, 1970, 1971, 1972, 1973, 1999, 2013, 2014, 2018, 2019, 2020 & 2021
Fire Accidents	Every year in summer and winter.
Drought	1956, 1970, 2000, 2002, 2010 and 2015.
Epidemic	During cyclone & flood In 2020 & 2021 World Pandemic Novel Corona Virus (COVID-19)
Earthquake	2013

Frequency of climate induced disasters is increasing every year. The District Disaster Management Plan tries to encompass the Climate Change Action Plan. The lesson learnt from the management past disasters basically pertaining to Planning, Preparedness and Prevention activities are included in the District Disaster Management Plan.

Under the DM Act 2005, it is mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous and integrated process of planning, organizing, coordinating and District Disaster Management Plan, Puri, 2025-26

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.

### **1.1 Aims and Objectives of the DDMP:**

The objective of the District Disaster Management Plan is to ensure prevention, response and recovery to facilitate planning, preparedness, operational coordination and community participation in the shortest possible time.

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

### **Responsibility of the Preparation of the Plan:**

The Disaster Management Plans have been formulated starting from the village level up to the district level. The plan clearly indicates the role and responsibility of each team member. The Collector in the District level, Sub-Collector in the Sub-Divisional level and the BDO in the Block level will be chief of the team. The Sarpanch plays a key role at GP level and the Community with the guidance of the Village Disaster Management Committee to carry out this plan in the village level. Civil Society Organisations also have a vital role during the implementation of this plan in the ground level.

The Codal provision of District Disaster Management Act 2005 Para 30-Formation of District Disaster Management Authority, Para 31-There shall be plan for Disaster Management of every district in the State. DDMA will prepare the District Plan in consultation with the local authorities. The Committee also takes stock of the arrangements, monitors preparedness and suggests improvements in response mechanisms and develops a document for effective management of Disasters in the District.

### **1.2 Stakeholders and their responsibilities**

At the District level, District Disaster Management Authority, with the District Collector designated as the Response Officer (RO), and other line departments at district HQ are responsible to deal with all phases of disaster management within district. Other technical institutions, community at large, local self-governments, NGOs etc. are also stakeholders of the District Disaster Management Plan. Framing of a Comprehensive District Disaster Management Plan to combat the effects of disasters and minimize loss of life and property. The role and responsibilities of different stakeholders

involved in disaster management such as Government officials, Public, NGO sector, Civil Defence, Interest groups, CBOs, and the community in disaster mitigation during different stages of disaster are included in the Plan.

### **Pre-Disaster Period (Preparedness)**

1. Formation of District Disaster Management Committee.
2. Formation of District Disaster Management Plan for the running year.
3. Hazard Analysis & Resource Inventory.
4. Allocation of responsibilities to the individual actors/ Groups/ Institutions/ Organizations.
5. Broadly defining the responsibilities and operational jurisdiction.
6. IEC Programme
7. Training and capacity building.
8. Logistic arrangement – Cyclone/ Flood shelters, Food items like Rice, Chuda & Guda, Drinking water, medical facilities, clothing, other essential commodities, communication network like wireless system etc.

### **During Disasters**

1. Functioning of District Control Room & other Block/ Tahasil/ Line Departmental Control Rooms.
2. Dissemination of warning/ information.
3. Coordination meeting with officials at District Control Room in each 12 hours interval to take stock of the situation.
4. Alert Line Deptt. And support functionaries.
5. Immediate freezing of reasonable POL stock with different Petrol Pumps.
6. Rescue Operation / Evacuation teams (already identified) providing infrastructure facility and movement to rescue centres.
7. Management of Rescue shelters.
8. Administration of Relief.
9. Preparation of the Daily situation report.
10. Daily stock of the situation by District Magistrate and Addl. District Magistrate.

### **Post Disaster**

1. Assessment & enumeration of damage.
2. Distribution of Relief/ Emergent Relief as per the provisions of ORC.
3. Monitoring Relief Operation organized by outside agencies/ UN Agencies/ Red Cross/ NGOs/ PSUs other states etc through District Administration.
4. Restoration of Communication – Roads & Railways.
5. Restoration of Electronic communication system.
6. Immediate arrangement of free kitchen in the cut off/ shelter camps and inaccessible areas.
7. Ensuring transportation of Relief Materials to affected pockets.
8. Ensuring safeguarding of belongings of the evacuees.
9. Maintenance of Law & Order.
10. Ensuring safe availability of Drinking water.
11. Provision of Medical facilities and Minimum sanitation.
12. Removal of debris and disposal of carcasses.
13. Helping the evacuees to return to their homes.
14. Special care to children, Lactating Mothers, Old & infirm.
15. Documentation of the entire events.
16. Keeping liaison with field and state Govt. & interaction.

### **The District Collector has the following duties:**

- i. To facilitate and coordinate with local Government bodies to ensure that pre and post disaster management activities in the district are carried out.
- ii. To assist community training, awareness programmes and the installation of emergency facilities with the support of local administration, non-governmental organizations and the private sector.

- iii. To function as a leader of the team and take appropriate actions to smoothen the response and relief activities to minimize the adverse impact of disaster.
- iv. To recommend the Special Relief Commissioner and State Government for declaration of disaster.

**Local Authorities have the following duties:**

- i. To provide assistance to the District Collector in disaster management activities.
- ii. To ensure training of its officers and employees and maintenance of resources so as to be readily available for use, in the event of a disaster.
- iii. To undertake capacity building measures and awareness and sensitization of the community
- iv. To ensure that all construction projects under it conform to the standards and specifications laid down.
- v. Each department of the Government in a district shall prepare a disaster management plan for the district. The local authorities need to ensure that relief, rehabilitation and reconstruction activities in the affected area, within the district, are carried out.
- vi. Trust / Organisations managing Places of Worships & Congregation
  - a. Each establishment / organisation identified as –critical infrastructure and key resource||,
  - b. Including places of congregation in a district shall prepare –on-siteand –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.

**Website Address**

- [www.metocph.nmci.navy.mil](http://www.metocph.nmci.navy.mil) for US NAVY WEBSITE
- [www.imd.gov.in](http://www.imd.gov.in) for Indian Meteorological Department WEBSITE
- [www.cnn.com/weather](http://www.cnn.com/weather) for CNN WEBSITE
- [www.bbc.co.uk/weather](http://www.bbc.co.uk/weather) for BBC WEBSITE
- [www.weather.co.uk](http://www.weather.co.uk) for Sify website to get the local weather report
- [www.ori.nic.in](http://www.ori.nic.in) for NIC, Websites of Orissa

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## Chapter-2 District Profile

### 2.1 History & Location:

In 1912, the new province of Bihar and Odisha was formed and subsequently Odisha became a separate province in 1936. After integration with Odisha on 1st January 1948, of the feudatory states of Nayagarh, Daspalla, Khandapara and Ranapur with a total area of 3941 sq. km., a separate sub-division comprising these ex-states was added to Puri District with its headquarters at Nayagarh. The fourth sub-division of Bhubaneswar was established on 26th January 1959. The old Puri District consisted of four sub-divisions i.e. Puri Sadar, Khurda, Bhubaneswar and Nayagarh. Puri Sadar sub-division consisted of four Tahasils i.e. 1) Krushna Prasad 2) Sadar 3) Pipili and 4) Nimapara. Again, by the year 1995, Puri District was divided into 3 Districts i.e.

1. Nayagarh District comprising of Nayagarh sub-division.
2. Khurda District comprising of Khurda and Bhubaneswar sub-divisions.
3. Puri District comprising of Puri Sadar sub-division only.

### 2.2 Administrative Setup:

Brief outline of administrative set up.

1.	District Head Quarters	1
2.	Sub-division	1
3.	Municipality	1
4.	N.A.C	3
5.	Block	11
6.	Tahasils	11
7.	Gram Panchayat	268
8.	Revenue Village	1772
9.	Police Station	28
10.	Assembly Constituency	6
11.	Parliamentary Constituency	2

The district has more than 150 Km large coast line with plenty of aquatic and marine resources. Distributaries of river Mahanadi like Daya and Bhargabi is flowing through the district. Which produces large area of river bank and alluvial plain. So the district is rich in agrarian product such as rice, black gram, groundnut, vegetables, etc.

### 2.3 Climate & Rain fall:

Being on the coast of the Bay of Bengal the district of Puri enjoys the cool breeze flowing from the Bay of Bengal which makes the hot and tropical weather of Puri during the summers tolerable in compare to the places of interior Odisha. The weather here remains humid in summers which is said to be between the months of March and June. In the months of July to August the temperature remains modest and the months between October and January are said to be winter season. During the month

of June Puri witnesses the south west monsoon and the temperatures tends to fall to around 28° C up to the month of October. On an average, there were 62 rainy days (i.e. days with rainfall of 2.5 mm or more) in a year in the district. This number varies from 66 at Pipli to 50 at Krushnaprasad.

### 2.3.1 Temperature

The period from March to June is one of continuous increase of temperature and May and June are the hottest months. The mean daily maximum temperature in June is about 33° C and mean daily minimum temperature is about 27° C. On individual days, the maximum temperature sometimes reaches above 44°C. During the monsoon season, the temperatures remain almost steady, the mean daily maximum temperature in the range of 31-32°C and the mean daily minimum temperature in the range of 26-27°C. With the withdrawal of the monsoon towards the end of September, the district experiences a slight increase in the day temperatures.

### 2.3.5 Rain Gauge Stations:

In each Block Head Quarter, Rain Gauge Instrument has been installed to report proper measurement of rainfall each day to the District Control Room. The Head Clerk of respective Blocks has been designated as Rain Recording Officer and is responsible to report the rainfall to District Control Room.

(Normal Rainfall of Puri District – 1424.3mm)

Sl. No.	Month	Actual Rainfall (in mm)										
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	January	55.27	20.32	0	0	0	8.03	0	10.93	0	19.45	0
2	February	3.36	0.09	0	0	0	21.61	0	2	0	3.08	1.67
3	March	0.18	0.82	22.73	0	14.09	25.78	0.09	0	20.96	20.47	31.54
4	April	68.48	0.55	5.09	51.77	11.64	67.21	7.38	0	8.57	1.97	47.9
5	May	15.16	108.43	6.55	132.85	128.73	131.33	165.96	57.09	20.04	63.69	118.52
6	June	109.67	110.65	153.97	154.05	151.39	103.64	205.86	14.77	108.24	110.25	153.88
7	July	230.09	197.04	331.18	640.97	375.05	110.36	232.67	343.69	175.16	184.09	133.92
8	August	319.67	382.13	314.38	390.98	287.61	435.95	168.12	326.74	279.21	306.43	209.48
9	September	236.54	287.36	198.10	322.75	533.21	295.05	556.32	233.15	245.77	261.59	-
10	October	31.65	64.63	306.94	231.34	350.1	92.05	56.58	210.83	118.27	105.83	-
11	November	36.45	52.28	103.57	2.87	12.16	3.26	69.39	0	11.62	0.17	-
12	December	26.93	0	68.40	8.42	0.73	0	114.03	0	3.5	96.5	-
TOTAL		1133.45	1224.3	1510.91	1936.0	1864.71	1294.27	1576.4	1199.2	991.94	1173.52	696.91

## 2.4 Geography & Topography:

Puri is one of the coastal districts of Odisha. It is situated on the Eastern Coastal plain of Odisha. It is surrounded by the district Cuttack and Jagatsinghpur in its north, Khordha in its west, Ganjam to the southwest and the Bay of Bengal to its East and South-East.

Latitude- 19° 28' N to 26° 35' N

Longitude- 84° 29' E to 86° 26' E

Altitude - 0 meters

Time Zone - UTC+5:30

## **2.4. Geographical area of the district**

Geographical area of Puri district is 3051 km<sup>2</sup> or 264988 Ha.

## **2.5 River System**

The Puri District is a deltaic zone of the Mahanadi system with major rivers like Kushabhadra, Bhargavi, Daya and Devi with tributaries of small rivers such as Luna, Makara, Rajua, Prachi, Dhanua, Ratnachira and Kadua.

## **2.6 Sea-coast Bays**

The length of the sea-coast of the district of Puri is nearly 150.4 km. Sandy ridges are found along the sea-coast which stretch into the districts of Jagatsinghpur and Ganjam. One such sandy spit divides the lake Chilika from Bay of Bengal. These sandy ridges and dunes are formed by the strong monsoon currents which blow over the country for nearly 8 months of the year. The ridges vary from about 7 km to a few metres in width and have prevented most of the rivers of the district from finding their way into the ocean.

## **2.7 Lakes**

### **2.7.1 The Chilika Lake**

Asia's largest brackish water lagoon the Chilika Lake was probably a part of Bay of Bengal separated later by the formation of sand ridges. The southern extremity of the Mahanadi delta has also contributed towards its isolation from the sea and formation as an inland lake. The Chilika Lake is a shallow inland sea situated in the extreme south of the district and extends into the district of Ganjam. It is separated from the Bay of Bengal by a group of islands formed by silt deposit and by a long strip of land which for miles consists of nothing but a sandy ridge, little more than two hundred yards (180 metres) wide.

### **2.7.2 The Sar Lake**

To the north-east of Puri Town in the Puri subdivision there existed originally an extensive swamp formed by the backwater of the river Bhargavi which has almost lost its existence today. Popularly it was known as Sara Pata.

### **2.7.3 Island**

No Island is found in the coastal waters of Puri, but the Chilika Lake is separated from the Bay of Bengal by a group of Islands.

## **2.6 Demography:**

The total population of Puri district as returned by the Census of 2011 was 16,98,730 of whom 8,65,380 were males and 8,33,350 females. It comprises of 11 Blocks & 4 ULBs spreading over 28 police stations. The Block-wise and ULB-wise population is given below as per 2011 Census.

### **2.6.1 Households and its distribution:**

Sl. No	Total Number of Families/H H	Category		Category				Category	
		Rural	Urban	SC	ST	OBC	GEN	BPL	APL
1	367269	313188	54081	NA	NA	NA	NA	NA	NA

### 2.6.2 Population and its composition:

Sl. No	Population			SC		ST		OBC	
	T	M	F	M	F	M	F	M	F
1	1698730	865380	833350	164366	160767	3240	2889	NA	NA

- Population density of the district and decadal growth of population-

### 2.6.3 Religion wise distribution of Population:

Sl. No.	Total Population	Category				
		Hindu	Muslim	Christian	Sikh	Others
1	1698730	1644905	46094	4239	193	3299

### 2.6.4 Age Group

Sl. No.	Total Population	0-6 years	6-14 years	15-59 years	60 years and above
1	1698730	173000	NA	NA	NA

### 2.6.5 Sex Ratio:

1	Sex Ratio (Females per 1000 males):	963
2	Sex Ratio(0-6 Years):	932

### 2.6.6 Literacy Rate:

Literacy Rate	Total	Male	Female
	84.67	90.85	78.28

[Details are at Table No.1.1 to 1.9 of Volume II of the DDMP]

## 2.7 Socio-Economic profile:

### 2.7.1 Workforce participation:

The survival and subsistence of human society largely depends on the division of labour. Since some people have to work for production either for their own consumption or for social wealth, it is essential for some individuals of the society to indulge in some form of economic activity. There are 621676 nos. of workers working in the district out of which 450536 nos. are main workers and 171140 nos. are marginal workers.

### 2.7.1.1 Workforce participation rate- Male/ Female

Gender plays a critical role in workforce distribution due to division of works which are more or less gender specific. Census, 2011 revealed that participation of male workers is 80.18 percent as compared to the female counter part (19.81 percent). Participation of female main workers is significantly lower i.e. only 11.38 percent compared to male i.e. 88.62 percent, participation of female marginal workers is i.e. 42.02 percent than male i.e. 57.98 percent.

### 2.7.2 Land Holding Pattern:

The Agriculture Census, 2010-11 showed the district had 173739 farmers from 326129 rural households. Thus, it is expected that remaining 152390 (46.72% of the rural households) households are landless. Out of 173739 farmers, 69.42% (120624), 22.16% (38506), and 8.40% (14609), are marginal, small, and the farmer belongs to other category. Further average size of holding by size class is 1.083 acre in the district. There is no official data on share cropper and land less the number of Semi Medium and Medium Farmers is not maintained separately but have been included in farmers under others category.

### 2.7.3 Agriculture and Irrigation

During 2015-16, the net shown area was 158160 hect. against the 188183 hect. cropping areas and 348102 hect. geographical area of the district. Irrigation potential created are 116255 hect. The total production of paddy was 737532 MTS., 95.4 MTS wheat, 279 MTS. maize, 49.8 MTS. Ragi, 30515.13 MTS. Pulses, 44036.6 MTS. oilseeds, 8718.6 MTS. Groundnut, 429915 MTS. vegetables and 4657 MTS. spices.

#### 2.7.3.1 Consumption of Fertilizer

During 2015-16 about 221209.8 Qtls. fertilizers (NPK) were consumed in the district. Similarly, use of pesticide is recorded as 136392.45 KG/Ltr.

### 2.7.5 Industries and mining

Since, inception of DIC till the end of the year 2013-14, the broad category of industries promoted along with their numbers is as follows.

Sl No.	Category of Industries Promoted	Nos. Promoted
1	Agro Based	1452
2	Forest Based	221
3	Animal/Husbandry Based	30
4	Textile Based	421
5	Chemical Based	109
6	Engineering/ Allied Based	461
7	Building/Ceramic Based	289

8	Plastic/Rubber Based	42
9	Miscellaneous/Service Based	2539
<b>TOTAL</b>		<b>5564</b>

Handicrafts-Brass, Bell metals, Pottery, Stone Carving, Goldsmithy, Bamboo & Cane works, Basketery, Iron Works, Silk Weaving, Filigree, Ornamental Fabric, Toy making, Carpentry. Puri is famous for its art, architecture and handicrafts. The artists and artisans of Puri have created wonders on stone and wood. The temples of Lord Jagannath of Puri and Sun Temple of Konark, the Pattachitra of Raghurajpur, the Appliqué work of Pipli and Coir products of Sakhigopal bears ample testimony of the skill of our artists and artisans.

### **2.7.6 Education**

Education is the prime agency which builds the capacity of a community to withstand in any type of disaster. In Puri, 3347 Habitations are having primary School within the village itself whereas 361 habitations having Upper Primary Schools within 3 KMs. The district had 1307 Primary, 35 Primary with High schools, 672 Primary with Upper Primary, 12 Secondary, 237 Upper Primary 335 Upper Primary with Secondary, totalling to 259 schools. Total number of teachers in the district is 8136. The PTR is 18.53 in the district. During last year, number of students enrolled at the age group of 6 to 10 years was 144295 students which include 74857 boys & 69438 girls students and 793 students which include 444 boys and 349 girls students were found under never enrolled category. The number of students enrolled at the age group of 11 to 14 years was 76675 students which include 39901 boys & 36774 girls student and 413 students which include 239 boys and 174 girls students were found under never enrolled category

### **2.7.7 Health**

The district health vulnerability snapshot shows Tuberculosis is one the major diseases in the district followed by Diarrhoea, Pneumonia and Jaundice. Villages frequently affected by such diseases and cases of reported deaths are reflected in Table 1.34 in Volume - II. The district had 241 sub centres, 45 PHCs, 16 CHCs, 1 Ayurvedic Hospital at Puri, 15 nos. of 10 Ambulance and 4 general Ambulance, and 1 blood bank at DHH, Puri across the district. To run such medical establishments, 130 doctors, 338 paramedical staff, 214 ANMs and 1539 ASHA are extending their services in the district. In health indicator dimensions, the district has ensured Institutional delivery by 97.4%, immunization by 94%. But the district had an Infant Mortality Rate (IMR) of 25 and Maternal Mortality Rate (MMR) of 75.

### **2.7.8 Electrification**

Number of revenue villages partially electrified in the district is 1445. No village in Puri district is deprived of electricity. Further, out of 414749 households in the district, 45549 households have been electrified and remaining 85297 households are expected to cover under various electrification scheme of the Government.

### **2.7.9 Drinking water and sanitation**

In the district, 1707 nos of villages are having the safe drinking water facility where as no villages are getting fluoride and arsenic contaminated water. There are 13756 nos of functional tube wells, 429 nos of sanitary wells and 295 nos of Pipe Water Supply (PWS) are available in the district to provide drinking water to 842 villages and a population of 157177.

122199 nos of HHs are having IHHL facility out of 313188 nos. of HHs. Further 30 nos. of villages having sanitary complex, 141 ODF villages and out of 2401 schools in the districts 2387 have the toilets.

### **2.7.10 Migration**

During the year 2016-17, 3 Nos. of valid license obtained by 3 nos. of those who have engaged / drafted 47 nos. of migrant workmen to the state of Karnataka & Kerala to work in M/s Ambit Controls Pvt. Limited, Doddagobbi, Bangalore, M/s Sobha Limited etp SEZ technopark campus, Thiruantapuram & Vardhashree Products, Karnataka. Further, it is mentioned that, maximum numbers of migrant workmen have gone to different states directly so-motto without help of any contractors/dalals to maintain their livelihood. Near past on raid in the Puri Railway Station there are 27 nos. of migrant workmen have been rescued by the District Labour Machinery and those were going to work to outside state have been handed over to their respective families. The Inspectors of District Labour Office are always vigilant about for obstruction of migration of poor workers to outside state from the district and propaganda also was made in different rural blocks area to prevent the migration of migrant workmen from different areas of Puri District to outside States.

### **2.7.11 Food security**

To ensure timely delivery of food grain, the district has 319 PDS retail outlay. Besides, the district has 7 major storage points with 146000 Qntl. storage capacities.

### **2.7.12 Social Security**

In Puri, 84457 persons have covered under various social security schemes. Among them, 59941 (38962 male and 20979 female) have covered under Old age Pensions, 17622 under Widows Pension and 3447 (2758 male and 689 female) under Disability Pensions.

## **2.8 Critical infrastructure**

Infrastructure includes a number of structures that improve living conditions and commerce, including schools, hospitals, roads, banking systems is essential in any emergency situation. These infrastructures work a support service in the life of people in an area.

### **2.8.1 Anganwadi centres**

2599 AWCs are operational in the district from which 615 AWCs are having their own building which constitutes 24% of the total AWCs. In these AWCs, 144597 pre-school children have enrolled. Besides, 20 children are found Severely Malnourished and referred. AWCs are also providing support to 23709 pregnant women and lactating mothers.

### **2.8.2 Schools and other Educational Institutions**

The district had 1307 Primary school. Number of upper primary schools 237, Primary with high school 35, Primary with upper primary 672, secondary school 12 and upper primary with secondary 335 schools respectively. Students enrolled at upper primary are 220970. Pupil Teacher Ratio is 18.53 during 2016-17. Besides, there are 61 Junior Colleges in the district.

### **2.8.3 Hospitals and Health Centres**

There was one district headquarter hospital, 16 CHC, 45 PHC, one Ayurvedic hospital and 2 Private Hospitals in the district during 2014-15.

### **2.8.4 Veterinary Hospitals**

Puri district had 15 hospital and dispensary, 147 Livestock Aid centre, 121 Dept. AI Institution.

### **2.8.5 Police and Fire Stations**

The district had 31 police stations and 13 fire and disaster response service centres in the district.

### **2.8.6 Cooperative Societies**

The district had 208 PACS with 224273 members. 25746.63 lakhs loan advanced to the farmers by PACS during the reporting period. Besides, 5065.5 Qntls. seeds and 13562.5 Qntls. fertilizers were distributed to members of PACS 445052.32 Qntl. Paddy has been purchased by various PACS during KMS 2015-16.

### **2.8.7 Banks and Post offices**

There were 128 nos., 51 nos., 12 nos., and 16 nos. of Public Sector Bank, Regional Rural bank and Scheduled Commercial Banks in the district. Besides, the district had 287 nos. of Post Offices including one District Post Officer at Puri.

### **2.8.8 Road and Railway network**

In Puri district 139.176 KMs of National Highways 33 Kms of State highways, 320.08 kms major district roads and other district roads, 859.86 kms of rural roads, 1442.63 GP/PS roads are connected in the district. Besides, 32 kms with 6 railway stations are providing convenient communication facilities in the district.

### **2.8.9 Cyclone and Flood Shelters**

The district has 179 cyclone and flood shelters. The district also uses schools and BNRGSK building as temporary cyclone/ flood shelters.

### **2.8.10 Rain gauge and Automatic Weather Stations**

The district has 11 Rain Recording stations to record the rainfall on regular basis in every Block H.Q. The Head Clerk of respective Blocks has been designated as Rain Recording Officer and is responsible to report the rainfall to District Control Room. The records are updated in Odisha Rainfall Monitoring, a web-based rainfall monitoring portal of Government of Odisha.

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## Chapter- 3

### Hazard, Vulnerability and Risk Assessment

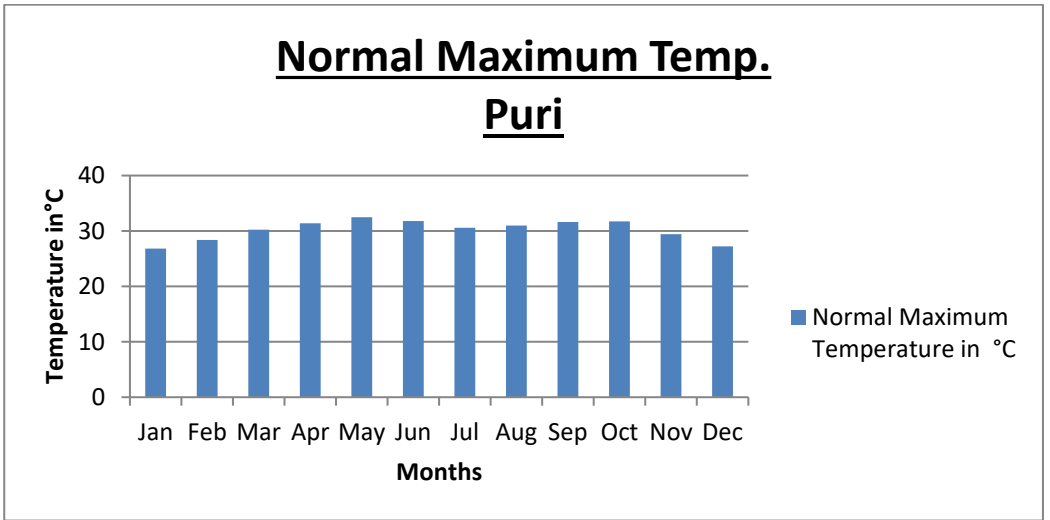
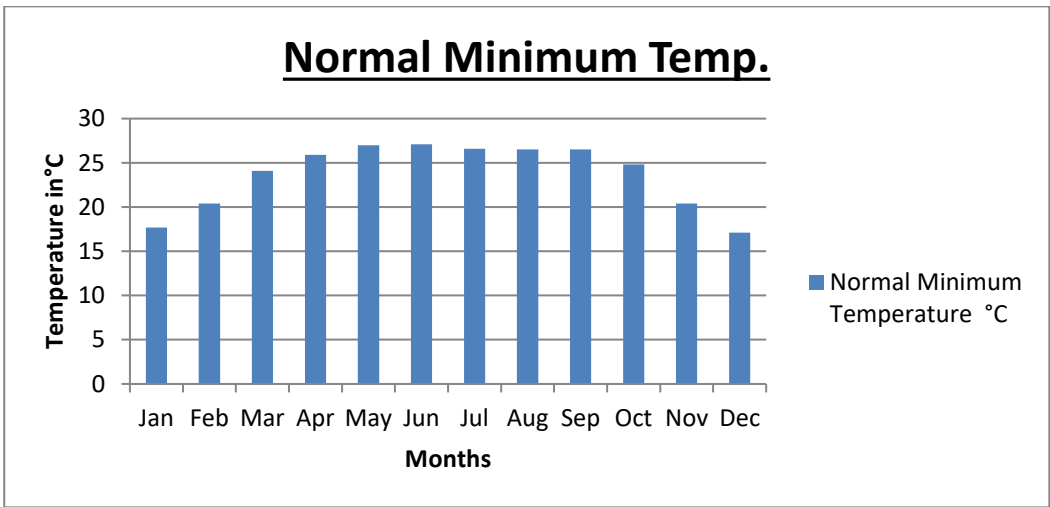
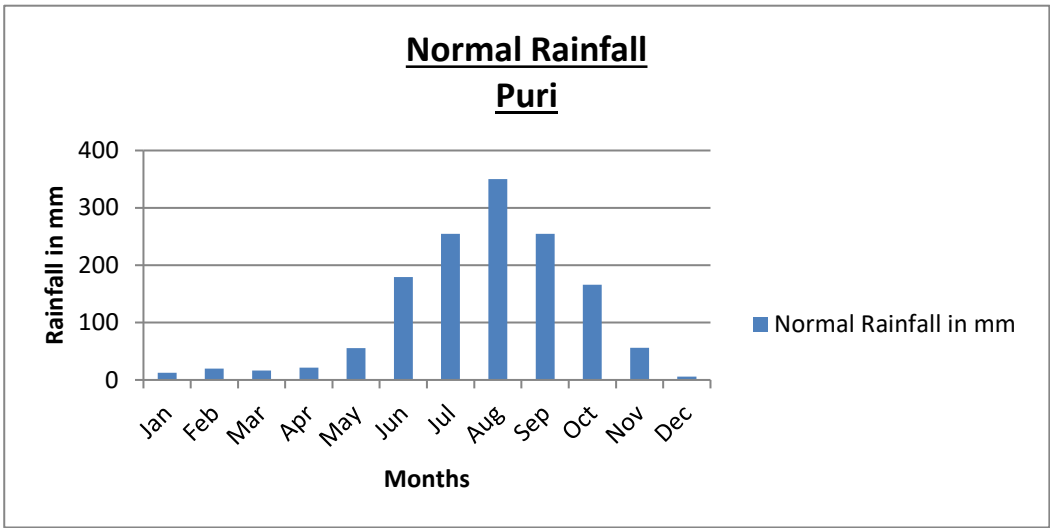
#### Climate and Hazard Profile

##### Climate

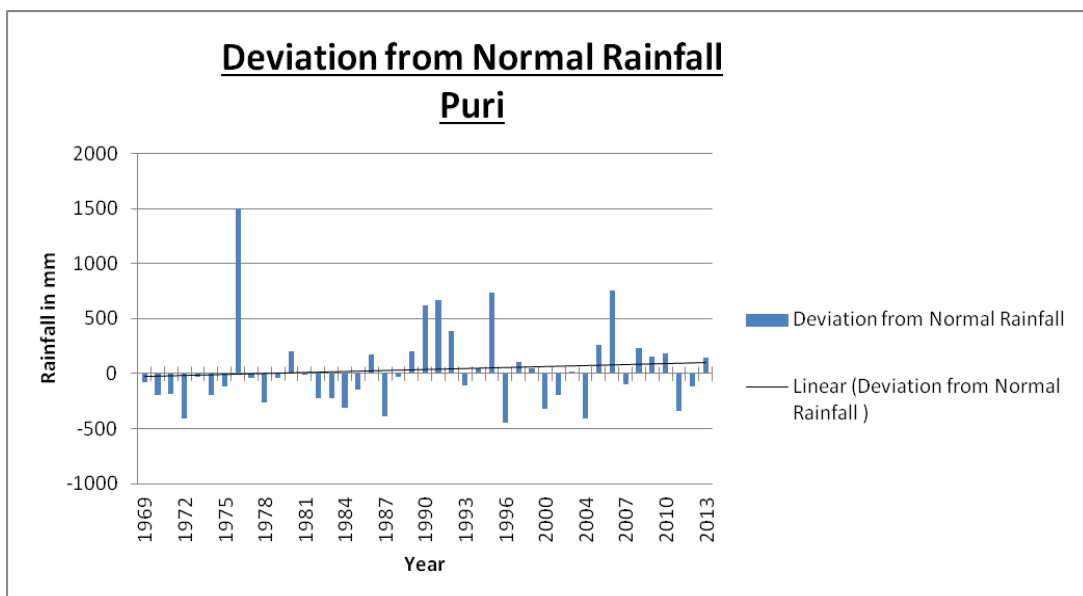
Puri has a tropical monsoon type of climate which may be further divided into two dissimilar natural divisions-the Littoral tract and the Level alluvial tract. It is standing on the coastal belt; the weather in Puri is greatly influenced by the sea. The length of the sea-coast of the district of Puri is nearly 150.4 km. The climate of the region is tropical resulting in very high temperature in the months of April and May. The average rainfall is 1392.5 mm with 62 days of rain and annual average maximum temperature is 30.22 °C and annual average minimum temperature is 23.68 °C. South west monsoon is active in the district during July-September. The month of July is the wettest and the major rivers usually get flooded. The district also experiences small rainfall from the retreating monsoon in the months of October and November. January and February are dry. The summers are from March to June, monsoons from June to September and winters are from October to February. Humidity is fairly high throughout the year. The temperature during summer touches a maximum of 37.2 °C and during winter minimum of 17 °C. Puri experiences cyclonic depressions and storms originating in the Bay of Bengal. Maximum temperature ever recorded for Puri is 39.1 °C on 05 May 1961 and minimum temperature is 17.0 °C in November 1972. While ever recorded maximum rainfall in 24 hrs for Puri is 318.8 mm on 28 July 1991.

##### Trend Analysis

- The average annual rainfall for Puri is increasing progressively with the years.
- Winter season shows a periodic trend of increasing and decreasing rainfall.
- No trend was observed for summer season.
- Average rainfall for the monsoon season lies around the 1000 mm line and also it does not show any remarkable trend for the last 44 yrs
- From the graph plots it is obvious that a heavy rainfall of 1500 mm or more have less frequencies and rainfall values below 1400 mm have high frequency.
- Like rainfall, temperature trend too is largely fluctuating with marginal increase over Puri. Temperature data analysis for period from 1969 to 2013 shows overall increasing trend for maximum temperature by 0.004 °C (per year). Rise in maximum temperature is most significant during monsoon season and post monsoon season. No significant trend is found in maximum temperatures in summer and winter seasons.
- Minimum temperature shows significant rising trend of 0.006 °C per year during post monsoon season and significant falling trend of 0.001 °C per year during the monsoon season. However minimum temperature shows insignificant increasing trend during winter and insignificant decreasing trend during summer season.



### Deviation from Normal Rainfall Puri



### Future Climate Scenario

The methodology based on multiple regressions and fuzzy clustering thus developed is used for modelling monthly rainfall in Puri for 2026-2050 for A2 scenario, with a basic assumption that this regression relationship will not change in the future. A negative value generated by the regression is set to zero. The result shows that there is a possibility of decrease in rainfall during the dry period (September–February). During the summer and monsoon (March–August) rainfall has an increasing trend, with an increase in the maximum/peak rainfall. The present analysis result shows trends in the predicted dry season and wet season rainfall. Under this scenario, drought conditions are indicated during the period 2026–50. The rainfall projection, based on A2 scenario, shows that there is a possibility of increase in hydrologic extremes in the area in future.

### Hazards

Potential hazards in the Puri district are: Flood, Cyclone, Water-Logging, Drought, Hail Storm, Earthquake, Tsunami, Fire accidents and Heat Wave.

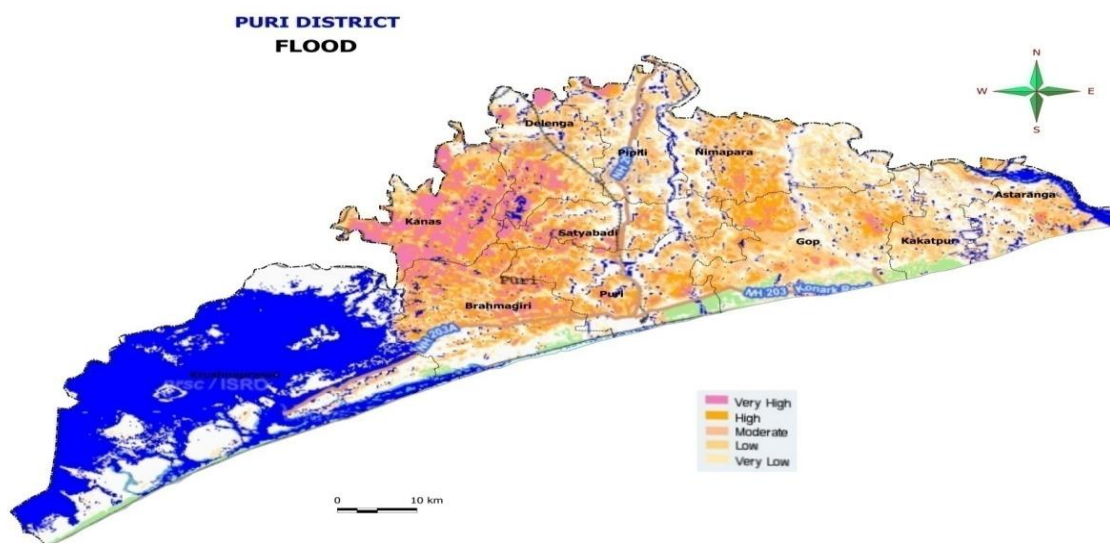
### *Flood prone areas of the district:*

NAME OF THE BLOCK/RIVERS	GRAM PANCHAYAT	NO. OF FLOOD PRONE VILLAGES	TOTAL NO. OF G.P.S
KRUSHNA PRASAD BLOCK/ CHILKA LAKE	BAJRAKOTA	3	20
	RAMA LENKA	3	
	MALUD	4	
	MANIKA	3	
	BADAANLA	3	
	ALANDA	3	
	PANASPADA	2	
	BUDHIBARA	2	
	SIALA	3	
	SIANDI	3	
	KRUSHNA PRASAD	3	
	BERHAMPUR	3	
	NUAPADA	3	
	ARAKHAKUDA	2	
	BADAJHADA	5	
	SATAPADA	2	
TITIPA	1		
GOMUNDIA	2		

	PIRIJIPUR	2	
	GAMBHARI	2	
BRAHAMAGIRI BLOCK/ BHARGABI/LUNA/ RATNACHEERA	KANDAGODA(Full)		8
	DIMIRISENA (Full)		
	TALAMALA (Full)		
	KAPILESWARPUR(P)		
	RAHADAMALA (P)		
	RAYBIDHAR (P)		
	MANAPADA (P)		
	KUSUBENTI (P)		
SATYABADI BLOCK	KETAKIPATNA		5
	BALARAMPURGADA		
	SUKALA		
	MADHUBANA		
	DASBIDYADHARPUR		
KAKATPUR BLOCK/ KADUA/DEVI/PRACHI	KADUA NUAGAON		13
	KURAJANGA		
	ABADAN		
	BANGURIGAM		
	JALESWARAPADA		
	NASIKESWARA		
	KAKATPUR		
	KANTAPADA		
	POTHAKA		
	KUNDHEI		
	PATASUNDRAPUR		
	LATAHARANA		
	KATAKANA		
ASTARANGA BLOCK/ DEVI/BHAUNRIA/KADUA PRACHI	ASTARANGA	5	14
	PATALADA	3	
	CHHURIANA	4	
	KORANA	5	
	SISUO	9	
	SARIPUR	2	
	KENDRAPATI	4	
	MANDUKI	2	
	NUAGAD	6	
	ALANGAPUR	4	
	ALSAHI	5	
	NAGAR	6	
	NAIGUAN	5	
	TALADA	5	
PIPLI BLOCK/ DAYA/BHARGABI	PAMASARA		11
	ORAKALA		
	BHARTIPUR		
	POPARANGA		
	KANTI		
	TUBASASAN		
	LAXMINARAYANPUR		
	JAGANNATHPUR		
	NUASASAN		
	RUPADEIPUR		
	SARASWATIPUR		
NIMAPARA BLOCK/ KUSHABHADRA/ PRACHI /DHANUA	ALANDA	6	23
	BAMANAL	13	
	DHANUA	8	
	DENUA	2	
	BHILIGRAM	2	

	MITEIPUR	2	
	TERUNDIA	3	
	RENCHSASAN	7	
	SAINSA SASAN	2	
	SAGADA	12	
	BADASIRUBILA	5	
	KOTHAKUSANGA	5	
	KALAPANCHANA	6	
	DHALESWAR	8	
	ANTUAR	4	
	NUASANTHA	4	
	TAMPALO	6	
	UCHHUPUR	1	
	CHANARPADA	4	
	SALANGA	7	
	ARISANDHA	2	
	BHODAR	1	
	CHANIJANGA	7	
	KERANDIPUR	5	
	BASUDEVPUR	3	
	BIRABALABHADRAPUR	3	
	HANTUKA	4	
	RAIGORADA	4	
	PRATAP PURUSHATAMPUR	5	
	BIRA NARASINGHAPUR	1	
	BIRA PRATAPPUR	3	
	CHANDANAPUR	1	
	MALITIPATPUR	2	
	TALAJUNG	1	
	CHALISIBATIA	5	
	BALIPADA	6	
	BALIPUT	8	
	JAMASUAN	3	
	GADAMURGASIRA	6	
	BIRA HARAKRUSHNAPUR	5	
	GOPINATHPUR	5	
	KHENIBIDYADHARPUR	5	
	BIJAYA RAMCHANDRAPUR	2	
	PRATAPRAMCHANDRAPUR	6	
	RAHANGORADA	12	
	NUAKHOLAMORA	7	
	ANDARAICHHAPUR	3	
	GANESWARPUR	10	
	NAGPUR	4	
	BEDAPUR	1	
	BANTALIGRAM	1	
	KUNDAPADA	3	
	DHUALA	1	
	DESHALI	1	
	JANGALBORI	1	
	SORABHA	1	
	PANDIAKERA		
	DOKONDA		
	GARHBADAPUT		
	GARHSANPUT		
PURI SADAR BLOCK/ RATNACHIRA/ BHARGABI / DHANUA/LUNA			21
GOP BLOCK/ KUSABHADRA /DHANUA / MUGEI			12
KANAS BLOCK/ MALA GUNI /RAJUA /DAYA LUNA /MAKARA			

	BIJIPUR		21
	ALIBADA		
	DIBYASINGHPUR		
	KANAS		
	DEIPUR		
	SEREI		
	TRILOCHANPUR		
	GARHSAHI		
	SAHUPADA		
	CHUPRINGI		
	GOPINATHPUR		
	KADUA		
	BAKU		
	KHANDAHOTA		
	JAMALGODA		
	BADAS		
	GADABALABHADRAPUR		
DELANG/ DAYA / LUNA	ABHYAMUKHI		16
	ARISOL		
	CHAINPUR		
	DELANGAKOTHABADA		
	DHANKERA		
	GODIPUT MATIAPADA		
	HARIRAJPUR		
	JENAPUR		
	KALYANPUR		
	MUNINDA		
	GODAMOTARI		
	SUJANPUR		
	SINGHABERHAMPUR		
	SRIPURUSHOTTAMPUR		
	RENGAL		
SAURIA			
<b>TOTAL</b>			<b>164</b>



## Major Events:

### Phailin 2013

District has observed few major episodes of natural as well as manmade disasters such as forest- fire and accidents. Phailin of year 2013 was one the major disasters in Puri in recent years. Following table gives a glimpse of the losses in the Phailin cyclone of 2013.

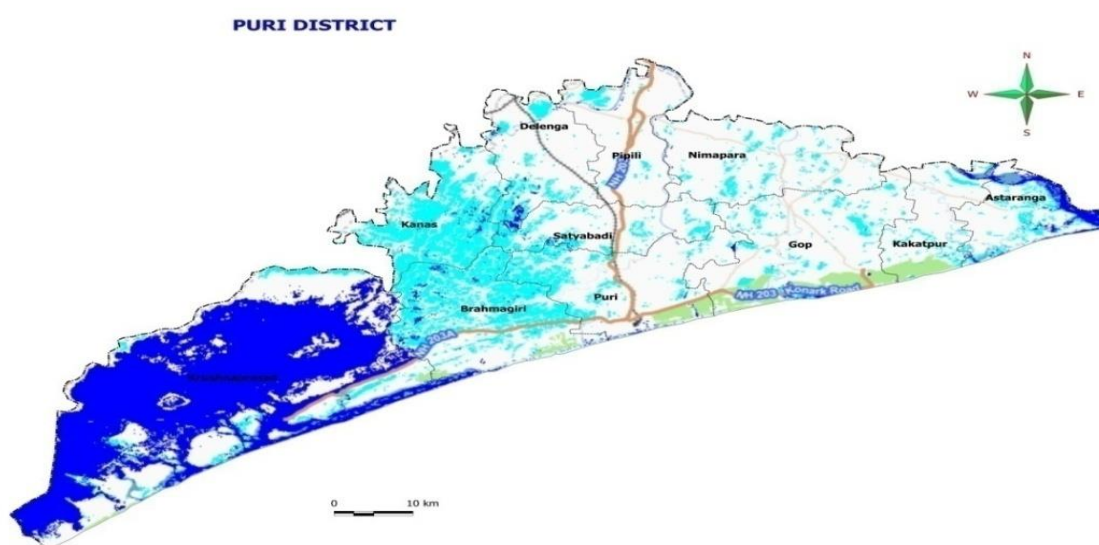
Phailin 2013 Loss and Damage Data		
S. No.	Particulars	Extent/Details
1	No of Village Affected	1769
2	Population affected (In Lakhs)	17,50,975
3	Total cropped area totally Affected	137971 Hectare
4	Estimated cost of Crop Loss	41.00 Crore
5	Cropped area affected more than 50%	91820 hectare
6	Small and Marginal Land Holding Affected	63.3 percent
7	Fully Damaged Katcha House	4736
8	Severely Damaged Pakka House	570
9	Severely Damaged Katcha House	10642
10	Estimated Cost of House Damaged	25.95 Crore
11	Human deaths	4
12	No of big animals lost	339
13	No of small animals lost	156
14	Length of village roads damaged	385 km
15	Length of state roads damaged	11 km
16	No of school building damaged	650
17	Estimated cost of loss of public properties	56 Crore
18	Total Estimate cost of loss (houses, crops and public properties)	121 Crore

### Extremely Severe Cyclonic Storm “FANI”- 2019

Extremely Severe Cyclonic Storm “FANI” – 2019 is the most divastateing disaster in Puri in recent years. Following table gives a glimpse of the losses in the ESCS – “FANI”- 2019.

FANI 2019 Loss and Damage Data		
S. No.	Particulars	Extent/Details
1	No of Village Affected	1772
2	Population affected (In Lakhs)	19,68,28
3	Total cropped area totally Affected	33928 Hectare
4	Estimated cost of Crop Loss	50.03 Crore
5	Cropped area affected more than 50%	11615Hectare
6	Small and Marginal Land Holding Affected	91.38 percent
7	Fully Damaged Pucca House	74
8	Fully Damaged Kutcha House	8985
9	Severely Damaged Pucca House	6127
10	Severely Damaged Kutcha House	98588
11	Partly damaged houses (pucca)	113281
12	Partly damaged houses (kutcha)	49529
13	No. of huts damaged	2178

14	No. of cow shed damaged	44378
15	Estimated Cost of House Damaged	1166.95 Crore
16	Human deaths	33
17	No of big animals lost	1899
18	No of small animals lost	1896
19	No. of poultry (birds) lost	2668224
20	Length of village roads damaged	1940 km
21	Length of state roads damaged	54 km
22	No of school building damaged	1981
23	Estimated cost of loss of public properties	1940.72 Crore
24	Total Estimate cost of loss (houses, crops and public properties)	3157.71 Crore



### Details of Hazards of the District:

Disaster Specific proneness to Various Types of Disasters:

Type of Hazards	Time of occurrence	Potential Impact	Vulnerable areas
Cyclone	May, September, October, & November	Loss of life, livestock, crop and infrastructure	All the Blocks
Drought	April to June	Crop Loss, Water scarcity	All the Blocks
Epidemics	June to December	Loss to human life	All the Blocks
Flood	June to November	Loss of life, crop, infrastructure and animals	All the Blocks
Fire Accidents	Summer & winter	Human Loss and house damage	All the Blocks
Sunstroke	April to June	Loss of life of human being and livestock	All the Blocks
Tsunami	Any time	Loss of life of human being and livestock	86 Villages of 33 GPs in 6 Blocks
Earthquake	Any time	Loss of life of human being and livestock	All the Blocks

## DISASTER PROBABILITY/SEASONALITY

Type of hazard	Month of occurrence											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Flood						←	→	→				
Cyclone				←	→				←	→		
Drought						←	→	→				
Sunstroke			←	→	→							
Village Fire			←	→	→							
Earthquake	●											●
Industrial Disaster	●											●

### Ranking and Probability of Disaster Episodes in the District

Based on the disasters experienced by the district in the last 15 years, the probability of flood ranks first. Accordingly, the occurrence of other disasters such as cyclone, fire accident, drought, epidemic and earthquake.

### FLOOD AND EPIDEMICS

The Hirakud reservoir discharges water into the Naraj that redistributes water into three major rivers of Puri that carry nearly 9 lakh cusec water in its course, as a result of which the district is prone to flood in the monsoon. Flood in its quake brings allied diseases, thus causing epidemics in all the blocks. Crop loss also occurs as a result of flood.

### CYCLONE

As the district lies on the coastal belt of Bay of Bengal, the district tends to have threat to cyclone and tidal disasters. Cyclones ordinarily bring in their trail heavy rains causing severe floods and saline inundation.

### FIRE ACCIDENTS

House damages due to fire accidents present a serious problem in Puri district. This is mostly due to the peculiar housing pattern adopted in the villages. These houses have generally mud-built walls with thatched roofs made out of timber, bamboo and straw. They spring up in clusters. In summer and winter fire accident becomes frequent as it destroys houses and properties and causes serious distress to the affected people

### DROUGHT

Sometimes want of rain at the proper time either defers commencement of agricultural operations or affects growth of crops. Occurrence of drought is not as frequent in Puri district as it lies on the coastal belt and further more the rivers are always full of water.

### HAIL STORM

Hail Storms are common phenomena during summer season in this district.

### EARTHQUAKE

Earth quake also occurs in some areas of this district.

### Hazard Specific Vulnerabilities of Puri District

No	Hazard	Vulnerabilities			Impact of Climate Change on Vulnerabilities
		Life	Property	Environment	
1	Cyclone	<ul style="list-style-type: none"> <li>Entire population (16,98,730) is vulnerable to cyclones</li> <li>Particularly women (8,33,350, 49%) and children 0-6 years (1,72,888, 10% of the total population)<sup>1</sup></li> <li>Elderly and persons with disability</li> <li>Population in coastal villages (stretching across 150.4 km coastline in Puri) are highly vulnerable</li> <li>Households living Below poverty Line with limited economic capacity (163,639 as per 1997 Census)</li> <li>Households residing in kucha and semi pukka houses (approx 75% of the total houses)</li> <li>Less number of Multipurpose shelters compared to total population vulnerable to floods (165 Nos)</li> <li>Lack of awareness and unwillingness to evacuate in emergency</li> <li>Lack of complete awareness and sensitization on understanding and adhering to warnings among communities</li> </ul>	<ul style="list-style-type: none"> <li>Road (113 Nos. of roads with total length of 533.720 KM under PWD)&amp; Tele. Communication network</li> <li>Private &amp; Public Infrastructures</li> <li>Dwelling units (kutchra and semi-pucca which are approximately 75% of total housing types)</li> <li>Crop – Agriculture/ Horticulture. There are 1,47,402 cultivators and 79,505 agricultural laborers who are vulnerable<sup>2</sup></li> <li>Irrigation Sources: <ul style="list-style-type: none"> <li>Canals (70.8%)</li> <li>Bore wells/Dug Wells (10.1%)</li> <li>Lift irrigation schemes (297 Nos)</li> <li>Other Sources (11.2%)<sup>3</sup></li> </ul> </li> <li>Livestock and animal resources.</li> <li>Drinking Water Sources i.e. hand pumps, Tube wells, Wells, PHD Stand Posts.</li> <li>Livestock &amp; animal resources</li> <li>Other vulnerable assets i.e. Flood embankments, Canal embankments,</li> </ul>	<ul style="list-style-type: none"> <li>Forests (14000 Ha<sup>4</sup>)</li> <li>Local Ecosystem</li> <li>Roadside plantations</li> <li>Air</li> <li>Water</li> <li>Saline inundation</li> <li>Soil</li> </ul>	The increasing frequency of Cyclones under the influence of climate change as witnessed over the past few years and projections for increasing extreme cyclones with higher wind speed with increased frequency in future poses higher threat.

<sup>1</sup>Data Derived from Census Handbook of puri district (2011) available at [http://www.censusindia.gov.in/2011census/dchb/2118\\_PART\\_B\\_DCHB\\_PURI.pdf](http://www.censusindia.gov.in/2011census/dchb/2118_PART_B_DCHB_PURI.pdf)

<sup>2</sup> Ibid

<sup>3</sup> Data taken from agricultural contingency plan of Puri available at <http://agricoop.nic.in/Agriculture%20Contingency%20Plan/Orissa/Orissa%206-%20Puri%2031.05.2011.pdf>

<sup>4</sup> ibid

		<ul style="list-style-type: none"> <li>In adequate health infrastructure in interior areas.</li> <li>Non-availability of youth (migrated) at the time of emergency for community based response</li> </ul>	<ul style="list-style-type: none"> <li>Saline Embankments etc.</li> <li>MSMEs since Puri is a tourist destination</li> </ul>		
2	Floods	<ul style="list-style-type: none"> <li>All Eleven Blocks are vulnerable to flood</li> <li>Children, women, elderly and persons with disability are amongst most vulnerable to any disaster including and the population of children and women is high in the district.</li> <li>Highly vulnerable are those residing near to the main rivers and near river/canal embankments and low lying villages near Chilika Lake (<b>54 villages</b>),</li> <li>Less number of Multipurpose shelters compared to total population vulnerable to floods (165Nos)</li> <li>Population living BPL are exposed to severe impacts during and post flood.</li> <li>Post flood epidemics and diseases poses severe threat</li> <li>Lack of awareness on emergency medicine, WASH etc.</li> <li>Lack of sufficient health infrastructure in rural areas</li> </ul>	<ul style="list-style-type: none"> <li>Water logged areas in different blocks (<b>15192 Ha in the district</b>) especially in <b>Brahmagiri, Astaranga, Gop, Kakatpur, Kanas and Krushnaprasad Blocks</b></li> <li>Agricultural crop in flood prone and water logged areas</li> <li>Vulnerable dwelling units (kutchra and semi pucca houses)</li> <li>Hand pumps, wells and other drinking water sources.</li> <li>Tube wells, wells, lift irrigation, canal embankments and other irrigation infrastructures</li> <li>Roads and bridges especially in flood prone areas, near river embankments,</li> <li>Health and Education infrastructure in highly flood prone areas</li> <li>Livestock and animal resources in flood prone areas</li> </ul>	<ul style="list-style-type: none"> <li>Water logging</li> <li>Water borne diseases due to contamination</li> <li>Sedimentation</li> <li>Contamination of water bodies and pond systems</li> <li>Contamination of drinking water sources</li> </ul>	<ul style="list-style-type: none"> <li>Erratic nature of rainfall, delay in monsoon and unseasonal rain are likely to result in unseasonal floods and thereby resulting in increased loss and damage.</li> <li>Increased low pressure formation and resulted rainfall to affect crop production</li> </ul>
3	Fire	<ul style="list-style-type: none"> <li>Households residing in thatched and mud houses</li> <li>Increased dry period with limited rainfall</li> </ul>	<ul style="list-style-type: none"> <li>Residential buildings (particularly kucha and semi pucca)</li> <li>Public Infrastructure (Schools with kitchen)</li> <li>Micro and small business infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>Air pollution</li> <li>Increased heat in summers and wind acting as</li> </ul>	With increase in global temperature and increased duration of dry season, vulnerability to

		<ul style="list-style-type: none"> <li>• Use of open fire-wood and open fire kitchen in rural areas</li> <li>• Interior areas not under the reach of fire tender</li> <li>• Fire tenders not enough to cover total population</li> <li>• Lack of complete awareness and sensitization on fire prevention</li> <li>• Gradual erosion of traditional coping measures</li> </ul>	<p>(especially road-side dhabas, restaurants etc)</p> <ul style="list-style-type: none"> <li>• Crowded haats and markets</li> <li>• Other commercial establishments</li> <li>• Hospitals</li> <li>• Cultural heritage (<i>Jgannath Temple which has a huge kitchen in place</i>)</li> <li>• Government offices and infrastructure (electrical fire) particularly old buildings</li> </ul>	fuel to fire accidents	fire accidents can be high
4	Drought	<ul style="list-style-type: none"> <li>• Drinking water crisis in already hard hit areas</li> <li>• Vulnerability to famine and diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture (<i>as 44.31% of cultivated land is non-irrigated/ rain-fed</i>)</li> <li>• Horticulture</li> <li>• Limited access and availability of tapped water supply</li> <li>• In-adequate health infrastructure</li> <li>• Livestock diseases and deaths and possible famine</li> </ul>	<ul style="list-style-type: none"> <li>• Drying of trees and shrubs</li> <li>• Impact upon green fields</li> <li>• Contamination of air and air borne diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Projections confirm further increase in magnitude and frequency of droughts with uncertainties associated with rainfall</li> <li>• Agriculture health, water and sanitation will be highly affected with increased drought spell</li> <li>• Increased pressure upon water sources and demand for external water supply from outside sources</li> </ul>
5	Heat-waves	<ul style="list-style-type: none"> <li>• Cultivators and agricultural labors in open field</li> </ul>	<ul style="list-style-type: none"> <li>• Standing crop vulnerable to heat stress</li> </ul>	<ul style="list-style-type: none"> <li>• Aquatic ecosystems vulnerable</li> </ul>	With increasing global temperature

		<ul style="list-style-type: none"> <li>Workers, small businesses, street vendors and others having no shade for work</li> <li>Particularly micro businessmen on the sea coast and traffic policemen</li> <li>School children and elderly</li> <li>Patients with heart, lung diseases, blood pressure etc</li> </ul>	<ul style="list-style-type: none"> <li>Livestock diseases and deaths</li> <li>In-adequate health infrastructure to deal with heat waves in distant rural areas</li> <li>Schools without green infrastructure and proper ventilation facilities</li> <li>Drinking water facilities and sources</li> </ul>	<ul style="list-style-type: none"> <li>to heat stress</li> <li>Flora and fauna</li> </ul>	<ul style="list-style-type: none"> <li>and projections for increase even by “business as usual” model will leave sufficient stress upon human and animal mortality increasing vulnerability of elderly and diseased. Flor and fauna will also be severely affected through increased magnitude and duration.</li> </ul>
6	Tsunam i	<ul style="list-style-type: none"> <li>Puri city and coastal blocks are highly vulnerable</li> <li>Fishermen, micro businesses etc at sea coast are more vulnerable to life risk</li> <li>Children, women, elderly and persons with disabilities</li> </ul>	<ul style="list-style-type: none"> <li>Boats and assets of fisherman</li> <li>Water transport system</li> <li>Coastal dwellings</li> <li>Roads and communication network in coastal belt</li> <li>Drinking water and sanitation facilities in coastal belt</li> <li>Schools, colleges, hospitals and other private and public infrastructures in coastal belt</li> <li>Cultural heritage and monuments in coastal belt including the Lord Jagannath Temple,</li> </ul>	<ul style="list-style-type: none"> <li>Coastal ecosystem</li> <li>Freshwater sources</li> <li>Saline intrusion</li> </ul>	Tsunami has no direct linkage with climate change.
7	Epidem ic	<ul style="list-style-type: none"> <li>Vector borne diseases like malaria, dengue etc.</li> <li>Population highly vulnerable are in 5 GPs in <b>Astaranga</b> block, 6 GPs in <b>Brahmagiri</b> block, 5 GPs in <b>Delangab</b>block, 7 GPs in <b>Gop</b>block, 3 GPs in <b>Kakatpur</b> block, 8 GPs in <b>Kanas</b> block, 5 GPs in <b>Krushnaprasad</b> block, 6</li> </ul>	<ul style="list-style-type: none"> <li>Increased pressure and limited capacity of health service delivery system</li> <li>Lack of enough capacity at grass-root level to deal with epidemics</li> <li>Limited facilities at Sub-centres</li> <li>Lack of enough trained and potential</li> </ul>	<ul style="list-style-type: none"> <li>Contamina tion of air and water and other components of local ecosystem</li> </ul>	Disease transmission window for malaria has been projected to increase. Emergence of new types of diseases with climatic changes increases

		<p>GPs in <b>Nimapara</b> block, 6 GPs in <b>Pipli</b> block, 9 GPs in <b>Puri</b> block and 8 GPs in <b>Satyabadi</b> block</p> <ul style="list-style-type: none"> <li>• Children (under-nourished and mal-nourished), pregnant and lactating mothers and elderly are more vulnerable</li> <li>• Population in slums</li> <li>• Population in water logged areas</li> </ul>	manpower to manage health emergencies		vulnerability to severe health impacts.
8	Earthquake	<ul style="list-style-type: none"> <li>• Highly vulnerable are urban Population residing in multistoried buildings (<i>9th urbanised district in state having 15.60 percent of its population live in urban areas<sup>5</sup></i>)</li> <li>• Particularly urban women (1,27,763) and children (24,905)</li> <li>• Slum dwellers</li> <li>• Crowded areas of Puri, town with high rise buildings</li> <li>• Risk of Tsunami</li> <li>• Population in distant areas</li> <li>• Risk of stampede in crowded places especially around Puri Temple</li> <li>• Risk of fire and chemical accidents</li> </ul>	<ul style="list-style-type: none"> <li>• Residential multistoried buildings</li> <li>• Jagannath Temple and other cultural monuments in the district</li> <li>• Hospitals and Schools (multi-storied)</li> <li>• Industrial infrastructure</li> <li>• Embankments (River and saline)</li> <li>• Drinking water supply (PWS)</li> <li>• Energy infrastructure (Lamps, posts, pillars, grids etc)</li> <li>• Roads and bridges</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Contamination of air</li> <li>• Water</li> <li>• Saline intrusion</li> <li>• Changes in river flow</li> <li>• Flora and fauna</li> </ul>	No direct linkage of earthquake exists with climate change. However, in the event of major earthquake loss of local ecosystem can further contribute to climatic changes
9	Stampede	<ul style="list-style-type: none"> <li>• Huge gathering during cart festival every year</li> <li>• Risk of rumors</li> <li>• Both internal and external populations (tourist)</li> <li>• Strong Religious sentiments</li> </ul>	<ul style="list-style-type: none"> <li>• Road side shops and structures</li> </ul>	Nil	Nil

<sup>5</sup> Data taken from Census Handbook of Puri District available at [http://www.censusindia.gov.in/2011census/dchb/2118\\_PART\\_B\\_DCHB\\_PURI.pdf](http://www.censusindia.gov.in/2011census/dchb/2118_PART_B_DCHB_PURI.pdf)

## HAZARD-SPECIFIC ANALYSIS

### Block wise Hazard Vulnerability

Hazard→	Floods			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
Puri Sadar				
Satyabadi				

Hazard→	Tsunami			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Cyclone			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Earthquake			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Heat Waves			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				

Hazard→	Drought			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				

Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Epidemics			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Industrial Disasters			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Conflicts/Riots			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Road Accident			
	Vulnerability			
Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

Hazard→	Cold wave			
	Vulnerability			

Hazard→	Lightning			
	Vulnerability			

Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				

Blocks	Very High	High	Medium	Low
Astarang				
Brahmagiri				
Delanga				
Gop				
Kakatpur				
Kanas				
Krushnaprasad				
Nimapara				
Pipli				
PuriSadar				
Satyabadi				

### A. Major Disasters/ Incidents during 2011-2025

A brief profile of major disasters/ incidents occurred in the district during last 15 years:

Table No. : 1

Sl. No.	Disaster/ Incident	No. of incidents during (2011-2023)	No. of Deaths	Affected Population	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							School/ AWC Buildings	Hospitals	Road in Km.	Other Critical Infrastructure	
<b>Disasters as approved under SDRF/ NDRF Guidelines.</b>											
1	Flood	2014	1			4138					
2	Drought	2015	0	-	0	0	0	0	0	0	2465
3	Fire	2013	1								
		2023	3								
4	Hail Storm										
5	Cyclone	2013	4	1750975	495	15948	650		390		137971
		2014	1	3255							
		2019	42								

		2020	0								
		2021	0								
		2022	0								
6	Pest Attack	2017									8.78
<b>State Specific Disasters as per Notification No.1936 Dt. 01.06.2015</b>											
7	Lightning	2011	5								
		2012	4								
		2013	11								
		2014	4								
		2015	8								
		2016	2								
		2017	17								
		2018	6								
		2019	2								
		2020	8								
		2021	7								
		2022	2								
		2023	9								
		2024	4								
2025	3										
8	Heat wave	2014	1								
9	Heavy Rain	2017									43222.22
10	Boat Accidents (Other than during Flood)	2014	1								
11	Drowning (Other than during Flood)	2015	2								
		2016	2								
		2017	22								

		2018	41								
		2019	23								
		2020	33								
		2021	49								
		2022	35								
		2023	45								
		2024	63								
		2025	13								
12	Snakebite Other than during Flood)	2015	15								
		2016	7								
		2017	25								
		2018	28								
		2019	15								
		2020	41								
		2021	35								
		2022	38								
		2023	34								
		2024	37								
		2025	4								
<b>Other Disasters</b>											

**Vulnerability and Risk Assessment related to disasters:**

Vulnerability Factors	Vulnerable Areas
Geographical Vulnerability	All the GPs are approachable during (flood) rainy season
Flood Prone	From total 1772 villages of 268 GPs, out of which 760 villages in 166 GPs.
Cyclone Prone	All 1772 villages, 268 GPs and 11 Blocks of the district
Fire Prone	All 1772 villages, 268 GPs and 11 Blocks of the district
Epidemic Prone	5 GPs in <b>Astaranga</b> block, 6 GPs in <b>Brahmagiri</b> block, 5 GPs in <b>Delanga</b> block, 7 GPs in <b>Gop</b> block, 3 GPs in <b>Kakatpur</b> block, 8 GPs in <b>Kanas</b> block, 5 GPs in <b>Krushnaprasad</b> block, 6 GPs in <b>Nimapara</b> block, 6 GPs in <b>Pipli</b> block, 9 GPs in <b>Puri</b> block and 8 GPs in <b>Satyabadi</b> block
Water Logged Area	Entire block of <b>Brahmagiri</b> , Nuagarh, Nagar, Balipantal, Dakhinpantal GPs of <b>Astaranga</b> block, Nuapada, Tichhini, and Krushnaprasad GPs of <b>K.P.</b> , Ganeswarpur, Andhra Ichhapur, Gadabhingura, Itibhuan, Chhaitana, Rahangagorada, Nuakholamara G.Ps of <b>Gop</b> block, Patasundarpur, Suhagpur, Kantapada, Lataharana, Kakatpur, Kundhei, Nasikeswar, Bangurugan, Jaleswarpur, Kadua Nuagaon, Parts of Othaka, Abadan, and Kurujanga G.Ps of <b>Kakatpur</b> block, Almost all the G.Ps of <b>Kanas</b> block especially Dokanda, Gadabalabhadrapur, Gadabadaput, Chupuringi, Pandiakera, Badas, Gopinathpur, Kadua.
Accident Prone	Road side villages
Economical Vulnerability	BPL family, small and marginal farmers and fishing Community
Infrastructure Vulnerability	75% mud wall houses, community structure, 80% saline embankment breaches, forests,
Social Vulnerability	SC/ST family, aged men and women, disabled persons, pregnant and lactating mothers, children, sick persons and fishing community

### 3.1 Cyclone:

As the district lies on the coastal belt of Bay of Bengal, the district tends to have threat to cyclone and tidal disasters. Cyclones ordinarily bring in their trail heavy rains causing severe floods and saline inundation.

Table No. 03: Cyclone vulnerable areas of the district.

Sl. No.	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible Villages / Wards	Vulnerable Population in Nos.	Milch and Draught animals	Houses	Vulnerable Infrastructure			
							School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructure
1	Puri Sadar	26	156	396252	31823	-	348	5	-	-

2	Satyabadi	22	96	196136	24633	-	176	5	-	-
3	Delang	18	134	109291	21391	-	190	6	-	-
4	Krushnaprasad	20	129	57505	19785	-	184	6	-	-
5	Nimapara	28	240	208139	48024	-	350	6	-	-
6	Kakatpur	14	114	100525	28600	-	185	5	-	-
7	Astarang	14	102	67748	24763	-	150	3	-	-
8	Brahmagiri	18	167	132319	24366	-	253	4	-	-
9	Gop	29	223	199195	34466	-	300	9	-	-
10	Kanas	22	139	71870	28312	-	230	6	-	-
11	Pipili	19	204	159750	34021	-	232	6	-	-
	<b>Total</b>	<b>230</b>	<b>1704</b>	<b>1698730</b>	<b>320184</b>	-	<b>2598</b>	<b>61</b>	-	-

[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:

Table No. 04

Sl. No	Name of the Block	No of Grid Stations	No of 33 /1 1K V Substation	No. of Distributing Transformers			Conductor / Electric lines- 11 KV (Length in Kms.)	No of Electrical Poles	Conductor / Electrical lines- LT (Length in Kms.)	No of Electrical Poles	No of High - Tension Towers	High Tension Lines above 11KV (Length in Kms.)
				11KV or less	11KV <and <60KV	60KV & above						
1	Puri Sadar	2	7	90	395	547	555.83	9450	654	16340	0	110.79
2	Brahmagiri	1	3	177	431	254	457.24	7773	194	4855	0	34.3
3	Satyabadi	0	1	156	268	155	406.24	6906	296	7389	0	8.2
4	Delang	0	1	73	172	127	224.56	3818	219	5471	0	13
5	Kanas	0	1	19	211	141	214.226	3641	124.36	3109	0	14
6	Pipili	0	1	163	369	613	139.9	2378	140.39	3510	0	32.1
7	Astarang	0	1	91	192	143	302.25	5138	244.9	6122	0	10
8	Kakatapur	0	1	185	305	192	430.2	7313	447.22	5235	0	27
9	Nimapara	1	1	112	390	126	450.71	7662	526.31	6512	0	6
10	Gop	1	3	185	315	241	437.6	7439	464.05	5420	0	45.2

	<b>Total</b>	<b>5</b>	<b>20</b>	<b>1251</b>	<b>3048</b>	<b>253 9</b>	<b>3618.8</b>	<b>61518</b>	<b>3309.46</b>	<b>63963</b>	<b>0</b>	<b>300. 59</b>
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Table No.05: Drinking water facility in the Cyclone prone areas:

Sl. No.	Name of the Block	Total No. of Functional Tube Wells	Total No. of Sanitary Wells	Pipe Water Supply				Other Drinking Water Sources If any
				Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	
1	2	3	4	5	6	7	8	9
1	Astaranga	751	86	9	-	-	-	
2	Brahmagiri	1254	5	30	-	-	-	
3	Delanga	1184	1	24	-	-	-	
4	Gop	1514	34	35	-	-	-	
5	Kakatpur	1208	54	16	-	-	-	
6	Kanas	916	60	20	-	-	-	
7	Krushnaprasad	819	28	24	-	-	-	
8	Nimapada	1870	3	31	-	-	-	
9	Pipili	1635	0	28	-	-	-	
10	Purisadar	1273	64	54	-	-	-	
11	Satyabadi	1332	94	24	-	-	-	
<b>TOTAL</b>		<b>13756</b>	<b>429</b>	<b>295</b>		-	-	

### 3.2 Tsunami:

As the district is located in the coast of Bay of Bengal, it is prone to Tsunami. Preparedness measures to handle emergency situations in the event of occurrence of tsunami, is a part of the District Disaster Management Plan. Tsunami mock exercised is conducted every year on 5<sup>th</sup> November on World Tsunami Awareness Day to aware the vulnerable people of the 88 Tsunami prone villages. Keutajanga village of Astaranga Block, Chhotipada village of Kakatpur Block, Khalakatapatana Village of Gop Block and Narasinghpatna Village of Brahmagiri Block have been certified as IOC-UNESCO Tsunami Ready Recognitions Programme (TRRP) village by fulfilling all 12 indicators i.e. preparing Tsunami Management Plan creating awareness among the people through capacity building programmes, wallpaintings, posters, banners, Tsunami Signages, workshops and mock exercises, etc. on 26<sup>th</sup> December, 2025 at Indian National Centre for Ocean Information Services (INCOIS), Hyderabad. The community members of all 4 villages receive the certificate at INCOIS, Hyderabad.

Vulnerability of Puri District				
Name of the District	Coastline with Bay of Bengal	No. of Block	No of G.P	No of Village
Ganjam	62	4	15	44

<b>Puri</b>	<b>138</b>	<b>6</b>	<b>33</b>	<b>88</b>
Jagatsinghpur	72	3	10	27
Kendrapada	79	2	13	64
Bhadrak	52	2	13	41
Balasore	87	5	29	63
<b>Total</b>	<b>490</b>	<b>22</b>	<b>113</b>	<b>327</b>

Table No. 06 : Tsunami vulnerable areas of the district:

Sl. No.	Name of the Block/ ULB	No. of susceptible Gram Panchayats	No. of susceptible Villages / Wards	Vulnerable Population in Nos.	Milch and Draught animals	Houses	Vulnerable Infrastructure			
							School Buildings/ Anganwadi	Hospitals	Roads (in Km)	Other critical Infrastructure
1	Astaranga	6	25	-	-	-	34	-	-	-
2	Kakatpur	3	7	-	-	-	13	-	-	-
3	Gop	4	8	-	-	-	36	-	-	-
4	Puri Sadar	2	5	-	-	-	5	-	-	-
5	Brahmagiri	4	6	-	-	-	8	-	-	-
6	Krushnprasad	14	37	-	-	-	54	-	-	-
	<b>Total</b>	<b>33</b>	<b>88</b>	-	-	-	<b>150</b>	-	-	-

### 3.3 Flood:

The Hirakud reservoir discharges water into the Naraj that redistributes water into three major rivers of Puri that carry nearly 9 lakh cusec waters in its course, as a result of which the district is prone to flood in the monsoon. Flood in its quake brings allied diseases, thus causing epidemics in all the blocks. Crop loss also occurs as a result of flood.

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

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

1	Krushnaprasad	20	114	89370	-	-	175	-	-	-
2	Brahmagiri	8	8	-	-	-	240	-	-	-
3	Satyabadi	11	38	46466	-	-	143	-	-	-
4	Kakatpur	3	8	12667	-	-	24	-	-	-
5	Astarang	14	65	-	-	-	80	-	-	-
6	Pipili	11	11	-	-	-	64	-	-	-
7	Nimapara	23	111	99325	-	-	142	-	-	-
8	Puri Sadar	30	145	150799	-	-	29	-	-	-
9	Gop	11	45	-	-	-	24	-	-	-
10	Kanas	22	132	142624	-	-	210	-	-	-
11	Delang	13	83	74188	-	-	22	-	-	-
	<b>Total</b>	<b>166</b>	<b>760</b>	<b>615439</b>	-	-	<b>1153</b>	-	-	-

[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:

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/ AW Buildings	Hospitals	Roads (in Km)	Other Critical Infra.
1	Devi Left	Kakatpur	-	2	-	-	-	-	-	-	-
2	Bhargabi Right	Satyabadi, Puri Sadar & Pipli	-	27	-	-	-	-	-	-	-
3	Bhargabi Left	Nimapara	-	3	-	-	-	-	-	-	-
4	Malaguni Left	Kanas	-	2	-	-	-	-	-	-	-
5	Malaguni Right	Kanas	-	7	-	-	-	-	-	-	-

6	Rajua Right	Kanas	-	2	-	-	-	-	-	-	-
7	Daya Right	Kanas & Pipli	-	13	-	-	-	-	-	-	-
8	Daya Left	Pipli & Delang	-	10	-	-	-	-	-	-	-
9	Siarcut Left	Puri Sadar	-	1	-	-	-	-	-	-	-
10	Gabkund Cut Left	Puri Sadar	-	2	-	-	-	-	-	-	-
11	Gabkund Cut Right	Puri Sadar	-	3	-	-	-	-	-	-	-
12	Makara Right	Kanas	-	3	-	-	-	-	-	-	-
13	Kushabhadra Left	Nimapara	-	9	-	-	-	-	-	-	-
14	Kushabhadra Right	Nimapara & Gop	-	6	-	-	-	-	-	-	-
15	Dhanua Left	Gop	-	1	-	-	-	-	-	-	-
	Total	-	-	92	-	-	-	-	-	-	-

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

**Table No. 09: Agriculture and Flood Vulnerability**

Sl. No.	Name of the Block	Cultivable Area (Hectares)		Area susceptible to Flood (Hectares)	
		Paddy	Non-Paddy	Paddy	Non-Paddy
1	Astaranga	10915	-	10915	-
2	Brahmagiri	17402	-	17402	-
3	Delang	18014	-	18014	-
4	Gop	25325	-	25325	-
5	Kakatpur	9406	-	9406	-
6	Kanas	17023	-	17023	-
7	Krushnaprasad	14708	-	14708	-
8	Nimapara	26205	-	26205	-
9	Pipili	19305	-	19305	-

10	Puri Sadar	16482	-	16482	-
11	Satyabadi	13398	-	13398	-
	<b>Total</b>	<b>188183</b>	<b>-</b>	<b>188183</b>	<b>-</b>

Table No. 10: Electrical Infrastructure in the Flood Prone Area

Sl. No	Name of the Block	No of Grid Stations	No of 33/1 KV Substation	No. of Distributing Transformers			Conductor / Electrical lines- 11 KV (Length in Kms.)	No of Electrical Poles	Conductor / Electrical lines- LT (Length in Kms.)	No of Electrical Poles	No of High Tension Towers	High Tension Lines above 11KV (Length in Kms.)
				11K V or Less	11K V and <60 KV	60K V & Above						
1	Puri Sadar	2	7	90	395	547	555.83	9450	654	16340	0	110.79
2	Brahmagiri	1	3	177	431	254	457.24	7773	194	4855	0	34.3
3	Satyabadi	0	1	156	268	155	406.24	6906	296	7389	0	8.2
4	Delang	0	1	73	172	127	224.56	3818	219	5471	0	13
5	Kanas	0	1	19	211	141	214.226	3641	124.36	3109	0	14
6	Pipili	0	1	163	369	613	139.9	2378	140.39	3510	0	32.1
7	Astarang	0	1	91	192	143	302.25	5138	244.9	6122	0	10
8	Kakatapur	0	1	185	305	192	430.2	7313	447.22	5235	0	27
9	Nimapara	1	1	112	390	126	450.71	7662	526.31	6512	0	6
10	Gop	1	3	185	315	241	437.6	7439	464.05	5420	0	45.2
	<b>Total</b>	<b>5</b>	<b>20</b>	<b>1251</b>	<b>3048</b>	<b>2539</b>	<b>3618.8</b>	<b>61518</b>	<b>3309.46</b>	<b>63963</b>	<b>0</b>	<b>300.59</b>

Table No.11: Drinking water and Flood Vulnerability:

Sl. No.	Name of the Block	Total No. of Functional Tube Wells	Total No. of Sanitary Wells	Pipe Water Supply				Other Drinking Water Sources If any
				Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	
1	2	3	4	5	6	7	8	9
1	Astaranga	751	86	9	-	-	-	
2	Brahmagiri	1254	5	30	-	-	-	
3	Delanga	1184	1	24	-	-	-	
4	Gop	1514	34	35	-	-	-	

5	Kakatpur	1208	54	16	-	-	-	
6	Kanas	916	60	20	-	-	-	
7	Krushnaprasad	819	28	24	-	-	-	
8	Nimapada	1870	3	31	-	-	-	
9	Pipili	1635	0	28	-	-	-	
10	Purisadar	1273	64	54	-	-	-	
11	Satyabadi	1332	94	24	-	-	-	
<b>TOTAL</b>		<b>13756</b>	<b>429</b>	<b>295</b>		-	-	

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

Table No. 12

Sl. No.	Name of the Event/ Festival/ Function	Place (Block & Gram Panchayat)	Duration of the event (in No. of days)	Month (as per English Calendar)	Strength of population gathering (Approx.)	Remarks (other vulnerabilities associated with the place/ event, if any to the mentioned)
1	New Year	Puri	1 day	January	200000	
2	Chilika Mahostav	Satapada Krushnaprasad Block & Satapada Panchayat	3 days	January	20000	
3	Republic day	Puri	1 day	January	10000	Parade ground
4	Magha Mela	Chandrabhaga / Konark Gop Block & Konark NAC	1 day	January/February	100000	

5	Jhamu Yatra	Kakatpur Kakatpur Block & GP	Each Tuesday in the month	March/April	50000	
6	Pana Sankranti	Krushnapra sad  Krushnapra sad Block & GP	5 days	April	50000	
7	Jagar Jatra	Lokanath Temple, Puri	1 day	February/Ma rch	100000	
8	Snanapurnima	Sri Jagannath Temple, Puri	1 day	May/June	200000	
9	Anabasara	Alarnath Temple, Brahmagiri  Brahmagiri Block & GP	15 days	May/June	10000	
10	Naba Jouvan Darshan	Sri Jagannath Temple, Puri	1 day	June/July	200000	
11	Car Festival	Puri	1 day	June/July	1000000	For one day and average 1 lakh for 8 days
12	Sandhya Darshan	Gundicha Temple, Puri	1 day	June/July	400000	
13	Bahuda Yatra	Puri	1 day	June/July	400000	
14	Sunabesha	Puri	1 day	June/July	1000000	
15	Adhara & Niladri Bije	Puri	2 days	June/July	100000	
16	Independence Day	Saradhabali, Puri	1 day	August	10000	
17	Bhasani Ustav	Puri	1 day	October	100000	
18	Anla Navami	Sakhigopal Satyabadi Block	1 day	October/Nov ember	30000	

19	Kali Puja	Biragobindpur, Satyabadi Block	1 day	October/November	100000	
20	Kartik Purnima	Puri	5 days	November	100000	For five days & average 50,000 per day in the entire month
21	Konark Mahostav	Konark Gop Block & Konark NAC	5 days	December	30000	
22	X-mas	Puri	1 day	December	100000	

### 3.5 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	Name of the Villages Connected	Daily to & from movement of people in Nos.(Approx)	Type of Boats operating in Nos.	
							Mechanised	Non-Mechanised
1	2	3	4	5		6	7	8
1	Delang	During Flood Operation	Luna & Daya River	Muninda G.P.	Muninda , Sana Muninda, Belapada	Nil	1	Nil
2	Delang	During Flood Operation	Luna & Daya River	Kalyanpur	Radhua,Kalyanpur, Balihunka, Sisuapada	Nil	1	Nil
3	Delang	During Flood Operation	Luna & Daya River	Ghanipur	Jorakani, Bitipur,Tigiria	Nil	1	Nil
4	Delang	During Flood Operation	Luna & Daya River	Dhankera	Dhankera,Nimakeera,Saradhapur	Nil	1	Nil
5	Delang	During Flood Operation	Luna & Daya River	Sujanpur	Patanapur,Ratanpur, Gunuputu	Nil	1	Nil
6	Delang	During Flood Operation	Luna & Daya River	Singhberhampur	Neepur.Maligaon, Tailasahi	Nil	1	Nil
7	Delang	During Flood Operation	Luna & Daya River	Chainpur	Chainpur, Ratapada,Pathardih,Danapada	Nil	1	Nil
8	Delang	During Flood Operation	Luna & Daya River	Gualipada	Huruhura	Nil	1	Nil

9	Kakatpur	Patharapa ka & Bhandisah i	Devi River	2 Villages of 1 G.P (Patasunda rpur G.P) daily		100	2	0
10	Kakatpur	College square ,Kakatpur	Prachi River	Kakatpur G.P,Othaka G.P,Kundhe i G.P (During flood time)		150	3	0
11	Kakatpur	Asijanga	Kadua River	Kadua Nuagaon G.P, Bangurigao n G.P(During flood time)		100	1	0
12	Kanas	Dokanda	Daya River	10		No	-	-
13	Krushnaprasad	krushnapr asad to Balunga	Chilika	14 G.p/50 Villages		225	3	0
14	Krushnaprasad	Nuapada to Balunga	Chilika	2 G.P /5 Villages		50	1	0
15	Krushnaprasad	Gurubai to Balunga	Chilika	2G.P /4villages		45	1	0
16	Krushnaprasad	Janhikuda to satapada	Chilika	21G.p/126 Villages		1200	3	0
17	Krushnaprasad	Berhampu r to satapada	Chilika	1 G.P/2 villages		215	2	0
18	Krushnaprasad	satapada to Balunga	Chilika	7 G.P/25 Village		45	1	0
19	Nimapara	Bamanal	Dhanua River	Bamanal G.P	Barimunda,Saderi a,Bada Ninigaon,Pipalia,B hutapada,Tihula,B otei,Pati,Paika Sahi,Bamanal	7000	Yes	
20	Nimapara	Toriha Bandha	Dhanua River	Sains Sasan	Toriha Bandha & Rabena Sahi	3000	Yes	
21	Nimapara	Gada Torihan	Dhanua River	Kotakusan ga	Baku,Kajipur & Maham	4000	Yes	
22	Nimapara		Dhanua River	Badasiribil a	Gada torihan Chhaka	4000	Yes	
23	Nimapara	Kajipatna	Dhanua River	Alanda	Juanlo,Badhei Sahi,Porokana&C hingudiakanta	6000	Yes	
24	Nimapara		Dhanua River	Sagada	Kerendiabindha,J ainabada,Ankaspu r,Ghoddasalia & Kanapur	10000	Yes	

25	Nimapara		Dhanua River	Dhanua	Sunugorodi, Dihahi, Barihapada, De khata & Bhuan	7000	Yes	
26	Puri Sadar	Luna River, KBD Pur GP	Luna River	KBD Pur	KBD Pur	4335		1
					Kulia Pada			
					Sujanpur			
					Siruli			
27	Puri Sadar	Ratnachira River, Goudakera GP	Ratnachira River	Goudakera	Jatipur	3473		1
					Pandaswar			
					Goudakera			
					Khandighar			
					Sateisi Batia			
					Atharapa			
28	Puri Sadar	Ratnachira River, Bhailipur GP	Ratnachira River	Bhailipur	Bedarpada	5189		2
					Olla			
					Bhailipur			
					Arihna			
					Antikera			
					Rua			
29	Puri Sadar	Luna River, PRC Pur GP	Luna River	Pratap Ramachan drapur	Inipina	3167		1
					Arol Patana			
					Ankia			
					Karadi			
30	Puri Sadar	Bhargavi River, PP PurGP	Bhargavi River	Pratap Purusottampur	Siuli Tota	4451		1
					Siuli			
					Kurushnajan Pur			
31	Puri Sadar	Luna River, BRC PurGP	Luna River	Bijaya Ramachan drapur	BRC Pur	2419		1
					Puruna Koranga			
32	Puri Sadar	Ratnachira River, Hantuka GP	Ratnachira River	Hantuka	Koupala	3539		1
					Baniakera			
					Kurunti			
					Hantuka			
33	Puri Sadar	Ratnachira River, Basudebpuur GP	Ratnachira River	Basudebpuur	Gokulpur	1140		1
34	Puri Sadar	Ratnachira River, Kerandipur GP	Ratnachira River	Kerandipur	Kerandipur	5176		2
					Balabhadrapur Utterhan			
					Naudikera			
					Kamasasan			
35	Puri Sadar	Dhanua River, Baliput GP	Dhanua River	Baliput	Laxmi Narayanpur	3383		1
					Palli			
					Amuri			
					Siaro			

					Hansaro			
36	Puri Sadar	Bhargavi River, Chalisibati a GP	Bhargavi River	Chalisibati a	Tadasa Ramahansapur	5899		2
					Paikerapur			
					Odasamalla			
					Bhikaripada			
					Chalisibatia			
					Kanchi Sasan			
					Balia			
Dasa Goba								
37	Puri Sadar	Bhargavi River, Balipada GP	Bhargavi River	Balipada	Banguruba Gadadharpur	5514		2
					Balipada			
					Dhola Biranchidaspur			
					Kaliakera			
					Jhinkiria			
					Gopinathpur			
38	Puri Sadar	Bhargavi River, Talajanga GP	Bhargavi River	Talajanga	Talajanga	3729		1
39	Puri Sadar	Bhargavi River, Gadamurgasira GP	Bhargavi River	Gadamurgasira	Gadamurgasira	4689		1
					Patajoshipur			
					Alapur			
					Sundar			
					Bagha			
					Alava			
40	Puri Sadar	Bhargavi River, Jamarsuan GP	Bhargavi River	Jamarsuan	Jamarsuan	2674		1
					Dailibati			
					Malikera			
41	Puri Sadar	Bhargavi River, BHK Pur GP	Bhargavi River	BHK Pur	Rahagiria	3710		1
					Rendua			
					Jagannath Ballava			
					Purusottam Ballava			
42	Puri Sadar	Bhargavi River, Baliguali GP	Bhargavi River	Baliguali	Balukhanda	5789		2
43	Puri Sadar	Bhargavi River, Beladal GP	Bhargavi River	Beladal	Ura	1136		1
					Alatunga			
44	Puri Sadar	Bhargavi River, Samagara GP	Bhargavi River	Samagara	Balukhanda	5070		2
45	Puri Sadar	Bhargavi River, Samanga GP	Bhargavi River	Samanga	Kashi Jagannathpur	759		1

46	Puri Sadar	Bhargavi River, Sasan Damodarpur GP	Bhargavi River	Sasan Damodarpur	Utter Kona	759		1
47	Puri Sadar	Nuanai, Beladal	Nuanai River	Beladal			4	
48	Satyabadi	Pahadachula	Bhargabi		1 GP 4 Village	2000	4	Nil
49	Satyabadi	Ketakiapana	Dhanua		1 GP 3 Village	1000	3	Nil
50	Satyabadi	Sukal	Ratnachira		1 GP 5 Village	2000	4	Nil

### 3.6 Lightning:

Table No. 15-

Sl. No.	Name of the Block/ ULB	Identifiable incidents of lightning hit in last 5 years		No. of Lightning events	No. fatality/ Deaths	Injured Persons
		No. GPs	No. of Villages/ Wards			
1	Puri District				50	
2						

[List of villages is at Table No. 3.2 of Volume II of the DDMP]

### 3.7 Major Industrial Establishments/ Chemical & Other hazardous material storage points:

Table No. 16-

Sl. No.	Name of the Industry/Unit	Complete Postal Address	Telephone Number	Manufacturing Item
1.	M/s Vijaya Impex	Chakratirtha Road, Puri		Prawn Fishing
2.	M/s Vijaya Marine Products	Atharanala, Puri		Prawn Fishing
3.	M/s S. Chanchala Combines	Atharanala, Puri		Prawn Fishing
4.	M/s Jagannath Export & Import	Atharanala, Puri		Prawn Fishing
5.	M/s Utkal Marine	Gokhara, Brahmagiri		Prawn Fishing
6.	M/s Utkal Udyog	Gokhara, Brahmagiri		Prawn Fishing
7.	M/s Hindustan Ice Factory	Gokhara, Brahmagiri		Ice Blocks
8.	M/s Neelachal Ice Factory	Chakratirtha Road, Puri		Ice Blocks
9.	M/s Utkal Ice Factory	Puri		Ice Blocks
10.	M/s Ice Producers	Puri		Ice Blocks

### 3.8 Drought:

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

Table No.- 17

Sl. No.	Name of the Block	Average Annual Rain Fall (2016)	Ground Water Level	Cultivated Area (In Hectares)			
				Paddy		Non- Paddy	
				Rain fed Area	Irrigated area	Rain fed Area	Irrigated area
1	Astarang	139.23	-	5714	5201	-	-
2	Brahmagiri	84.16	-	10546	6856	-	-
3	Delang	70.08	-	7047	10967	-	-
4	Gop	111.98	-	9434	15891	-	-
5	Kakatpur	117.03	-	1793	7613	-	-
6	Kanas	84.59	-	7378	9645	-	-
7	Krushnaprasad	95.20	-	13543	1165	-	-
8	Nimapara	112.75	-	3656	22549	-	-
9	Pipili	94.73	-	4732	14573	-	-
10	Puri Sadar	119.39	-	6002	10480	-	-
11	Satyabadi	93.08	-	2083	11315	-	-
	<b>Total</b>	<b>1122.22</b>	-	<b>71928</b>	<b>116255</b>	-	-

### 3.9 Railway Line Exposed to different Hazards:

One of the major transport services of Puri district is Railways as all parts of the country have been directly connected through railways. East Coast Railways having Head Quarters at Bhubaneswar and Divisional Head Quarters at Khurda Road is serving to the district with following 10 nos of Railway stations

**1. Puri:** Puri Railway station is one of the major railway stations of Indian Railways. The average annual outward and inward passenger dealt at the station is 58 lakhs approximately. Various Passenger Amenities like Passenger Reservation System, Automatic Ticket Vending Machines, PNR KIOSK, Upper class Waiting Room separately for Gents and Ladies, AC and Non-AC Retiring Rooms, Dormitories, Food Plaza ,etc have been provided at Puri station.

**2. Malatipatpur:** Malatipatpur Railway station is coming under Puri district which is only about 07 KMs from Puri station. Unreserved Ticketing System (UTS) is available at the station.

**3. Janakdeipur Passenger Halt:** It is a Passenger Halt station in Puri district between Sakhigopal and Malatipatpur Railway stations. The base station of Janakideipur Passenger Halt is Malatipatpur station.

**4. Sakhigopal:** Sakhigopal Railway station is in between Janakideipur Passenger Halt and Birapurushottampur railway stations. Passenger Reservation system (PRS) facility and Unreserved Ticketing System(UTS) have been provided at this station.

**5. Birapurushottampur:** This railway station is situated in between Sakhigopal and Jenapur Road Passenger Halt. Unreserved Ticketing System (UTS) is available at the station.

**6. Jenapur Road Passenger Halt:** It is a Passenger Halt station. The base station of this Passenger Halt is Delang station.

**7. Delang:** This railway station is situated in between Jenapur Road Passenger Halt and Kanas Road railway stations. Passenger Reservation system facility and Unreserved Ticketing System (UTS) have been provided at this station.

**8. Kanas Road:** This railway station is situated in between Delang and Motari railway stations. Passenger Reservation facility and Unreserved Ticketing System (UTS) have been provided at this station.

**9. Motari:** This railway station is situated in between Kanas Road and Haripurgram Passenger Halt stations. Unreserved Ticketing System (UTS) is available at the station.

**10. Haripurgram Passenger Halt:** It is a Passenger Halt station. The base station of this Passenger Halt is Khurda Road station.

### 3.10 Road Accidents:

[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:

### 3.11 Population Requiring Special Care:

Table No: 22-

Sl. No.	Block/ ULB	No. of HHs headed by Women	No. of HHs headed by W D	No. of Persons With Disability		No. of Widow	No. of Children		No. of Orphans		No. of Aged Persons (60 and above)		No. of Pregnant and lactating mothers
				M	F		0-5 Years	6-14 Years	M	F	M	F	
1	Astarang			469	313	1582					3562	2375	
2	Brahmagiri			545	363	4101					5400	3600	
3	Delang			647	432	2552					5288	3526	
4	Gop			1113	742	3495					6719	4480	
5	Kakatpur			552	368	1896					4633	3089	
6	Kanas			659	439	2658					5846	3898	

7	Krushnaprasad		313	208	2095				3039	2026	
8	Nimapara		538	359	5278				7989	5326	
9	Pipili		517	344	3599				5196	3464	
10	Puri Sadar		1000	666	3906				5971	3981	
11	Satyabadi		1001	667	3019				4705	3136	
12	Konark NAC		97	65	276				445	296	
13	Nimapara NAC		101	68	297				496	331	
14	Pipili NAC		79	52	230				432	288	
15	Puri Municipality		783	522	3631				4035	2690	
	<b>Total</b>		<b>8413</b>	<b>5609</b>	<b>38615</b>				<b>63757</b>	<b>42505</b>	

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

### 3.12 Division wise list of Vulnerable Embankment Points:

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	5	6	7
1	Nimapara Irrigation Division	Devi Right	RD 81.00 Km	65.00	Astarang	Sathiabati
2			RD 79.100 Km	145.00	Astarang	Baurikana
3			RD 81.400 Km	205.00	Astarang	Benipur
4			RD 83.600 Km	240.00	Astarang	Gopalpur
5			RD 85.00 Km	100.00	Astarang	Asan
6		Bhargavi Left	RD 33.350 to 34.100 Km	400.00	Satyabadi	Suando
7		Kushabhadra Right	RD 34.100 to 34.400 Km	300.00	Nimapara	Nakadiha
8	Puri Irrigation Division	Daya Left	31.00 to 31.50 Km	500.00	Delang	Beguniapada, Tirumala, Basantapur
9		Daya Left	35.90 to 36.70 Km	800.00	Delang	Balihunka, Ghoradia
10		Daya Left	43.80 to 43.90 Km	100.00	Kanas	Talapada, Bhatapada
11		Bhargavi Right	28.200 to 28.500 Km	300.00	Pipili	Rathapurussottampur, Khairikunda

12		Bhargavi Right	29.260 Km to 29.490 Km	230.00	Pipili	Dakhinasahi, Balapru
13		Bhargavi Left	51.500 to 52.00 Km	500.00	Puri Sadar	Singmapur, Podakera, Uttarana, Mathasahi
14		Bhargavi Left	65.50 to 65.70 Km	200.00	Brahmagiri	Tinikudi, Kapileswarpur, Balikera
15		Bhargavi Left	67.40 to 67.70 Km	300.00	Brahmagiri	Raighat, Bilapanchagochia, Kadajit
16		Gobkund cut left	2.60 to 2.70 Km	100.00	Puri Sadar	Jamarsuan, Nuagaon, Baliput, Vingura
17	Prachi Irrigation Division, Bhubaneswar	Daya			Delang	Golapada gherry near vill Golapada

### 3.13 Earthquake Vulnerability:

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

Puri District is coming under both Zone-II & Zone – III as per BMTPC. The all 11 Blocks (except part of Krushnaprasad Block) comes under Zone –III (Moderate damage risk zone) and Krushnaprasad (P) comes Zone –II (Low damage risk zone).

### 3.19 Cultural Heritage Sites and Precincts

Sl. No.	Cultural Heritage site/precinct	Address/Location	Category (Centrally Protected Monument/ State Protected/ UNESCO World Heritage Site/ Unprotected Monument)	Name & Contact details of the Controlling/ Supervising Authority at the district level	Remarks (if Any)
1	Shri Jagannath Temple and subsidiary shrines	Puri	Centrally Protected Monument		
2	Athara Nala Bridge	Puri	Centrally Protected Monument		
3	Sun Temple	Konark	UNESCO World Heritage Site		
4	Alarnatha Temple	Brahmagiri	State Protected Monument		
5	Amareswar Temple	Amareswar	State Protected Monument		
6	Baliharchandi Temple	Brahmagiri	State Protected Monument		
7	Bhavakundaleswar Siva Temple	Manikapatana	State Protected Monument		
8	Buddhist Image	Badatara, Gop	State Protected Monument		

9	Avalokiteswara	Badatara, Gop	State Protected Monument		
10	Jambala	Badatara, Gop	State Protected Monument		
11	Tara	Badatara, Gop	State Protected Monument		
12	Budhanatha Temple	Alanda	State Protected Monument		
13	Excavated site of Kuruma	Kuruma	State Protected Monument		
14	Gambhira Radhakanta Matha	Balisahi	State Protected Monument		
15	Gangeswari Temple	Bayalishbati	State Protected Monument		
16	Gatiswara Temple	Algum, Sakhigopal	State Protected Monument		
17	Gopaljiu Temple	Jagadapur	State Protected Monument		
18	Gopinath Temple	Sakhigopal	State Protected Monument		
19	Gopinath Temple	Nuasomeswar pur	State Protected Monument		
20	Grameswar Temple	Terundia, Nimapara	State Protected Monument		
21	Grameswar Temple	Lataharan, Kakatpur	State Protected Monument		
22	Harachandi Temple	Sriramchandra pur, Sakhigopal	State Protected Monument		
23	Iswardeva Temple	Jiunti	State Protected Monument		
24	Khileswar Temple	Khilore	State Protected Monument		
25	Kumareswar Temple	Indipur	State Protected Monument		
26	Kunjabihari Temple	Raktapata	State Protected Monument		
27	Laxminarayana Temple	Chaurasi	State Protected Monument		
28	Mangala Temple	Kakatpur	State Protected Monument		
29	Nilakantheswar Temple	Hansapada	State Protected Monument		
30	Sabhamandap	Tulasipur	State Protected Monument		
31	Siddhabakula Matha	Balisahi	State Protected Monument		
32	Somanatha Temple	Birabhadrapur	State Protected Monument		
33	Somanatha Temple	Subarnapur, Gop	State Protected Monument		
34	Somanatha Temple	Bishnupur	State Protected Monument		
35	Somanatha Temple	Ghoradia	State Protected Monument		

36	Vanibakreswar Temple	Ghoradia	State Protected Monument	
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### 3.20 **Museum**

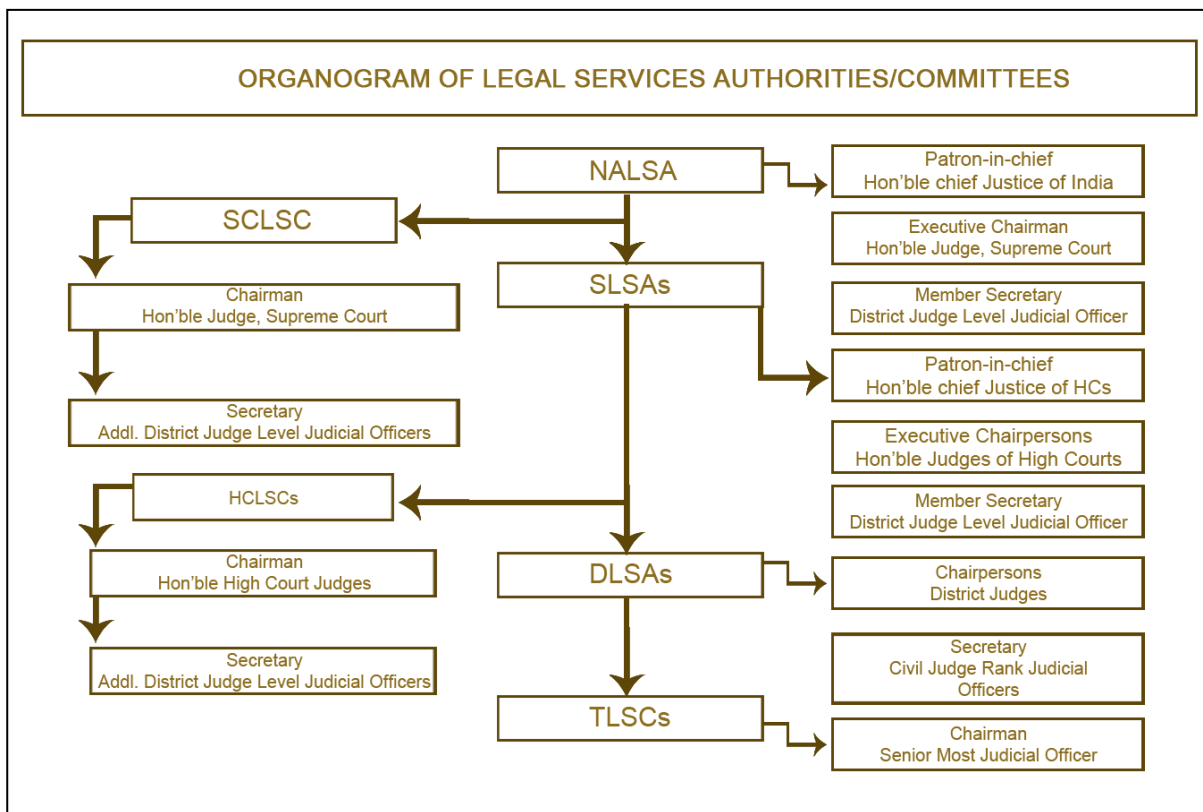
Sl. No.	Name of the Museum	Location and Address	Type	Category/ Controlling Body (ASI/ Central Government/ State Government/ Private/ Public Trust/ Privately Managed/ University/ College)	Name & Contact details of the Controlling Authority/ Owner	Remarks (if any)
1	Puri Branch Museum, Puri	Station Bazar, Puri	Archeological Museum	State Government	Hemanta Kumar Behera, District Culture Officer, Puri Office Telephone No. 06752 - 228227, Mobile No. 9692720594	

### 3.22 **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'ble Judge, Supreme Court of India is the Executive Chairman of the Authority.

Public awareness, equal opportunity and deliverable justice are the cornerstones 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 for a 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 various agencies and stakeholders.



### 3.23 Odisha State Legal Services Authority (SALSA):

Odisha State Legal Services Authority is a Statutory Body established under the Legal Services Authorities Act, 1987. Hon'ble Chief Justice of High Court of Odisha is the Patron-in-Chief of the Odisha Legal Services Authority and the Sr. Judge of the High Court of Orissa is the Executive Chairman of the Odisha Legal Services Authority. To look after the legal services pertaining to the High Court, there is High Court Legal Services Committee, which is chaired by a sitting Judge of the High Court and the Registrar (Judicial), Orissa High Court is functioning as the Secretary of High Court Legal Services Committee. The State Legal Services Authority monitors and guides the District Legal Services Authorities and Taluk Legal Services Committees in achieving the aims and objectives of the Act. There are 30 District Legal Services Authorities in the State of Odisha and 81 Taluk Legal Services Committees functioning under them. The District Legal Services Authorities are headed by District & Sessions Judges. An officer in the cadre of Senior Civil Judge functions as the Secretary of the District Legal Services Authority. The Taluk Legal Services Committees are headed by the senior most judicial officer posted at the station as the Chairman.

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 may be, for their legal needs. Added to it, Front Offices have also been established in the premises of 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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# Chapter – 4: Institutional Arrangement

## 4.1 National Disaster Management Authority (NDMA)

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

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

## 4.2 National Executive Committee (NEC)

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

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

*(Please refer Figure\_of Volume -II (Page no..) for Central Government Notification on constitution of NEC)*

## 4.3 State Disaster Management Authority (SDMA)

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

The State Disaster Management Authority shall:-

- a) Lays down policies and plans for disaster management in the State.
- b) Approves the State Plan in accordance with the guidelines laid down by the NDMA,
- c) Coordinates the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures.
- d) Review the developmental plans of different departments of the State to ensure the integration of prevention, preparedness and mitigation measures.
- e) Lay down guidelines to be followed by the departments of the State Government for the purpose of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance there for.
- f) Review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government & issue such guidelines as may be necessary.
- g) Lay down detailed guidelines for providing standards of relief (Not less than the minimum standard of relief in the guidelines of NDMA) to persons affected by disaster in the State.

*(Please refer Figure\_of Volume -II (Page no..)for Odisha Government Notification on reconstitution of SDMA)*

## 4.4 State Executive Committee (SEC)

The State Executive Committee (SEC) has been constituted by the State Governments under sub-section (1) & (2) of section (20) to assist the State Disaster Management Authority (SDMA) in the performance of its

function and to coordinate action in accordance with the guidelines laid down by the SDMA and ensure the compliances of directions issued by the State Government under the DM act. The Chief Secretaries of the States are the Chairman of SEC (ex-officio). Four Secretaries of State Government are the other member's ex-officio. The Chairperson of SEC use powers delegated by SDMAs and state Governments.

The State Executive Committee shall:-

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

*(Please refer Figure\_of Volume -II (Page no..) for Odisha Government Notification on constitution of SEC)*

#### **4.5 Revenue and Disaster Management Department:**

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

#### **4.6 Special Relief Organization:**

The Special Relief Organisation was established under the Board of Revenue in 1965-66 for carrying out relief and rescue operation during and after various disasters. Since its inception, the scope of Relief Organisation has been diversified. Now it deals with disaster management i.e. response, relief and rehabilitation. It coordinates with districts/departments for quick relief and rescue operation, reconstruction and rehabilitation work. It also promotes disaster preparedness at all levels in the State with the assistance of Odisha State Disaster Management Authority (OSDMA). Quick response in the natural calamities is the hallmark of Special Relief Organisation.

#### **4.7 Odisha State Disaster Management Authority (OSDMA):**

Odisha State Disaster Mitigation Authority (OSDMA) was established by the Government of Odisha as an autonomous organization vides Finance Department Resolution No. IFC- 74/99-51779/F dated the 28<sup>th</sup> December 1999 (in the intermediate aftermath of the Super-cyclone in 1999). It was registered under the Societies Registration Act, 1860 on 29.12.1999 as a non-profit making & charitable institution for the interest of the people of Odisha, with its headquarters at Bhubaneswar and jurisdiction over the whole State.

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

- Coordination with the line departments involved in reconstruction,
- Coordination with bilateral and multi-lateral aid agencies,
- Coordination with UN Agencies, International, National and State-level NGOs,
- Networking with similar and relevant organizations for disaster management.

#### **4.8 State Level Committee on Natural Calamity (SLCNC)**

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

The Function of the SLCNC is -:

- a) To advise the State Government regarding precautionary measures to be taken in respect of flood, drought and other natural calamities.
- b) To assess the situations arising out of the calamities.

- c) To recommend to Government the nature and quantum of relief; and
- d) To recommend to Government the Policy to be adopted in giving such relief in areas affected by such calamities.

*(Please refer Figure\_\_of Volume -II (Page no..) for Odisha Government Notification on reconstitution of SLCNC)*

#### 4.9 District Disaster Management Authority (DDMA)

Under the sub-section (1) of section 14 of DM act 2005. District Disaster Management Authority has been constituted by the State Government.

The District Disaster Management Authority (DDMA) consists of the Chairperson and such number of the other members, not exceeding seven, as may be prescribed by the State Government, and unless the rules otherwise provide, it shall consist of the following namely: -

- a) The Collector or District Magistrate or Deputy Commissioner of the District is the Chairperson (*ex-officio*) of DDMA.
- b) The elected representative of local authority is the Co-chairperson (*ex-officio*) of DDMA.
- 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, *ex officio*
- d) The Chief Executive of the District Authority, *ex officio*;
- e) The Superintendent of Police, *ex officio*;
- f) The Chief Medical Officer of the district, *ex officio*;
- g) Not exceeding two other district level officers, to be appointed by the State Government

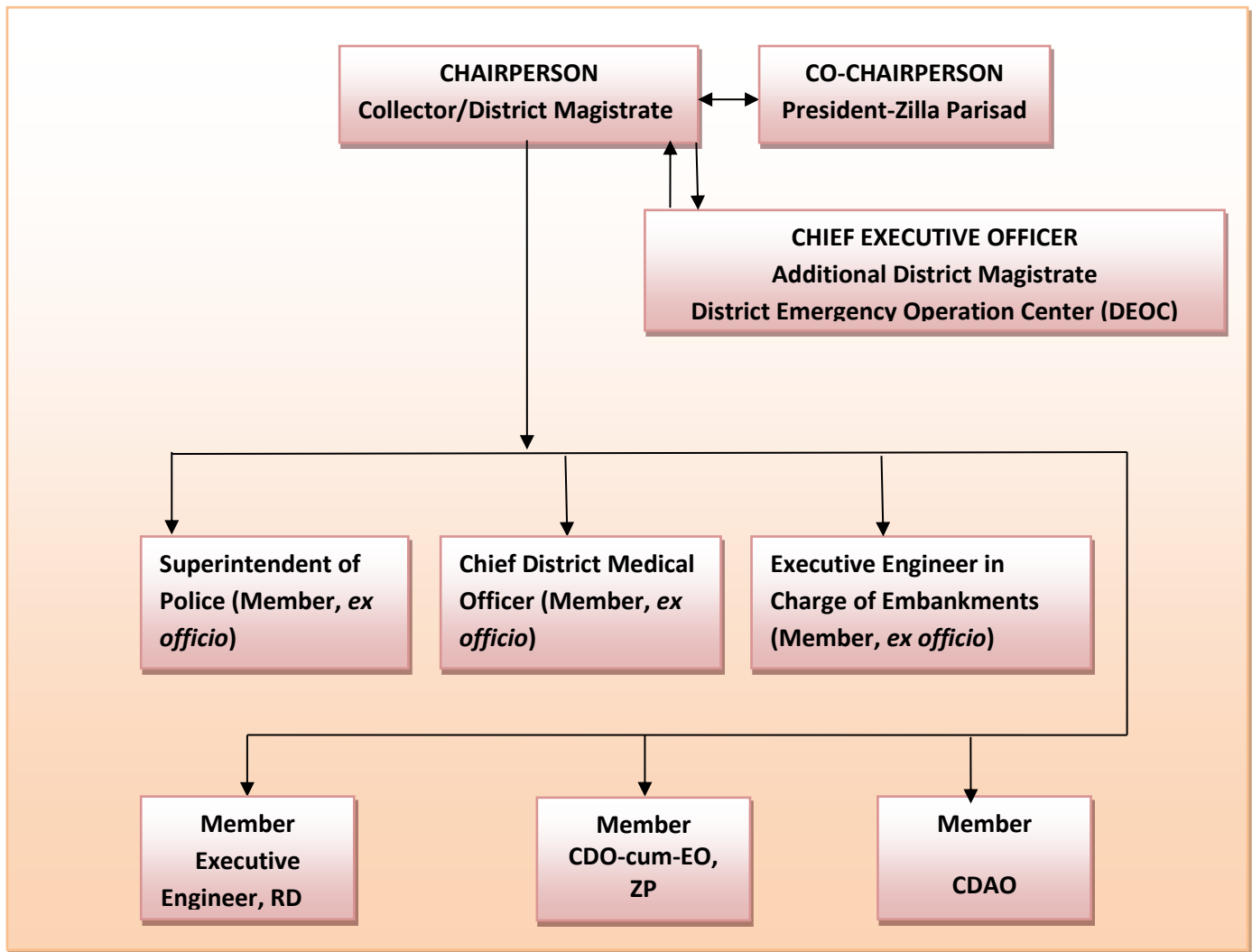
The State Government appoints an officer not below the rank of Additional Collector or Additional District Magistrate or Additional Deputy Commissioner, as the case may be of the district to be Chief Executive Officer of DDMA.

*(Please refer Figure\_\_of Volume -II (Page no..) for Odisha Government Notification on constitution of DDMA)*

**Table \_: Structure of District Disaster Management Authority**

Sl No.	Name of the Officer	Designation	Position in DDMA	Contact No.
1.	Shri. Dibya Jyoti Parida, IAS	Collector & District Magistrate, Puri	Chairperson, <i>ex-officio</i>	06752-222034
2.	Smt. Swapnarani Swain	Chairman, Zilla Parishad	Co-Chairperson, <i>ex-officio</i>	7853011821
3.	Sri. Prateek Singh, IPS	Superintendent of Police	Member, <i>ex-officio</i>	06752-225400
4.	Shri. Sharat Chandra Behera, OAS	ADM in charge of Emergency	Chief Executive Officer, <i>ex-officio</i>	9437713386
5.	Dr. Rupabhanu Mishra	Chief District Medical & Public Health Officer	Member, <i>ex-officio</i>	9439994708
6.	Er. Amiya Ranjan Seth	The Executive Engineer in charge of embankments	Member, <i>ex-officio</i>	9437347691
7.	Shri Priya Ranjan Prusty, OAS	Chief Development Officer-cum-Executive Officer, Zilla Parisad	Member	9439705790
8.	Er. Jyoti Prakash Samal	Executive Engineer, Rural Development	Member	9437255349
9.	Sri. Tapan Mohapatra	Chief District Agriculture Officer	Member	9437295020

Figure\_: Organogram of District Disaster Management Authority



### Organogram of DDMA, Puri

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

The District Disaster Management Authority (DDMA) shall:-

- a) Prepare Disaster Management Plan including District Response Plan of the District.
- b) Coordinate and monitor the implementation of the National DM Policy, State DM Policy, State DM Plan and District DM Plan.
- c) Ensure that vulnerable areas of the districts are identified and prevention and mitigation measures are being undertaken by the departments of the Government both at district level and at local level.
- d) Ensure that guidelines for Prevention and Mitigation measures, Preparedness and Response as lay down by NDMA and SDMA are being followed by all departments of Government both at district and local level.
- e) Monitor the implementation of Disaster Management Plans prepared by the departments of the Government at the district levels.
- f) Lay down guidelines to be followed by different Government departments both at district level and local level for integrating disaster prevention and mitigation measures in their development plans and projects and provides necessary technical assistance thereof;
- g) Review the state of capability for responding to any disaster or threatening disaster like situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation.
- h) Review the preparedness measures and give directions to the concerned departments at the district level for bringing the preparedness measures to the levels required for responding effectively to any disaster.

- i) Organize, coordinate and facilitate specialized training programmes and awareness programmes for different level of officers, employees, voluntary rescue workers and community members for prevention and mitigation of disaster with support of governmental and non-governmental organization and local authorities.
- j) Set up, maintain, review and upgrade mechanism for early warning and dissemination of proper information to public.
- k) Review development plans prepared by the departments of the government at the district level, statutory authorities with a view to make necessary provisions therein for prevention of disaster or mitigation.
- l) Examine construction in any area in the district and ensure standards for prevention of disaster or mitigation laid down for such construction to be followed by the concerned departments and authorities.
- m) Identify buildings and places which could be used as relief centers or camps in the event of any disaster or disaster like situation and make arrangements for water supply and sanitation in such buildings and places.
- n) Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at short notice;
- o) Encourage the involvement of Non-Government Organization and Voluntary social -welfare institutions working at the grass root level in the district for disaster management.
- p) Ensure communication systems are in order and disaster management drills are carried out periodically.
- q) Perform such other functions as the State Government or State Authority may assign to.

### **Specific task assigned to members of DDMA by the Chairperson**

#### **Collector and District Magistrate, Puri:**

- Overall supervision of preparedness and response activities
- Monitoring the activities at different level and departments

#### **Superintendent of Police, Puri:**

- Ensure 24\*7 Control Room Operation
- Ensure the law-and-order situation in the district at the time of emergency.
- Ensure necessary protection for the supply of relief materials.

#### **Additional District Magistrate, Puri**

- Monitoring the activities at different level and departments
- Ensure preparedness and response activities at the district level

#### **CDO-cum-EO, Zilla Parishad, Puri:**

- Ensure 24\*7 control room operation at different blocks
- Ensure all the block staff will be in readiness
- Ensure timely preparedness and response activities at the block level
- Ensure and monitor timely evacuation if required from the low-lying areas

#### **CDM&PHO, Puri:**

- CDM&PHO ensure the necessary medical arrangement at the Dist. / PHC / CHC level.
- Ensure that necessary medicines with anti snake venoms are piled at different health units.
- Mobile health unit needs to be in readiness.

#### **Executive Engineer, Irrigation, Puri**

- Ensure the status of weak embankments and safe guarding of the same
- Liaison with the Deputy Collector and report the status of the embankments
- Stock piling of the flood fighting materials
- Preparation of flood contingency plan
- Monitoring the control room and close watch on the situation

### Chief District Agriculture Officer, Puri:

- Flood contingency planning and monitoring
- Drought management planning
- Capacity building of the farmers as and when required for alternative cropping

### District Level Committee on Natural Calamity (DLCNC)

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

**Table\_ : Structure of District Level Committee on Natural Calamity**

Sl No.	Name of the Member	Designation	Contact No.
1	Shri Dibya Jyoti Parida, IAS	District Collector & District Disaster Manger	06752-222034
2	Dr. Sambit Patra	Hon'ble MP, Puri	9999611442
3	Shri. Bibhu Prasad Tarai	Hon'ble MP, Jagatsinghpur	9437318470
4	Shri. Upasna Mohapatra	Hon'ble MLA, Brahmagiri	9437028328 7008326040
5	Shri. Sunil Kumar Mohanty	Hon'ble MLA, Puri	6372938599
6	Smt. Pravati Parida	Hon'ble Deputy Chief Minister & Minister W&CD & Tourism & MLA, Nimapara	9437022670
7	Shri. Om Prakash Mishra	Hon'ble MLA, Satyabadi	9937001916
8	Shri. Tusharikanti Behera	Hon'ble MLA, Kakatpur	9776338615
9	Shri. Ashrit Patanaik	Hon'ble MLA, Pipili	9439688888
9	Shri Prateek Singh, IPS	Superintendent of Police	06752-225400
10	Shri. Sharat Chandra Behera, OAS	Addl. District Magistrate	9437713386
11	Shri. Priya Ranjan Prusty, OAS	Chief Development Officer-cum-Executive Officer, Zilla Parisad	9439705790 06752-222136
12	Sri. Rajkishore Jena, OAS	Sub Collector	9439463964 06752-222059
13		Suptd. Engineer	
14	Dr. Rupabhanu Mishra	CDM&PHO	9439994708 06752-222175
15	Dr. Sarat Behera	CDVO	9437832405 06752-222009
16	Ms. Manisha Sarangi	District Emergency Officer	8551099770 06752-223237

17		Chairperson/ Vice Chairperson of Zilla Parishad	
18		Chairperson of Panchayat Samities	
19		District Development Officer	
20	Sri. Tapan Mohapatra	Chief District Agriculture Officer	9437295020
21	Smt. Sasmita Behera	BDO, Astaranga	8249309950 06758-230305
22	Sri. Amiya Kumar Panda	BDO, Brahmagiri I/c	9437483622 06752-235522
23	Sri. Sambit Satapathy	BDO, Puri Sadar	7978648478 06752-223369
24	Smt. Chhabirani Sahoo	BDO, Gop	9437549356 06758-257425
25	Sri. Narayan Dixit	BDO, Kakatpur	7326996611 06758-231138
26	Sri. Amiya Kumar Panda	BDO, Krushnaprasad	9437483622 06756-261033
27	Sri. Khitish Behera	BDO, Delang	8895610781 06758-242230
28	Sri. Soumyaranjan Swain	BDO, Kanas	8093613741 06752-240022
29	Sri. Abhijeet Sarangi	BDO, Nimapara	7008462830 06758-250236
30	Sri. Saroj Kumar Rout	BDO, Pipili	7799000046 06758-240746
31	Sri. Debasish Nayak	BDO, Satyabadi	8984310255 06752-272253
32	Priyanka Priyadarsini Pati	Tahasildar, Astaranga	7735496850 06758-230388
33	Sri. Sashibhusan Mishra	Tahasildar, Brahmagiri	8114746181 06752-235522
34	Sri. Abhisek Dash	Tahasildar, Puri Sadar	8144758833 06752-223240
35	Sri. Anil Kumar Mohanty	Tahasildar, Gop	8328944207 06758-257885
36	Ankita Anandita	Tahasildar, Kakatpur	8260653655 06758-231122
37	Sri. Bikash Sethy	Tahasildar, Krushnaprasad I/c	9348294571 06756-261022
38	Sri. Devi Prasanna Acharya	Tahasildar, Delang	7008894539

			06758-242100
39	Sri. Himanshu Sekhar Giri	Tahasildar, Kanas	9438687426 06752-240165
40	Sri. Manoj Pradhan	Tahasildar, Nimapara	7008952638 06758-250222
41	Sri. Hrushikesh Tripathy	Tahasildar, Pipili	9438362571 06758-240728
42	Sri. Santosh Kumar Panigrahi	Tahasildar, Satyabadi	9692925701 06752-272253
43		Executive Engineers, Irrigation / WATCO/ PWD/ Rural Works Division/ Minor Irrigation/ Lift Irrigation/ RWSS Division/	
44		All Executive Officers of ULBs	
45		C.S.O/ R.T.O/D.I. & P.R.O/C.I/D.I. of Schools	
46		Leading NGO Representatives nominated by Chairman	
47	Sri. Siba Rout	DET	9434001730

### District Crisis Group, Puri

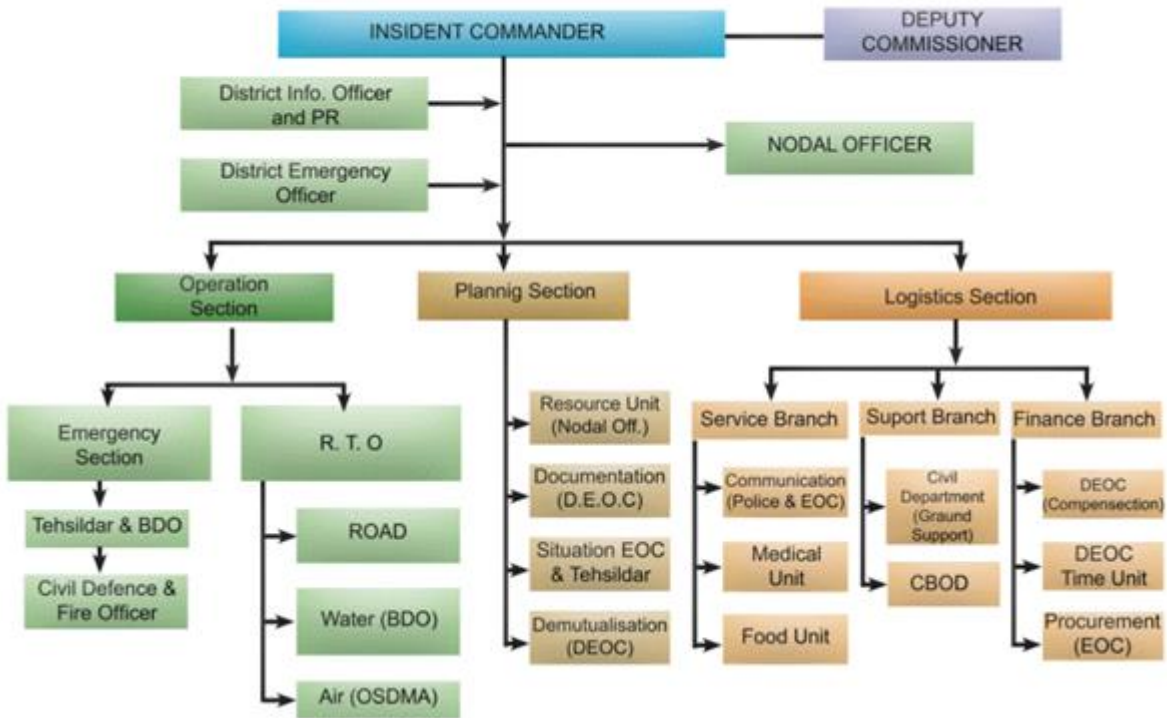
Sl No	Functionaries	Designation
1	Collector & District Magistrate, Puri	Chairperson
2	The Assistant Director of Factories and Boilers, Bhubaneswar Zone -II	Member Secretary
3	District Emergency Officer, Puri	Member
4	District Fire Officer, Puri	Member
5	The District Information and Public Relation Officer, Puri	Member
6	Deputy Controller of Civil Defense Bhubaneswar	Member
7	The Controller of Explosives	Member
8	The Superintendent of Police, Puri	Member
9	The Commandant National Disaster Response Force, Munduli	Member
10.	The Chief District Medical & Public Health Officer, Puri	Member
11.	The Executive Officer, Puri Municipality	Member
12.	The General Manager, WATCO, Puri	Member
13.	The Regional Officer Odisha State Pollution Control Board, Puri	Member
14.	The Chief District Agriculture Officer, Puri	Member
15.	Secy. National Safety Council Odisha Chapter	Member
16.	Siksha O Anushandhan University	Member
17.	Regional Transport Officer, Puri	Member
18.	The Sub Collector, Puri	Member (Chairperson Local Crisis Group)
19.	The District Civil Supply Officer, Puri	Member

Sl No.	Battalion, Location	State	Man power drawn from	Contact Person	Contact No.	E-Mail
1	01 Bn, NDRF, Guwahati	Assam	BSF	Sh. Hitender Pal Singh Kandari Commandant	0361-280027 / 07637011337 09435117246	<a href="mailto:assam01-ndrf@nic.in">assam01-ndrf@nic.in</a>
2	02 Bn, NDRF, Kolkata	West Bengal	BSF	Sh. Gurminder Singh Commandant	033-25875032 09474061104 09474116775	<a href="mailto:wb02-ndrf@nic.in">wb02-ndrf@nic.in</a>
3	03 Bn, NDRF, Munduli	Odisha	CISF	Sh. Vardhaman Mishra, Commandant	09437581614/0671-2879710/2879711	<a href="mailto:ori03-ndrf@nic.in">ori03-ndrf@nic.in</a>
4	04 Bn, NDRF, Arakkonam	Tamil Nadu	CISF	Sh. Akhilesh Kumar, Commandant	9442105169 / 04177-246594 / 09442140269	<a href="mailto:tn04-ndrf@nic.in">tn04-ndrf@nic.in</a>
5	05 Bn, NDRF, Pune	Maharashtra	CRPF	Sh. Santosh Bahadur Singh, Commandant	9423506765/02114-247000 09422315628	<a href="mailto:mah05-ndrf@nic.in">mah05-ndrf@nic.in</a>
6	06 Bn, NDRF, Gandhinagar	Gujrat	CRPF	Sh. Surender Singh, Commandant	9428826445 / 079-23201551 09723632166	<a href="mailto:guj06-ndrf@nic.in">guj06-ndrf@nic.in</a>
7	07 Bn, NDRF, Bhatinda	Punjab	ITBP	Sh. Santosh Kumar, Commandant	0164-2246193 / 2246570	<a href="mailto:pun07-ndrf@nic.in">pun07-ndrf@nic.in</a>
8	08 Bn, NDRF, Ghaziabad	Uttar Pradesh	ITBP	Sh. P.K.Tiwari, Commandant	9968610014 / 0120-2766618 09412221035	<a href="mailto:up08-ndrf@nic.in">up08-ndrf@nic.in</a>
9	09 Bn, NDRF, Patna	Bihar	BSF	Sh. Suneel Kumar Singh, Commandant	07762884444 06115-253939 08544415050 09525752125	<a href="mailto:patna-ndrf@nic.in">patna-ndrf@nic.in</a>
10	10 Bn, NDRF, Vijayawada	Andhra Pradesh	CRPF	Sh. V.V.N Prasanna Kumar, Commandant	7382299621 / 0863-2293050 08333068559	<a href="mailto:ap10-ndrf@nic.in">ap10-ndrf@nic.in</a>
11	11 Bn, NDRF, Varanasi	Uttar Pradesh	SSB	Sh. Manoj Kumar Sharma, Commandant	9455511107 / 0542-2501101 08004931410	<a href="mailto:up-11ndrf@gov.in">up-11ndrf@gov.in</a>
12	12 Bn, NDRF, Itanagar	Arunachal Pradesh	SSB	Sh. Virendra Kumar Verma, Commandant	9485235464 / 0360-2277106 0360-2277104	<a href="mailto:bn12.ndrf@gov.in">bn12.ndrf@gov.in</a>
13	13 Bn, NDRF, Ludhiana	Punjab		Sh. Biju K. Sam, Commandant	0161-2921304 0161-2921305	<a href="mailto:jk13.ndrf@gov.in">jk13.ndrf@gov.in</a>
14	14 Bn, NDRF, Kangra	Himanchal Pradesh		Sh. Baljinder Singh, Commandant	01893-292478 01893-292602	<a href="mailto:co14.ndrf@gov.in">co14.ndrf@gov.in</a>
15	15 Bn, NDRF, Uddamsingh Nagar	Uttarakhand		Sh. Sudesh Kumar Drall, Commandant	05949-231198 05949-231199 07579098442	<a href="mailto:co15.ndrf@gov.in">co15.ndrf@gov.in</a>

16	16 Bn, NDRF, Dwarka	New Delhi		Sh. Abujam Bijoy Kumar Singh, Commandant	011-20892672 011-20893564	co16.ndrf@gov.in
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## Incident Response System

### INCIDENT RESPONSE SYSTEM- INCIDENT RESPONSE TEAM (PURI)



#### 4.10 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 Border Security Forces (BSF) and 2 Unit each from Central Industrial Security Forces (CISF), Indian Tibbet Boarder Police (ITBP) and Sahastra Seema Bal (SSB). Each battalion has 18 self-contained specialists Search and Rescue teams of 45 personnel. The NDRF team includes Chemical, Biological and Radiological Disaster (CBRN) emergency responders, S&A element, engineers, technicians, electricians, dog squads and paramedics. The NDRF battalions are strategically located at 8 different locations in the country based on the vulnerability profile to cut down response time for their deployment. During the threatening proactive deployment of NDRF is being carried out by NDMA in consultation with the State Governments.

**Table \_:** Location of National Disaster Response Forces

#### 4.11 Odisha Disaster Rapid Action Force (ODRAF)

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

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

**Table\_: Location of Odisha Disaster Rapid Action Force with contact details**

Sl No.	Place	Personnel drawn from	Name of the Commandant	Contact No.	Name of Subedar	Contact No.
1	Cuttack	OSAP 6 <sup>th</sup> Bn, Cuttack	Shri B.B.Rout,OAPS(I)	9438800008 0671-2442148	Sri. Mahatang Hansda	9439457443
2	Jharsuguda	OSAP 2 <sup>nd</sup> Bn, Jharsuguda	Shri Asish Kumar Dubey	9437129436 06645-270096	Sri. Kul Bahadur Thapa	9658630354
3	Koraput	OSAP 3 <sup>rd</sup> Bn, Koraput	Shri Manoj Kumar Purohit OAPS (1)	9437442139 / 7377276791 06852-251344	Sri. Ramesha Chandra Hati	9938406905
4	Chatrapur	OSAP 8 <sup>th</sup> Bn, Chatrapur	Shri U. K. Ratha,OAPS (I)	9437233728 06811-260375	I/C ODRAF SI(A) C.R.Bisoi	8280033508
5	Balasore	Armed Police Reserve (APR), Balasore district	Shri Jugal Kishor, IPS	9437123300 06782-262007	I/C ODRAF Sgt.P.K.Ransingh	9439379619
6	Bhubaneswar	OSAP 7 <sup>th</sup> Bn, Bhubaneswar	Shri Kunja Bihari Sahu DCP (Armed)	8249599460 0674-2301055	I/C ODRAF ACP D.K.Dehuri	9437185548
7	Baripada	OSAP 5 <sup>th</sup> Bn,Baripada	Shri Suresh Kumar Behera	9438153308/ 9437358292 06792-278232	Sri. Chandamani Bag	9861986183

8	Rourkela	OSAP 4 <sup>th</sup> Bn, Rourkela	Shri Purusottam Sahoo, OAPS (1)	9437274800  0661- 2600980	Sri. Ashok Behera	9437419436
9	Balangir	Armed Police Reserve (APR), Balangir district	K Siva Subramani, IPS	9438916510  06652- 232020	M Laxmiranjan,	9439268154
10	Jagatsinghpur at Paradeep	Armed Police Reserve (APR), Jagatsinghpur district	Shri R.Prakash, IPS	9437102020  06724- 220115	I/C ODRAFDSI P.K.Routray	9438436188

#### 4.12 Other Disaster Response Teams in the District

Table\_: List of other Disaster Response Teams in the District

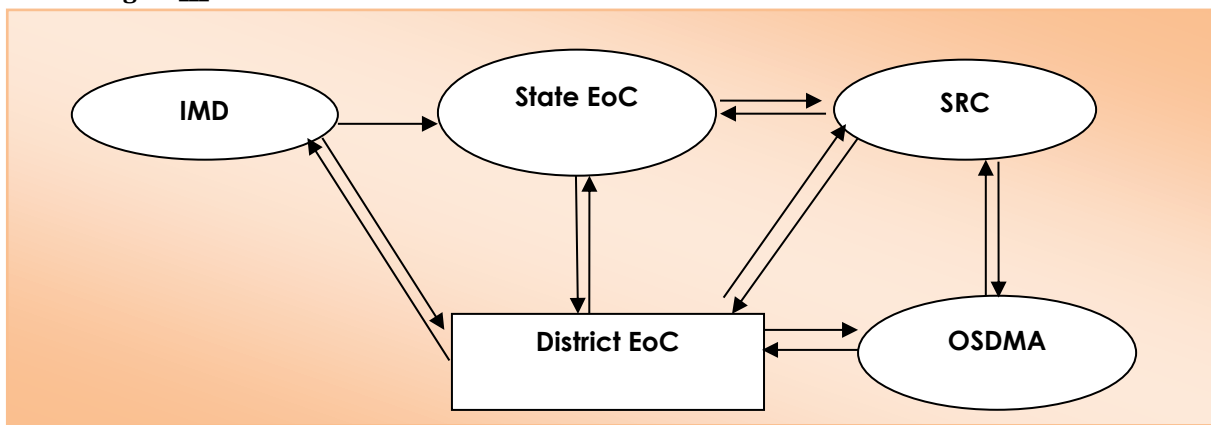
Sl. No.	Name of the Institutions	Name of the Chief Coordinator of the Organization	Designation	Contact Number	Alternate Contact Number	Number of Volunteers
1	Civil Defence		Deputy Controller, Civil Defense		<a href="mailto:civildefencebbsr@gmail.com">civildefencebbsr@gmail.com</a>	
2	Home Guards	Shri. Prateek Singh, IPS	Superintendent of Police cum Commandant Home Guards, Puri	06752-225400	<a href="mailto:sppri.odpol@nic.in">sppri.odpol@nic.in</a>	
3	National Service Scheme (NSS)	Dr. Pyari Mohan Patnaik	Programme Coordinator	06752-251660		1800
4	National Cadet Corps (NCC)					
5	Nehru Yuva Kendra (NYK)	Mr. Jay Shankar Joshi	District Youth Coordinator	9853761472		
6	Red Cross	Ms. Manisha Sarangi	Secretary District Red Cross Branch	8551099770		157
7	NGOs					
8	VOs					

#### 4.13 Emergency Communication System

##### 4.13.1 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\_\_:** Information flow chart from SEOC to Districts



#### 4.13.2 District Emergency Operation Centers (DEOC)

DISTRICT EMERGENCY OPERATION CENTER (DEOC), PURI

TEL: 06752- 223237

Email id: [deocpuri.od@gov.in](mailto:deocpuri.od@gov.in) and [emergencypuri@yahoo.in](mailto:emergencypuri@yahoo.in)

Address: Collectorate Building, Puri.

Ms. Manisha Sarangi, OAS- I (JB), Dy. Collector, Emergency is in charge of Emergency Section w.e.f 01.08.2024. The DEOC landline no is 06752-223237 is also connected with Fax. Apart from this 1077 toll free number is also available in the DEOC, Puri. The DEOC is equipped with all communication equipment along with the Rescue & Search kits which includes: Mobile, Satellite Phone, Thermometer, Lifebuoy, Life Jackets, stretcher, Cutter, Inflatable Tower Light, Siren and Search Light etc. which is regularly checked by the service providers/engineers by the State Nodal Agency OSDMA.

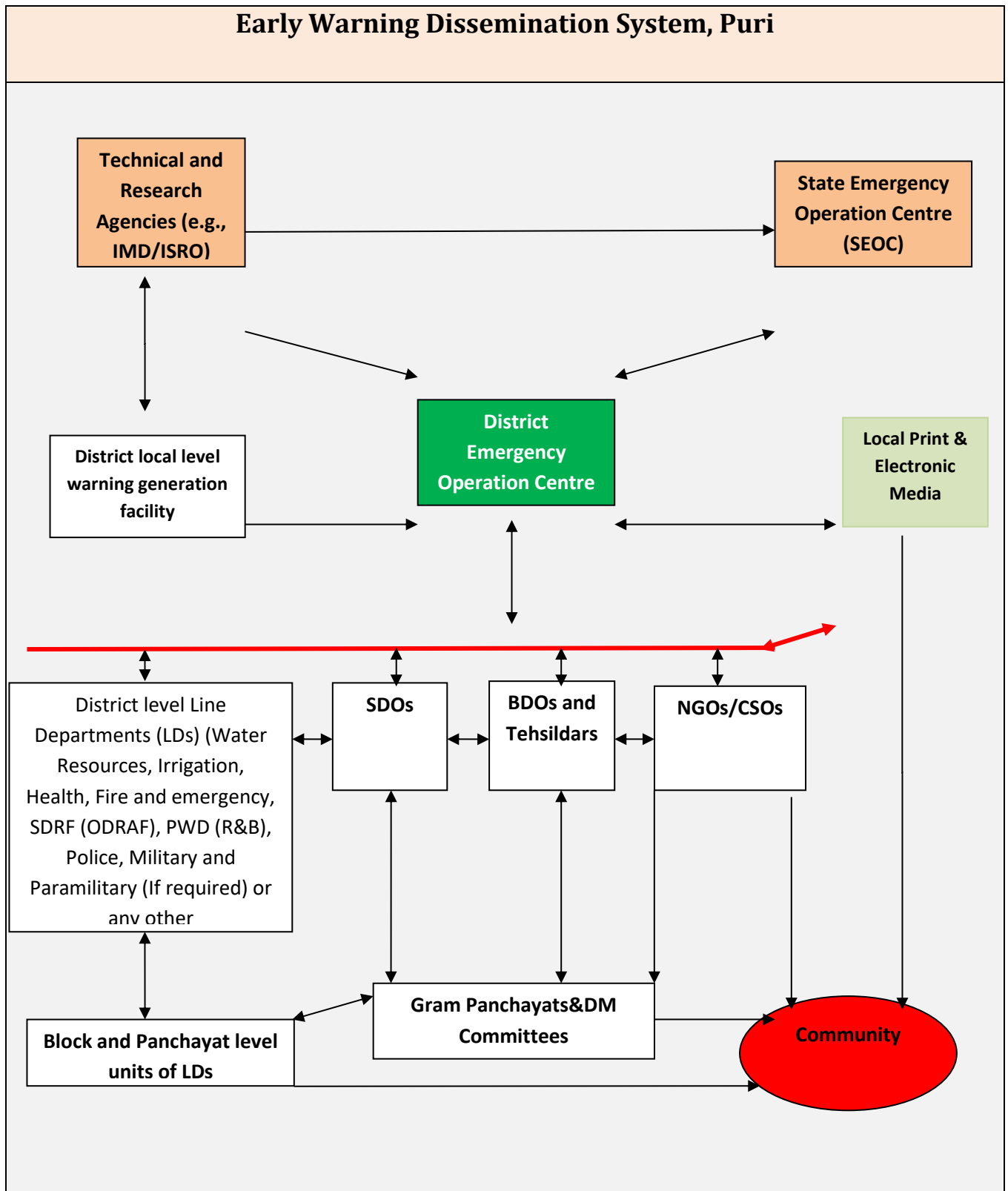
DEOC, Puri ensuring the following: -

- Implementation of all policies and plans of state govt.
- Implementation of all NDMA guidelines
- Implementation of all instructions of Revenue & Disaster Management department
- Department should ensure that all schemes based on the parameters of mitigation, relief and rehabilitation to be identified and implemented
- Implementation of all guidelines/ instructions related to disasters from GoI and state govt.
- All officers to be trained in Disaster Management.
- Implementation of National bylaws
- Implementation of Fire-safety bylaws
- Implementation of all on-site plans of the respective industries
- functionality of Emergency operation Center (EOC), Puri
- Co-ordination with the different deptts. in the district.
- Preparation of DDMP and SoPs.
- Mock Drill
- MFS/MCS monitoring and Mock Drill
- Training & Capacity Building
- Co-ordination with state level agency i.e OSDMA,Bhubaneswar.

- Conducting GO-NGO co-ordination meeting
- Compensation to the victims and ex-gratia assistance during Natural Calamity as per the SRC norms
- Early Warning –Pre, During and Post

**DISTRICT CONTROL ROOM**

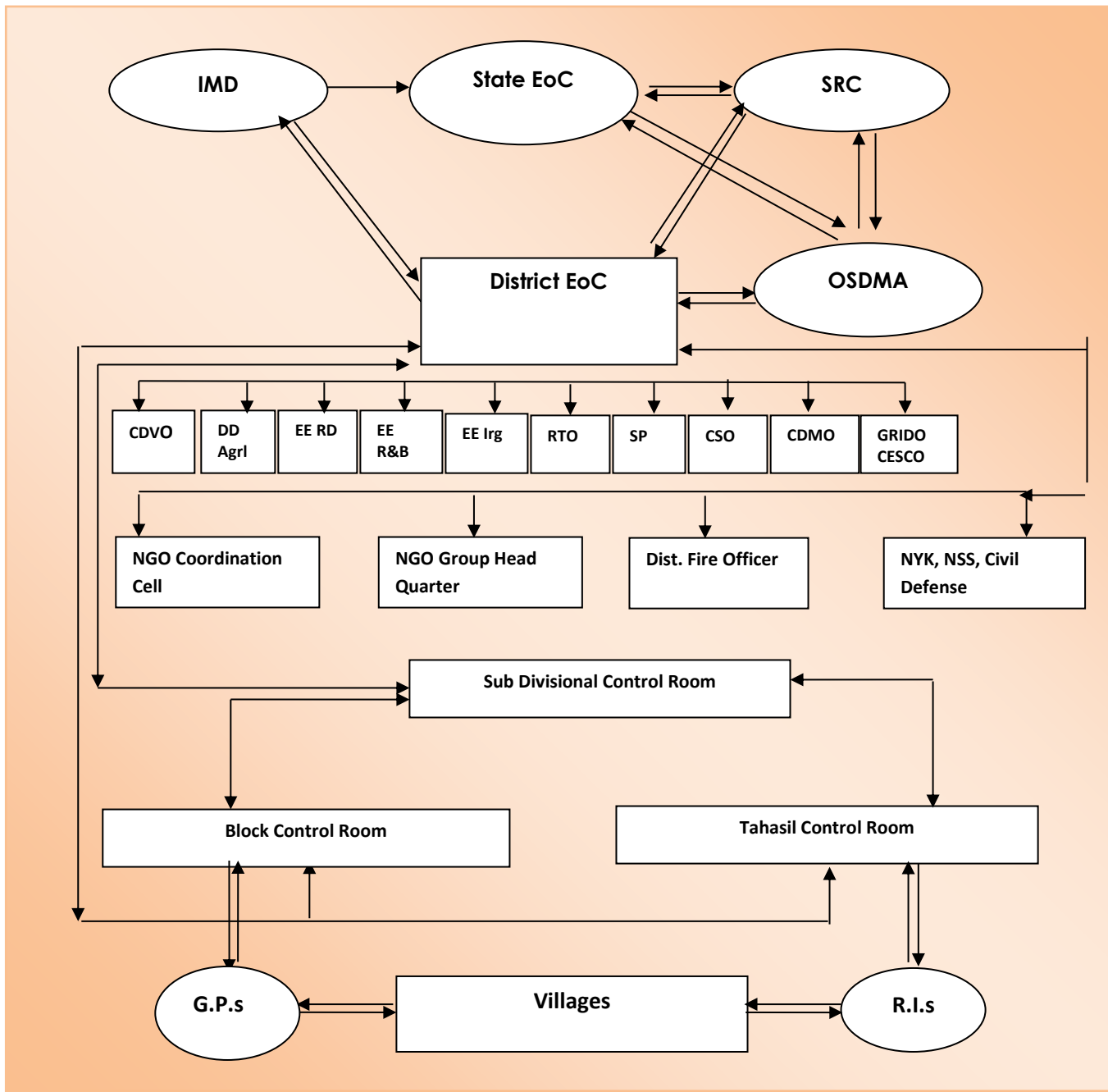
Check	District Control Room
	Vulnerability map of the Block.
	Resource Inventory, Capacity analysis.
	List of cut off areas with safe route map for communication.
	List of storage facilities, dealers of food.
	Control room setup / assignment of control room duty.
	Pre-positioning of staff for site operation centers.
	Arrangement of alternative communication/generator sets etc.
	Arrangement of vehicles of for evacuation.
	Dissemination of warning / coordination with District control room



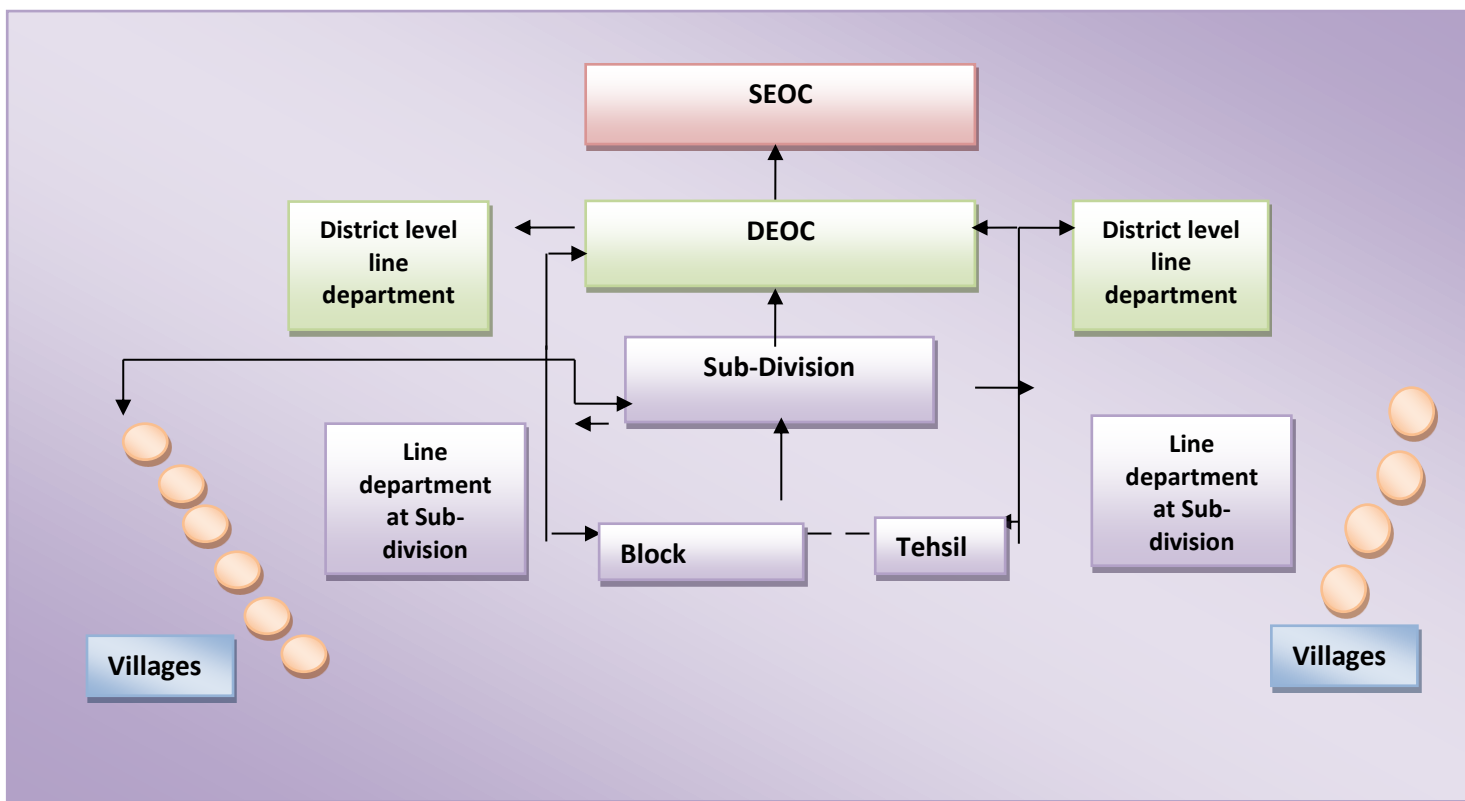
**Table: 3 Equipments provided to DEoC and their operational status**

Sl No.	Equipments	Unit	Status		Remarks
			Operational	Non-Operational	
1	Desktop Computer	06			
2	Laser Printer	02			
3	UPS	05			
4	Scanner	01			
5	Fax	01			
6	Ink Jet Printer	00			
7	Multi Utility Machine (Printer, Scanner, Fax, copy)	02			
8	Laptop	01			
10	LCD Projector	01		Non-Operational	
11	Photocopier	00			
12	GPS Unit	00			
13	Satellite Phone	01			
14	VHF Sets	01		Non-Operational	
15	VHF Mobile Station	01		Non-Operational	
16	Walkie-Talkie (VHF hand Set)	01		Non-Operational	
17	Portable Diesel Generator	01		Non-Operational	
18	Inverter with Battery	01			
19	Inflatable Tower Light	00			
20	Power Saw	01		Non-Operational	
21	Life Jacket	04			
22	Life Buoy	04			
23	Aluminum Ladder	00			
24	Fire Extinguisher	02		Non-Operational	
25	Siren	01			
26	Megaphone	00			
27	Colour TV/Stand	00			
28	Mobile Phone	00			
29	Display Board	00			
30	White Broad	01			
31	Computer Table/Chair	00			
32	Rack	00			
33	Book Case	00			
34	GI Trunk	08			
35	Commando Search Light	01		Non-Operational	
36	Steel Almirah	02			

Figure\_: Information flow chart from District Emergency Operation Center (DEoC) to Villages with early warning



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



#### 4.13.3 Block Emergency Operation Center (BEoC)

There are 11 Block Emergency operation Centres in all 11 Blocks of the district which acts as bridge between district to community level in all disaster management activities of the district.

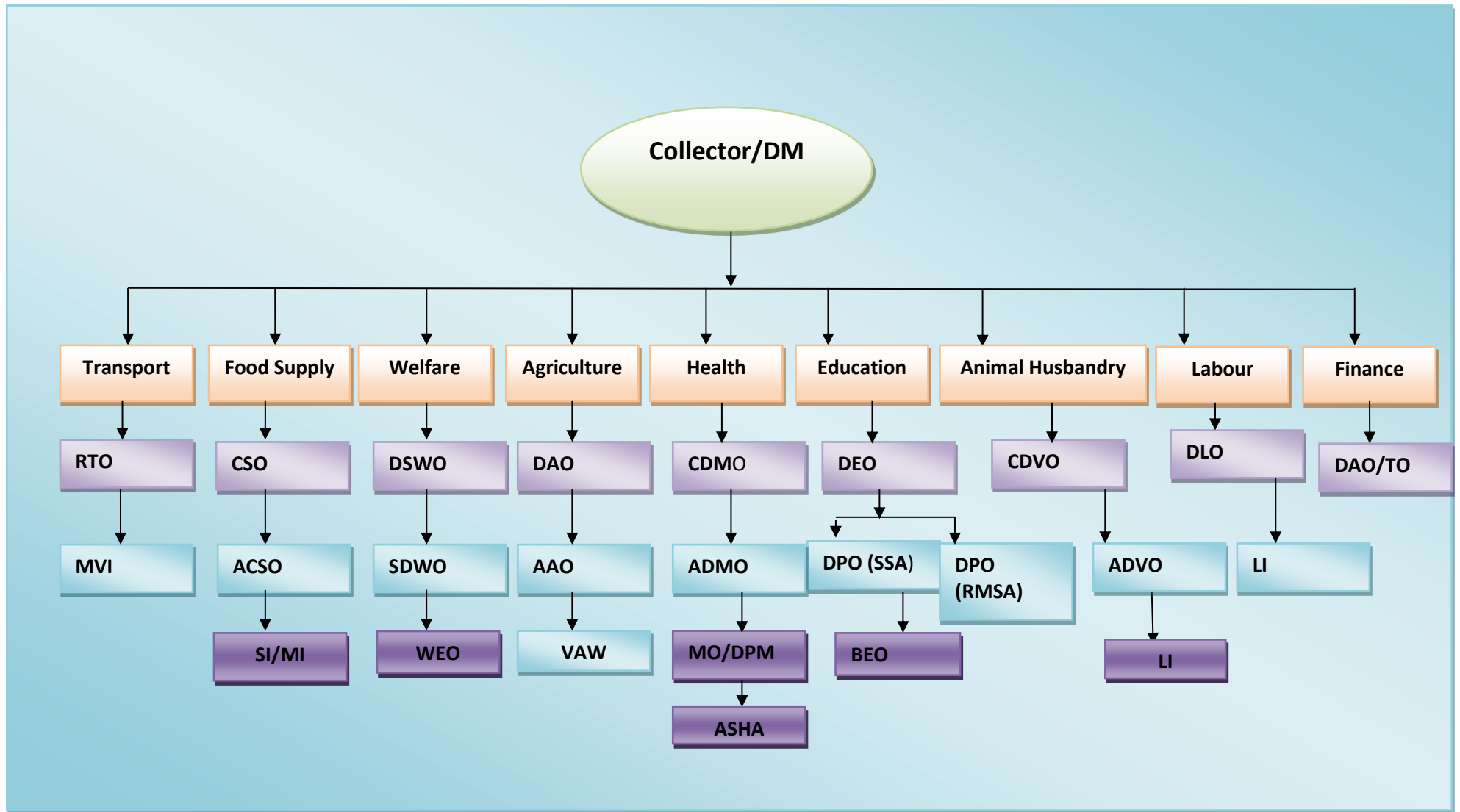
**Table\_ Important Line Departments at the Block**

Sl No.	Department	Block/ ULB	CHC	Name of the Nodal Officer	Contact No.
1	Health	Satyabadi	Algum CHC	Dr. Biswajit Mishra	9439993765, 6371077727
2	Health	Satyabadi	Satyabadi CHC	Dr. Biswajit Mishra	9439993765, 6371077727
3	Health	Astranga	Astarang CHC	Dr. Sanjay Kumar Pradhan	9439871822
4	Health	Kakatpur	Bangurigaon CHC	Dr. Ashis Mohapatra	9439994721, 9437081902
5	Health	Pur Sadar	Chandanpur CHC	Dr. Prasant Kumar Nayak	9439994722,
6	Health	Nimapada	Charichhak CHC	Dr. Prasant Kumar Samantray	9439994724
7	Health	Nimapada	Nimapara CHC	Dr Kshyamanidhi Sethy	9439994000
8	Health	Krushnaprasad	Chilika Nuapada CHC	Dr. Santosh Kumar Behera	9439994723

9	Health	Krushnaprasad	Krushnaprasad CHC	Dr Sugyani Maharana	7978469162
10	Health	Delang	Delang CHC	Dr. Santosh Tripathy	9439994018
11	Health	Gop	Gop CHC	Dr. Yasmin Afroz	9439994726, 9437357313
12	Health	Kanas	Kanas CHC	Dr. Soubhagya Ranjan Jena	9556600651
13	Health	Pipili	Mangalpur CHC	Dr. Binay Kumar Panda	9439994728
14	Health	Pipili	Pipili CHC	Dr.Abinash Ratha	8260344744
15	Health	Pipili	Panidola CHC	Dr S Lekhraj	7008455651
16	Health	Brahmagiri	Rebana Nuagaon CHC	Dr. Pranab Prakash Purna	9437258526
17	Health	Puri MPL	IDH	Dr. Ganesh Prasad Dash	9437051408

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

4.14 Coordination structure at the District level and down the line



#### 4.15 GO-NGO Coordination before and after disaster in the district

The Go-NGO Co-ordination Cell is very actively participating in the disaster smart development initiatives i.e. preparedness, planning and prevention. SOLAR a leading NGO of Konark under Gop, Puri is the coordinating agency of the district for the Go-NGO cell. Each block is equally represented by the NGOs who have active participation in community development and disaster planning activities. The cell always plays a proactive role in the Mock Drill, Disaster Planning, Early Warning Dissemination, Training and Capacity Building, Planning with Community, Management and supportive services in the MCS and MFS in the district. The Dy. Collector Emergency is the Nodal Officer and member convener of the Go-NGO cell.

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

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

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

Table\_Contact Details of Private emergency services

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

#### 4.18 Multi Purpose Cyclone Shelters (MCS) in the district

a) *(GIS Maps for location of MCS may be incorporated)*

b) *(Details of Cyclone Shelter Management and Maintenance Committee (CSMMC) may be incorporated)*

#### List of flood and cyclone shelters of Puri district constructed by different agencies

##### PMNRF

Sl. No.	Block	Village/ Panchayat	Name of the cyclone shelters	Plinth Area in Sq. Ft	Funding Agency
1	Astrang	Astaranga	Astaranga H.S.	2000	PMNRF
2		Naiguan	B.D. High School	2000	PMNRF
3		Bantilo, Korana	Bantilo HS	2000	PMNRF
4		Patalada	Patalada HS	2000	PMNRF
5		Edabansa, Talada	Padhihari Bidyapitha	2000	PMNRF

6		Jhadaling,Nuagarh	Jhadalinga HS	2000	PMNRF
7		Sundar , Chhuriana	Sundar HS	2000	PMNRF
8	Brahmagiri	Mudirath, Badabenakudi	Govt. HS	2000	PMNRF
9		Bentapur	B.K.Girls' HS	2000	PMNRF
10		Sunamuhin,Gadarotanga	Krushak Bidyapitha	2000	PMNRF
11		Gorual	Palakeswari HS	2000	PMNRF
12		Kapileswarpur	A J Das Bidyapitha	2000	PMNRF
13		Rahadmalla	Brundaban HS	2000	PMNRF
14		Gadokokala, Raibidhar	Gadokokala HS	2000	PMNRF
15	Gop	Gadajhinkiria, Achutpur	Kochileswar HS	2000	PMNRF
16		Dihuda	Nilakantheswar HS	2000	PMNRF
17		Dasbatia, Banakhandi	Dasbatia HS	2000	PMNRF
18		Jaunlipokhari, Baniasahi	Rusipada HS	2000	PMNRF
19		Chadheigaon	Sri J N HS	2000	PMNRF
20		Balia	S N Bidyapitha	2000	PMNRF
21		Dalanai. BAntaligram	Bantaligram Panchayat HS	2000	PMNRF
22		Kursipanchan	Dasabandhu HS	2000	PMNRF
23		Birtunga	Saraswati Bidyapitha	2000	PMNRF
24		Chhaitana	HCM HS	2000	PMNRF
25		Nayahat, Dhumalo	Nayahat HS	2000	PMNRF
26		Erabanga	Erabanga HS	2000	PMNRF
27		Ganeswarpur	Ganeswarpur HS	2000	PMNRF
28		Gop	Girls' HS	2000	PMNRF
29		Gop	NN HS	2000	PMNRF
30		Konark NAC	Konark HS	2000	PMNRF
31		Orei, Mahakalapada	Jogeswari Bidyapitha	2000	PMNRF
32		Olandi,Rahanagorada	UG HS	2000	PMNRF
33		Anasara, Simili	Rudrani HS	2000	PMNRF
34		Sutan	Balikapileswar HS	2000	PMNRF
35		Sutan	Sutan HS	2000	PMNRF
36	Kakatpur	Balidokan, Kurajunga	Bateswar HS	2000	PMNRF

37		Chitreswari, Abadan	Chitreswari HS	2000	PMNRF
38		Patapur, Kundhei	Barunei HS	2000	PMNRF
39		Bijapur, kundhei	Bajapur HS	2000	PMNRF
40		Lataharana	Lataharan HS	2000	PMNRF
41		Kakatpur	Kakatpur Girls' HS	2000	PMNRF
42		Mahadevbasta	Trilochanpur HS	2000	PMNRF
43		Bhandisahi	UGMS Bidyapitha	2000	PMNRF
44		Bangurikan	Bangurigan Girls' HS	2000	PMNRF
45		Bangurigan	Birabhadra Bidyapitha	2000	PMNRF
46	Kanas	Adalbadal	Kulamani Bidyapitha	2000	PMNRF
47		K. Khani	Kaduaghat Academy	2000	PMNRF
48		Khandahota	AGC Bidyapitha	2000	PMNRF
49		Gadisagoda	Gopinath HS	2000	PMNRF
50		Karamala	SA Bidyapitha	2000	PMNRF
51		Gadakharada	Sri Chandaneswar HS	2000	PMNRF
52	Krushnaprasad	Badajhad	Kamaleswar Bidyapitha	2000	PMNRF
53		Parikud	PLC Bidyapitha	2000	PMNRF
54		C.Nuapada	Narayani Bidyapitha	2000	PMNRF
55		Panaspada	Harihar Bidyapitha	2000	PMNRF
56		Gambhari	Dwarsuni Bidyapitha	2000	PMNRF
57		Nandala	Dr. MM HS	2000	PMNRF
58		B.Nuagaon	Basudev HS	2000	PMNRF
59		Ora, Siandi	Sansima HS	2000	PMNRF
60	Purisadar	Biraharekrushnapur	Biraharekrishnapur HS	2000	PMNRF
61		B.N. Pur	Bhargavi HS	2000	PMNRF
62		Baliguali	S.B. HS	2000	PMNRF
63		Baliput	Panchayat HS	2000	PMNRF
64		Bira P. Pur	Bhargavi Girls' HS	2000	PMNRF
65		Chalisbasta	Katyayani HS	2000	PMNRF
66		K.B.Pur	M.S. HS	2000	PMNRF
67		Siruli	Mahavir HS	2000	PMNRF
68		Pratap P.Pur	Pratap P Pur HS	2000	PMNRF
69		Puri	Bholanath Bidyapith	2000	PMNRF
70		Puri	Biswambar Bidyapith	2000	PMNRF
71		Puri	GBP Hadagadasahi HS	2000	PMNRF
72		Puri	Gadadhar HS	2000	PMNRF
73		Puri	K.D. High School	2000	PMNRF
74		Puri	Govt. Girls' HS	2000	PMNRF
75		Puri	Police HS	2000	PMNRF
76		Puri	Zilla HS	2000	PMNRF

77		Puri	S.M. Girls' HS	2000	PMNRF
78		Puri	Samagera HS	2000	PMNRF

**CMRF**

79	Astarang	Athatira	Aisaneswar Bidyapitha	2125	CMRF (executed by IDCO)
80	Brahmagiri	Khajuria	Balunkeswar Bidyapitha	2125	CMRF
81	Delanga	Delanga	Govt. Girls High School	2125	CMRF
82	Gop	Gadabangar	Govt. HS	2125	CMRF
83	KakatPur	Kakatpur	Govt. HS	2125	CMRF
84	Kanas	Jharada, Radhakrishnapur	UG High School	2125	CMRF
85	Krushnarpasad	Alupatna	Chilika HS	2125	CMRF
86	Nimapara	Bamanala	Bamanala HS	2125	CMRF
87	Pipili	Gobindpur	Gobindpur HS	2125	CMRF
88	Puri sadar		Charishree HS	2125	CMRF
89	Satyabadi	Sukal	Trutiyadev Bidyanketan	2125	CMRF

**German KFW/IRCS**

90	Astarang	Nagar	MPCS	1750	German KFW/ IRCS
91		Nuagarh	MPCS	1750	German KFW/ IRCS
92	KakatPur	Tentulia	MPCS	1750	German KFW / IRCS
93	Astarang	Kania	Nasikeswar U.P. School	1550	IRCS
94	Astarang	Kania	Saraswati Academy	1550	IRCS

**CARE**

95	Astarang	Udaypur, Korana	Udaypur HS	1952	CARE
96	Astarang	Sudhikeswar`	Churiana MPCS	2636	CARE
97	Astarang	Korana	Korana MPCS	2636	CARE
98	Astarang	Sisua	Belanga MPCS	1952	CARE
99	Astarang	Patalada	Timora MPCS	1952	SDC (executed by CARE)

100	Astarang	Deruna, Naiguan	Deruna P.S./M.E. School	1952	SDC (executed by CARE)
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**SDC (executed by LWS)**

101	Astarang	Anakana, Chhuriana	Pipra Pry. School	2317	SDC (executed by LWS)
102	Gop	Ogalpur, Badatara	Ogalpur M.E. School	2317	SDC (executed by LWS)
103	Gop	Simuli	Nuagan HS	2317	SDC (executed by LWS)
104	Gop	Birtunga	Garhkarmal HS	2317	SDC (executed by LWS)
105	Gop	Desthali	Suhanasasan HS	2317	SDC (executed by LWS)

**OJS & XIMB**

106	Astarang	Birudi pantala	MPCS	630	OJS & XIMB
107	Astarang	Dakhinapantala	MPCS	630	OJS & XIMB
108	Astarang	Balipantala	MPCS	630	OJS & XIMB
119	Astarang	Nua Kaliakana	MPCS	630	OJS & XIMB
110	Astarang	Madhupur	MPCS	630	OJS & XIMB
111	Astarang	Nampur	MPCS	630	OJS & XIMB
112	Astarang	Jhadaling	MPCS	630	OJS & XIMB
113	Astarang	Damasuna	MPCS	630	OJS & XIMB
114	Astarang	Bahudiha	MPCS	630	OJS & XIMB
115	Astarang	Gandalaba	MPCS	630	OJS & XIMB

**ENRON & XIMB**

116	Astarang	Balidiha	MPCS	630	ENRON & XIMB
117	Astarang	Sribantapur	MPCS	630	ENRON & XIMB

**NFCR/CRF**

118	Brahmagi ri	Brahmagiri	Brahmagiri H.S.	2227.77	NFCR/CRF
119	Brahmagi ri	Rebana Nuagan	Rebana Nuagaon HS	2227.77	NFCR/CRF
120	Delanga		Sadangoi HS	2227.77	NFCR/CRF

121	Delanga	Delanga	Mahatab HS	2227.77	NFCR/CRF
122	Delanga	Station Bazar	R.K. Bidyapitha	2227.77	NFCR/CRF
123	Delanga	Gangapur Patana	R.M. Bidyapitha	2227.77	NFCR/CRF
124	Nimapara	Balanga	86ota86za Girls' HS	2227.77	NFCR/CRF
125	Nimapara	Amareswar	Amareswar HS	2227.77	NFCR/CRF
126	Kanas	Kanas	Govt. HS	2227.77	NFCR/CRF
127	Kanas	Olhan	G.B. HIGH SCHOOL	2227.77	NFCR/CRF
128	Pipili	Dandmukundpur	G.M. HIGH SCHOOL	2227.77	NFCR/CRF
129	Pipili	Kanti	Kanti G.P. HS	2227.77	NFCR/CRF
130	Pipili	Sampur	Astasambhu HS	2227.77	NFCR/CRF
131	Pipili	86ota Sahi	Utkalmani S Bidyapitha	2227.77	NFCR/CRF
132	Puri sadar	Sundar	Tarayan HS	2227.77	NFCR/CRF
133	Puri sadar	Sasan damodarpur	Ramahari Bidyapitha	2227.77	NFCR/CRF
134	Satyabadi	Satyabadi	Raichakradharpur HS	2227.77	NFCR/CRF
135	Satyabadi	Gabakunda	Jayadurga HS	2227.77	NFCR/CRF

#### MPLAD

136	Gop	Nagapur	Nagarpur HS	3347	MPLAD
137	Pipili	Pipli	Jawahar Bidyapitha	3228	MPLAD
138	Pipili	Pipli	Pipli HS	3196	MPLAD
139	Puri sadar	Chandanpur	MG Hogh School	3648	MPLAD
140	Satyabadi	Sakhigopal	Satyabadi HS	3207	MPLAD
141	Delang	Gadamotari	Biswanath Dev HS		MPLAD
142	Nimapara	Balanga	Govt. HS Balanga		MPLAD

#### UNICEF

143	KakatPur	Bangurigan Pr.S.	Bangurigan Pr. S.		UNICEF
144	KakatPur	Lataharana	Amunihapayna Pr.S.		UNICEF
145	KakatPur	Othaka	Somnathpur Pr. S.		UNICEF

#### R.K.Math

146	KakatPur	Chitreswari	Kotanga Pr. S.	1380	R.K. Math
147	KakatPur	Chitreswari	Nilakantheswar MES	2269	R.K. Math

#### OSDMA

148	Krushnaprasad	Satapara	Satapada Village	2000	OSDMA
149	Krushnaprasad	Arakhakud a	Manikpatna Village	3000	OSDMA
150	Krushnaprasad	Arakhakud a	Gopinathpur Village	2000	OSDMA
151	Krushnaprasad	Siandi	Siandi villaje	1000	OSDMA
152	Krushnaprasad	Bajrakot	Talatala Village	1000	OSDMA

153	Krushnaprasad	Ramalenka	Kumarpara Village	1000	OSDMA
154	Krushnaprasad	Panaspada	Panaspada Village	3000	OSDMA
155	Krushnaprasad	Berhampur	Berhampur Village		OSDMA
156	Krushnaprasad	Malud	Malud Village		OSDMA
157	Krushnaprasad	Nuapada	Nuapada Village		OSDMA
158	Astarang	Talada	Talada Village		OSDMA
159	Brahmagiri	Ambapada	Ambapada Village		OSDMA
160	Kakatpur	Abadan	Singarpal Village		OSDMA
161	Puri sadar	Baliguali	Beladala Village	1000	OSDMA
162	Puri sadar	Baliput	Baliput Village		OSDMA
163	Puri sadar	Puri Municipality	Penthakota		OSDMA

**Govt. of Maharashtra**

164	Nimapara	Charichhak	Charichhak HS		Govt. of Maharashtra
165	Nimapara	Thakurpatna, Kalapanchan	Ratnapur HS		Govt. of Maharashtra

**List of Multipurpose Cyclone Shelter (MCS) & Multipurpose Flood Shelter (MFS), Puri**

Sl. No.	Block	GP	Village	Location	MCS/MFS
1	Astarang	Alasahi	Asana	Public Place, In the middle of village (near Somanath Temple)	MCS
2	Astarang	Alasahi	Patasundarpur	Patasunderpur UP School	MCS
3	Astarang	Kendrapati	Namaro	School Premises	MCS
4	Astarang	Kendrapati	Kendrapati	Kendrapati M.E. School	MCS
5	Astarang	Korana	Ratanpur	School Premises	MCS
6	Astarang	Korana	Bantilo	Bantilo ME School	MCS
7	Astarang	Korana	Bandarikaral	Community place, Infront of Pala Mandap	MFS

8	Astarang	Nagar	Dihakarada	Community place, infront of Dihakarada Primary School	MCS
9	Astarang	Nagar	Kaliakana	Tandahara Primary school	MCS
10	Astarang	Nagar	Balipantala	Community place, Infront Bhagabata Ghara	MFS
11	Astarang	Naiguan	Khandasahi	Swapneswar Deva M E School	MCS
12	Astarang	Jhadalinga	Madhupur	Madhupur ME School	MCS
13	Astarang	Saripur	Kundeswar	School Premises	MCS
14	Astarang	Saripur	Mudugal	School Premises	MCS
15	Astarang	Sisua	Keutajanga	Keutajanga ME School	MCS
16	Astarang	Sisua	Tandahar	Sahan ME School	MCS
17	Astarang	Talada	Talada	Near ME School	MCS
18	Brahmagiri	Ambapada	Barajanga	Barajanga UP School	MCS
19	Brahmagiri	Ambapada	Narasinghpatna	Narasinghpatna Village end	MCS
20	Brahmagiri	Badabenakudi	Badabenakudi	Kalika Bidyapitha, Badabenakudi	MCS
21	Brahmagiri	Bentapur	Matamatpur	Comminity land, Matamatpur Village, Near to Sanskrit Womens College (Shanti Dham)	MCS
22	Brahmagiri	Bentapur	Satikapuri (Nagochhia Chaka)	Near Bapuji High School.	MCS
23	Brahmagiri	Brahmagiri	Badabandhakera	Inside the Primary school, Badabandhakera	MCS
24	Brahmagiri	Brahmagiri	Sanabandhakera	Near Sanabandhakera UP School,	MFS

25	Brahmagiri	Brahmania	Brahmania	In the last of the village on community land (near GP office & Rajiv Gandhi Seva Kendra)	MCS
26	Brahmagiri	Champamanik	Champamanik	Bhimeswar Bana Bidyalaya	MCS
27	Brahmagiri	Dharanikudi	Dharanikudi	UP School Dharanikudi	MCS
28	Brahmagiri	Dimirisena	Dimirisena	Near Dimirisena Pry. School & Anganwadi Center	MCS
29	Brahmagiri	Dimirisena	Ramachandrapur	Near Balukeswar Temple, Ramachandrapur	MCS
30	Brahmagiri	Ambapada	Balabhadrapur Patna	Near village Anganwadi center	MCS
31	Brahmagiri	Gorual	Gorual	Near ANM sub-center	MCS
32	Brahmagiri	Kahalpada	Kahalpada	Bhagabati Bidyapitha, Kahalpada	MCS
33	Brahmagiri	Kapileswar Pur	Chaturthasa (Kapileswarpur Part-4)	Kapileswarpur Part-4 Kendra UP School	MCS
34	Brahmagiri	Ambapada	Toran	Community land, Toran Village	MCS
35	Brahmagiri	Kapileswar Pur	Kankuda	Community land, near ANM center	MCS
36	Brahmagiri	Kapileswar Pur	Amuri Banastapada	Community land	MFS
37	Brahmagiri	Kusubenti	Jagadala	In the Village	MCS
38	Brahmagiri	Kusubenti	Golara	Adjacent to Golara High School	MCS
39	Brahmagiri	Manapada	Srikat Nuapada	UP School, Srikat Nuapada	MCS
40	Brahmagiri	Manapada	Manapada	Manapada Pry. School	MCS
41	Brahmagiri	Manapada	Goudabandha	Adjacent to Goudabandha Project Pry. School.	MCS

42	Brahmagiri	Manapada	Bidurabanka	Adjecent to Bidurabank Primary School and ANM center of Bidurabanka	MCS
43	Brahmagiri	Manapada	Chottapur	Chotapur U.Pry. School	MCS
44	Brahmagiri	Ghatakudi	Ghatakudi	Community land & beginning of the village (nearer to primary school)	MCS
45	Brahmagiri	Raibidhar	Tiarapari	Middle of the village near Maa Narayani Temple & Pry. School	MCS
46	Brahmagiri	Raibidhar	Bhandarikuda	Insite the village at community land, nearer to Rajiv Gandhi Seva Kendra	MCS
47	Brahmagiri	Palanka	Palanka	Bali Harachandi Bidyaniketan, Palanka	MCS
48	Brahmagiri	Talamala	Talamala	Bhargabi Bidya Niketan, Talamala	MCS
49	Delanga	Abhayamukhi	Indupur Deuli	Indupur Deuli, adjacent to Acharya Harihar Smruti Mohavidyalaya	MFS
50	Delanga	Dhanakera	Dhanakera	Kapileswar High School	MFS
51	Delanga	Gualipada	Gudupailo	UG ME School	MFS
52	Delanga	Kalyanpur	Kalyanpur	Adjacent to Pradipta Moharathy Girls High School,	MFS
53	Gop	Achutpur	Achutpur	Achutpur UGME School	MCS
54	Gop	Badagaon	Gaudasahi (Bhuan)	Basudev Nodal U.G.M.E. School	MCS
55	Gop	Badatara	Badatara	Badatara UP School	MCS

56	Gop	Baniasahi	Inchola	Entrance of the village at community place.	MCS
57	Gop	Baniasahi	Baniasahi	Near Baniasahi High School	MCS
58	Gop	Bantaligram	Bantaligram	Bantaligram School premises	MCS
59	Gop	Bantaligram	Tarahana	Near Tarahana UGME School	MCS
60	Gop	Ganeswarapur	Galadari (Ganeswarapur)	Community place near Maa Khetrapali Pitha	MFS
61	Gop	Khalkata Patana	Tikana (Hamlet Of Khalkata)	Tikina U.P. School	MCS
62	Gop	Konark N.A.C.	Chandrabhaga (Konark)	Project U.P.School, Chandrabhaga	MCS
63	Gop	Kuampada	Sujanagar	Sujanagar Primary School	MCS
64	Gop	Mahalapada	Kundisha	Adjoining to School building	MCS
65	Gop	Mahalapada	Sarada	Sarada UP School	MCS
66	Gop	Mahalapada	Ambiligaon	Community land	MCS
67	Gop	Mahalapada	Mandapokhari	Near Kopara Primary School	MCS
68	Gop	Simili	Kantijhadi (Khatighari)	Paikara UP School	MCS
69	Gop	Sorabha	Aingol	Community land and Near Aingol primary school	MCS
70	Gop	Sorabha	Durgapur	Near Project Primary school, Durgapur	MCS
71	Gop	Tarakor	Bangar	Bangara UP School	MCS
72	Kakatpur	Abadan	Singarpal	Primary School	MCS
73	Kakatpur	Bangurigan	Chhotipada	Chhotipada UP School	MCS
74	Kakatpur	Jaleswarpada	Runkei	Runkei Primary School	MCS

75	Kakatpur	Jaleswarpada	Sukapokhari (Jaleswarpada)	Sukapokhari Primary School	MCS
76	Kakatpur	Kadua	Dhanitri	Nilakantheswar UP School	MCS
77	Kakatpur	Kundhei	Haridaspur ( Hamlet Of Pitamberpur)	Haridaspur Pry School	MCS
78	Kakatpur	Kurujanga	Adhual	Jamadharm ME School	MCS
79	Kakatpur	Suhagpur	Suhagpur	Near Suhagpur Primary School	MFS
80	Kanas	Alibad	Alibad	At the village end, nearer to village pond & RD road.	MCS
81	Kanas	Badal	Badaora	Adjacent to Utara Chilika Nodal U.P School Badaora	MFS
82	Kanas	Baku	Baku	In front of Baku High School & nearer to Panchayat Office	MCS
83	Kanas	Chupuringi	Kaudiapur, Chupring	Adjacent to Chupring Police Outpost.	MFS
84	Kanas	Chupuringi	Chupuringi	Near Grampanchayt High School, Chupuringi	MCS
85	Kanas	Deipur	Deipur	Adjanct to Deipur Primary School	MCS
86	Kanas	Gadakharad-1	Gadakharad-1	Community land nearer to Homeopathy dispensary, Gadakharad	MCS
87	Kanas	Deipur	Telangapada	Adjacent to High School	MFS
88	Kanas	Gadasahi	Jankia Gadasahi	Jankia Gadasahi High School	MFS

89	Kanas	Gopinathpur	Kalapadar	Dadhibhadra UP School	MCS
90	Kanas	Gopinathpur	Gopinathpur	Adjacent to Gopinathpur Pry. School	MCS
91	Kanas	Gopinathpur	Paikamara-2	In the end of the village & near Pond	MCS
92	Kanas	Gopinathpur	Jagulaipadar	Near Jagulaipadar Nodal Upper Primary School and Siva temple	MCS
93	Kanas	Gadishagada	Nuagaon	Beginning of the village and nearer to Nuagaon Primary School	MCS
94	Kanas	Jamalgoda	Basantpur	Near Basantapur High School	MCS
95	Kanas	Jamalgoda	Jamalgoda	Near Mahanta Ramachandra M.E School Jamalgoda	MFS
96	Kanas	Kadua	Kadua	Over community land and adjacent to Kadua Primary School	MCS
97	Kanas	Kadua	Sahaspur	Inside School Campus (H.S) Gatiswar Vidyapeetha.	MCS
98	Kanas	Kadua	Sunakhala	Adjacent to RWSS overhead water tank	MFS
99	Kanas	Khandahata	Khandahata	Near U.P.School, Khandahata	MFS
100	Kanas	Khandahota	Mulabasanta	Mulabasanta Primary & High School	MCS
101	Kanas	Sahupada	Anjira	inside village, nearer to Anjira Primary School	MCS
102	Kanas	Sahupada	Bedha Tandula	Near Bedhatandul Pry. School	MCS
103	Kanas	Sahupada	Jaliapada	300mtr from Jaliapada Primary School, boarder of Mz village, Balipada.	MCS

104	Krushnaprasad	Alanda	Jamuna	Primary School	MCS
105	Krushnaprasad	Alanda	Alanda	Alanda high school	MCS
106	Krushnaprasad	Arakhakuda	Arakhakuda (Manikapatna)	Manikpatna UGME School, Arakhakuda	MCS
107	Krushnaprasad	Gopinathpur	Gopinathpur	Gopinathpur UGME School	MCS
108	Krushnaprasad	Badaanla	Badaanla	High School	MFS
109	Krushnaprasad	Badajhad	Jenapur	Infront of UP School	MCS
110	Krushnaprasad	Badajhad	Sipia	Sipia U.P. School	MCS
111	Krushnaprasad	Badajhad	Jharkota	Jharkata UP School	MCS
112	Krushnaprasad	Berhampur	Khirisahi	Primary School	MCS
113	Krushnaprasad	Badajhad	Kurupala	Near UP School	MCS
114	Krushnaprasad	Badanala	Khatiakudi	M.E.School, Khatiakudi	MCS
115	Krushnaprasad	Bajrakote	Talatala	Talatala U P School	MCS
116	Krushnaprasad	Bajrakote	Bajrakote	Panchayat High School, Bajarakote	MCS
117	Krushnaprasad	Bajrakote	Udayagiri	Community land in the village	MCS
118	Krushnaprasad	Berhampur	Berhampur	High School	MCS
119	Krushnaprasad	Berhampur	Mahinsa	Manisa U.P.School	MCS
120	Krushnaprasad	Budhibara	Budhibara	Budhibar High School	MCS
121	Krushnaprasad	Gomundia	Gomundia	Gomundia M.E School	MCS
122	Krushnaprasad	Krushnaprasad	Krushnaprasad	Lakhman Chandra High School, Krushnaprasad	MCS
123	Krushnaprasad	Malud	Maluda	High School	MCS
124	Krushnaprasad	Malud	Fatepur	Fatepur U.P.School	MCS

125	Krushnaprasad	Nuapada	Nuapada	High School	MCS
126	Krushnaprasad	Nuapada	Gurubai	M.E.School	MCS
127	Krushnaprasad	Nuapada	Khatisahi	Infront of U P School, Khatisahi	MFS
128	Krushnaprasad	Panaspada	Panaspada	Infront of UP School	MCS
129	Krushnaprasad	Ramalenka	Kumarpur	Kumarpur Primary School	MCS
130	Krushnaprasad	Ramalenka	Ramalenka	Ramalenka M.E. Schhol	MCS
131	Krushnaprasad	Ramalenka	Brahmandeo	Brahmandeo High School	MCS
132	Krushnaprasad	Satapada	Satpada	Infront of Machhyajibi M.E.School	MCS
133	Krushnaprasad (Tahasil- Brahmagiri)	Satapada	Baghamunda	Gadibrahma PUP Schoo,	MCS
134	Krushnaprasad (Tahasil- Brahmagiri)	Satapada	Nuagaon	Entrance of the village (adjacent village Club)	MCS
135	Krushnaprasad	Siala	Morada	Morada High School	MCS
136	Krushnaprasad	Siala	Siala	Siala U.P. School	MCS
137	Krushnaprasad	Siala	Kanheipur	In the middle place of the village (community land)	MCS
138	Krushnaprasad	Siandi	Siandi	Near Primary School	MCS
139	Krushnaprasad	Titipa	Titipa	Near Panchayat Office	MCS
140	Krushnaprasad (Tahasil- Brahmagiri)	Panaspada	Rameswarpur	Primary School Premises	MCS
141	Krushnaprasad (Tahasil- Brahmagiri)	Panaspada	Siara	Adjacent to Siara Pry. School	MCS

142	Krushnaprasad	Titipa	Nuagaon	Community land in the village	MCS
143	Nimapara	Badasubala	Gadatorihan	Gadatorihan High School	MFS
144	Nimapara	Dhanua	Baulapada	Adjacent to Panchayat High School, Baulapada	MFS
145	Nimapara	Sagada	Bada Machhapur	Adjacent to Panchayat Panchabati Bidyapitha	MFS
146	Pipili	Kanti	Kakudia	Near Balukeswar Temple & Anganwadi center, Kakudia	MFS
147	Pipili	Laxminarayanpur	Laxminarayanpur	Swapneswar Deva High School	MFS
148	Pipili	Laxminarayanpur	Bilipada	Primary School, Bilipada	MFS
149	Pipili	Pamasara	Kairi	Arjuneswar Dev Bidyapitha campus	MFS
150	Puri Sadar	Beladala	Beladala	Nuanai Nodal UP School	MCS
151	Puri Sadar	Baliguali	Balukhanda-151	In the hamlet village Balukhanda151 of Baliguali	MCS
152	Puri Sadar	Beladala	Ura	Community land	MFS
153	Puri Sadar	Baliput	Siara	Community land	MCS
154	Puri Sadar	Baliput	Podapoda	Community land near Maa Harachandi Temple	MFS
155	Puri Sadar	Bira Harekrushnapur	Rahangiria	Community land	MCS
156	Puri Sadar	Bira Harekrushnapur	Rendua	Renuda U.P. School	MCS
157	Puri Sadar	Chalishibatia	Kantashila	Kantashila U.P. School	MCS

158	Puri Sadar	Ganganarayanpur	Ganganarayanpur	Harchandi High School Premises	MCS
159	Puri Sadar	Ganganarayanpur	Barabodia (Ganganarayanpur)	Near Budhanath Temple (300 mtr away from Barabodia Jenasahi Primary School)	MFS
160	Puri Sadar	Goudakera	Khandighara, Jalapokhari	Regional Grameswar High School,	MCS
161	Puri Sadar	Hantak	Hantak	Hantuka UG UP School	MCS
162	Puri Sadar	Hantak	Kurunti	At community land, in the beginning of the village and 100 mtr away from the primary school.	MCS
163	Puri Sadar	Jamarsuan	Jamarsuan	Jamarsuan U.P. School	MCS
164	Puri Sadar	Pratap Purusottampur	Krushnajanpur	Primary School Premises	MCS
165	Puri Sadar	Samanga	Kharipada	Nearer to Maa Jageswari Temple	MCS
166	Puri Municipality	Puri Municipality	Penthakata	Bijayananda High School, Sechenvihar , Penthakata, Puri	MCS
167	Satyabadi	Algum	Algum (Malisahi)	Infront of Algum, Mali Sahi U.P.School	MFS
168	Satyabadi	Balarampurgarh	Malasahi (Nuabandhakera Samil)	Adjacent to Pancha Sakha High Scool, Malasahi	MFS
169	Satyabadi	Bidyadharpur	Bidyadharpur	Infront of GP Office, Bidyadharpur	MFS
170	Satyabadi	Sukala	Sukala	Trutiya Deva Bidya Niketan, Sukala	MFS
171	Astarang	Nagar	Nagar		MCS (Redcross)

172	Astarang	Nuagad	Nuagad		MCS (Redcross)
173	Brahmagiri	Ambapada	Jagannath Patna		MCS (Redcross)
174	Brahmagiri	Rebena Nuagaon	Moto		MCS (Redcross)
175	Kakatpur	Bangurigaon	Tentulia		MCS (Redcross)
176	Krushnaprasad	Arakhakuda	Gabakunda		MCS (Redcross)
177	Krushnaprasad	Pirijipur	Gangadharpur		MCS (Redcross)
178	Krushnaprasad	Pirijipur	Sanapatna		MCS (Redcross)
179	Krushnaprasad	Pirijipur	Sipakuda		MCS (Redcross)

**c) Equipments provided to the MCS**

Sl.No.	ITEMS	UNIT PER SHELTER	Utility
1	5 KVA Diesel Generator Sets	1No	Backup Power supply at the time of power failure
2	Light	25Nos.	Fitted in the Shelters for lighting purposes
3	Fan	15 Nos	Fitted to Shelters
4	Pulley Block	3Nos	Handling the materials
5	Lifebuoy MMD/SOLAS Approved	5Nos	Water Rescue during Flood
6	Life Jacket MMD/SOLAS Approved	5Nos	Water Rescue during Flood
7	Nylon Rope 12 mm dia-50 mtr	25 Kg	Material handling & water rescue

8	Stretcher	2Nos	Carry patient/ injured persons at the time of disaster
9	Manila rope 200 ft.6mm dia	25Kg	Material handling & water rescue
10	Manila rope 60 ft.12mm dia	25Kg	Material handling & water rescue
11	Sisal chord 60mm dia 20 ft	25Kg	Material handling & water rescue
12	G.I,Trunk 6ft x 3ft x 2.5 ft	2Nos	Preservation of Search & Rescue items
13	Telescopic Aluminium Ladder(30ft)	1No	Building Rescue
14	First Aid Box with two manuals	1 Box	Treatment of patient/ injured persons at the time of disaster
15	Florescent jackets	50 Nos	For identity of task force during Search & Rescue operation
16	Free Kitchen Utensils : Flat Handa, Kadai, Dekchi,Daba,Khanta, paniki,Hemadasta,Korana, Bucket and other items	1 Set(List enclose-22 items)	For cooking at Shelter during disaster to give free fooding to the affected persons
17	Notice Board with chicken net covering and locking	1 No	Display of events & activities of Shelter
18	Dari	1 No	Utilized during meeting of the Community
19	Black Board	1 No	Utilized during meeting of the Community
20	Plastic Chair(5 Nos.Nil Kamal)	1 No	Utilized during meeting of the Community
21	Solar Lantern (TATA BP)	1 No	Utilized at the time of Power Failure
22	Inflatable Tower Light with accessories	2 Nos	It is the unique - having luminous Intensity of 40,000 Lumen, can impart visible illumination of 100 sq.mtr radius, very essential for night time disaster management
23	Petrol driven Portable Power Saws of STIHL Germany Make 500 cm Bar length with Personnel Protective Equipments	2 Nos	It is very essential of cutting the fallen trees during disaster, capable cutting all types of tree girth of 2 mtr.
24	JAYKAY make, Single Phase double mounting Electrical Siren	1 No	Disaster warning up to 1.5 Km.
25	Ahuja Make Hand Held Mega Phone, Batter operated	1 No	Public Address during Search & Rescue activities

26	Flexi-water tank-200 lit. Capacity	2 Nos	To preserve drinking water during Search & Rescue activities
27	Safety shoes (Gum Boot)	2 pairs	For use by task force during Search & Rescue activities
28	Gloves	2 Pairs	For use by task force during Search & Rescue activities
29	Hand Held Search Light (Hi-Beam Rechargeable ) range of 1000mtr.	1 No	Night time Search & Rescue activities, clear vision for search of victim up to the 1Km.
30	Foldable stretcher	2 Nos	Carry patient/ injured persons at the time of disaster
31	Free Power Radio (Philips)	1 No	For knowledge radio Broad cast to the affected persons.
32	Water filter 26lit.(Bajaj)	1 No	Supply of Safe water during disaster
33	High-end desktop Computer with 3KVA online UPS	1 No	<b>For sustainability of the communication hub.</b> For online bill payments/photocopy of important documents/railway ticket/online academic results/ weather report/ scanning of documents/video conferencing
34	Multifunctional Printer with Fax	1 No	
35	Computer Chair		
36	Furniture & fixture for IT-- item set		
37	LCD Panel		
38	1.5KVA Digital Inverter	1 No	Backup power supply to the IT items
39	1.5 ton AC with Stabilizer	1 No	For regulating the constant room temperature for longevity of the IT equipment
40	10KVA Constant Voltage Stabilizer	1No	For constant voltage of power supply to the IT items

#### DETAILS OF LIVESTOCK SHELTERS AND MOUNDS:

Block	Livestock Shelters G.P.s	Mounds at the G.P.s
Astaranga	Nuagarh	Talada, Nuagarh, Manduki, Ainsinia, Dakshinapantala, Kaliakana
Brahmagiri	Khajuria	Podakera, Karimpur, Haridas, Mataipur
Delanga	Kalyanpur	Nai Bhansara, Ratanpur
Gop	Rahangagorada	Davar, Olandi, Goladari, Baharana

Kakatpur	-	Pathatpaka
Kanas	Badal	Bhagabatipitha, Alibad, Kalapadar, Gopinathpur
Krushnaprasad	-	Satapada
Nimapara	-	Badaninigaon, Bhagabatipur
Pipili	Poparanga	Poparanga
Puri	-	Balabhadrapur, Ura
Satyabadi	-	Dokhandpur

# Chapter – 5:

## Prevention & Mitigation Measures

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

### DISASTER SPECIFIC MEASURES AND APPROACHES

Heat Wave Meeting: For pre-arrangement to face heat wave calamities

- Operation of Control Room
- Rescheduling of School College timing
- Measures taken by Health and Animal Care
- Jalachatra
- Provision of drinking water
- Measures by RWSS, PHED, School and Mass Education and ICDS

Natural Calamity Meeting: For pre-flood arrangements and response mechanism for flood managements

- Opening of Control room
- Flood zoning
- Storage of food stuff at vulnerable points
- Pre-flood arrangements by irrigation dept.
- Health measures
- Animal Care
- Assignment of duties
- Arrangements of boats, rescue, volunteers etc.
- Co-ordination with state level agencies
- Arrangements of relief materials

Response to Cyclone:

1. Construction of Cyclone shelter
2. Equipped of Cyclone shelter
3. Training and capacity building of shelter level volunteers in First Aid, Rescue and Counselling

Response to Tsunami:

1. Formation of DMTs at the Tsunami prone villages
2. Mock Exercises
3. Early Warning dissemination and formation of WhatsApp group of Govt. stakeholders and volunteers
4. Effective co-ordination among departments, volunteers, NGOs and management groups

## CLIMATE CHANGE ACTION PLAN

### Cyclone

Department/Sector	List out impacts against each disaster	Existing coping practices
Puri Municipality	<ul style="list-style-type: none"> <li>• Damage to houses</li> <li>• Damage to street lights</li> </ul>	<ul style="list-style-type: none"> <li>• Sensitizing people</li> <li>• Evacuating people in a safe place</li> <li>• Arranging free kitchen for people</li> </ul>
<ul style="list-style-type: none"> <li>• Rural Works Department</li> </ul>	<ul style="list-style-type: none"> <li>• Damage to houses and buildings</li> </ul>	<ul style="list-style-type: none"> <li>• Construction of cyclone shelter and shifting of communities</li> </ul>
<ul style="list-style-type: none"> <li>• Civil Supply</li> </ul>	<ul style="list-style-type: none"> <li>• Availability of food stuff increases during emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Availing sufficient amount of rice in advance</li> </ul>
Animal Resource Department	<ul style="list-style-type: none"> <li>• Loss of pasture lands</li> <li>• Livestock faces problem for grazing</li> <li>• Chances of epidemic increases</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-vaccination before the monsoon and throughout the year</li> <li>• Farmers are advised not to loosen their livestock outside</li> </ul>
<ul style="list-style-type: none"> <li>• Education</li> </ul>	<ul style="list-style-type: none"> <li>• Damage to infrastructure</li> <li>• Increased debris of tree and shrubs</li> <li>• Increased necessity of manpower and equipment for immediate restoration</li> <li>• Increased cost of maintenance</li> <li>• Closing of schools</li> </ul>	<ul style="list-style-type: none"> <li>• Shifting the students</li> <li>• Providing dry foods</li> <li>• Awareness generation through PRI members</li> <li>• Providing Medicine and first aid</li> </ul>
<ul style="list-style-type: none"> <li>• Damages to crop</li> <li>• Pest attack</li> </ul>	<ul style="list-style-type: none"> <li>• A forestation</li> </ul>	<ul style="list-style-type: none"> <li>• Damages to crop</li> <li>• Pest attack</li> </ul>
<b>Fisheries</b>	<ul style="list-style-type: none"> <li>• Damage to houses</li> <li>• Damage to nets and boats</li> <li>• Damage to embankments of tank</li> </ul>	<ul style="list-style-type: none"> <li>• Providing relief</li> <li>• Providing nets and boats at subsidized rate</li> </ul>
<ul style="list-style-type: none"> <li>• Public Health Engineering</li> </ul>	<ul style="list-style-type: none"> <li>• Power failure</li> </ul>	<ul style="list-style-type: none"> <li>• Operating DG system to ensure water supply</li> </ul>

### Flood and heavy rains:

Department/Sector	List out impacts against each disaster	Existing coping practices
Agriculture	<ul style="list-style-type: none"> <li>• Damage of seeds sawn/seedling</li> <li>• Post flood pest attack</li> </ul>	<ul style="list-style-type: none"> <li>• Compensation to farmers</li> <li>• Afforestation Activities</li> </ul>
<b>Rural water supply &amp; sanitation/R.D. Department</b>	Submerged tube well in flood water	<ul style="list-style-type: none"> <li>• Disinfection of tube wells in flood affected areas</li> <li>• Providing portable drinking water through tankers</li> </ul>
Puri Municipality	<ul style="list-style-type: none"> <li>• Water logging in low line areas</li> </ul>	<ul style="list-style-type: none"> <li>• Evacuating people in a safe place</li> <li>• Arranging free kitchen for people</li> <li>• Using heavy duty motors for dewatering the low line areas.</li> </ul>
<ul style="list-style-type: none"> <li>• Civil Supply</li> </ul>	<ul style="list-style-type: none"> <li>• Availability of food stuff increases during emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Availing sufficient amount of rice in the district prior to rainy season</li> </ul>
Animal Resource Department	<ul style="list-style-type: none"> <li>• Non-availability of cattle feed and fodders</li> <li>• Spreading of infectious diseases</li> <li>• Death of animals</li> </ul>	<ul style="list-style-type: none"> <li>• Organizing vaccination and health camps in the affected areas</li> <li>• Disposal of carcass preventing spreading infections</li> </ul>
Education	<ul style="list-style-type: none"> <li>• Inundation of infrastructure</li> <li>• Damage to school building</li> <li>• Damage to reading materials</li> <li>• Closing of schools</li> <li>• Illness among the children</li> </ul>	<ul style="list-style-type: none"> <li>• Repairing of buildings</li> <li>• Repairing of roads and approaches to government buildings</li> <li>• Creating awareness among the parents</li> <li>• Shifting students to the cyclone shelter</li> <li>• Providing dry foods</li> </ul>
Health and family welfare Dept	<ul style="list-style-type: none"> <li>• Acute diarrhoea spread in population</li> <li>• Increase in cases of snake bite</li> <li>• Increase in cases of skin diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Supply of anti diarrheal medicines like ORS in flood prone areas</li> <li>• Opening of medical relief centre in flood affected area</li> <li>• Mobilization of health teams, doctors and paramedics</li> <li>•</li> </ul>

Public Health Engineering	<ul style="list-style-type: none"> <li>• Submergence of drinking water points</li> <li>• Submergence of pump machine and other equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Super chlorination of water sources</li> <li>• Sinking pump machines</li> <li>• Installation of water storage tanks</li> <li>• Installation of DG sets</li> </ul>
Fisheries	<ul style="list-style-type: none"> <li>• Overflowed the tanks and ponds</li> <li>• Damage the tanks embankment of pisciculture projects</li> <li>• Washed away the operating nets of the fisherman</li> <li>• Displaced the position of fishing boat</li> <li>• Sand covered the bottom of the tank</li> <li>• Damaged the fisherman village situated on the river banks</li> <li>• Fish seed gets hampered</li> </ul>	<ul style="list-style-type: none"> <li>• Provide relief and cash</li> <li>• Providing net and boat at subsidized rate</li> <li>• Providing loans</li> </ul>

### Heat Wave:

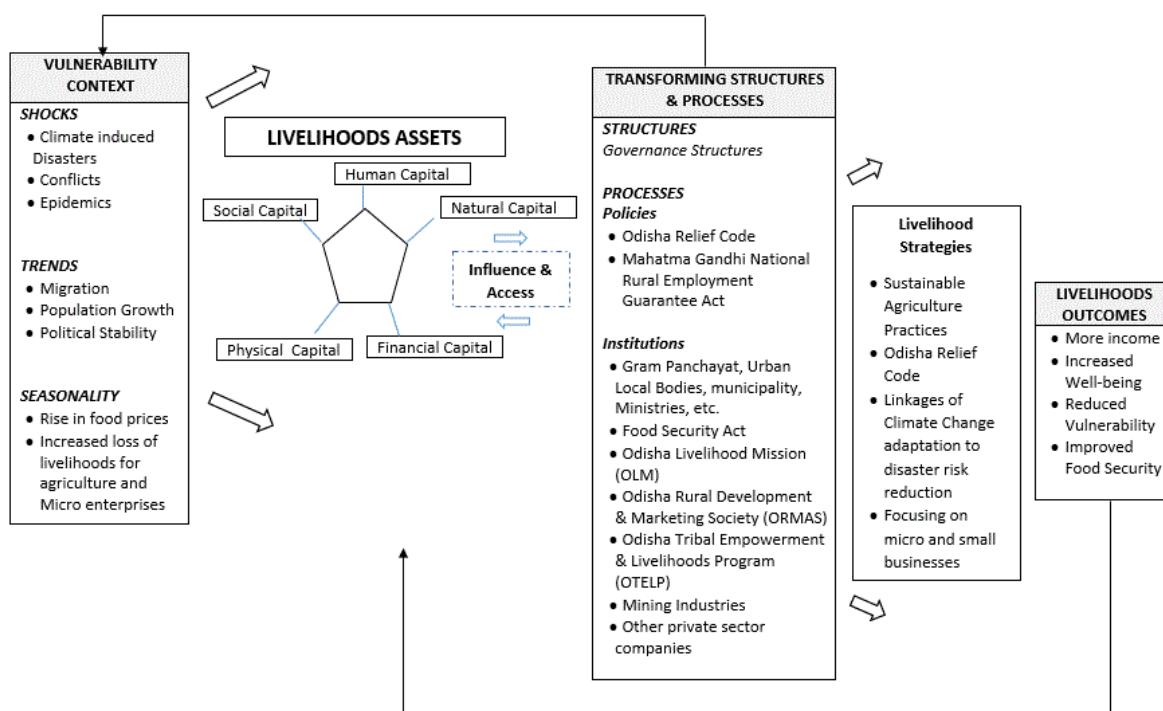
Department/ Sector	List out impacts against each disaster	Existing coping practices
<ul style="list-style-type: none"> <li>• Education</li> </ul>	<ul style="list-style-type: none"> <li>• Irregularity of children in schools</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness generation for children</li> </ul>
Public Works Department	<ul style="list-style-type: none"> <li>• Impact on work site in terms of possibilities of sun-stroke among workers and laborers</li> </ul>	<ul style="list-style-type: none"> <li>• Changes in working hours</li> <li>• Reduction in overall working hours</li> </ul>
Animal Husbandry Department	<ul style="list-style-type: none"> <li>• Dehydration</li> <li>• Scarcity of drinking water</li> </ul>	<ul style="list-style-type: none"> <li>• Availing sufficient numbers of life saving drugs and saline.</li> <li>• Sinking more numbers of tube wells and hand pump</li> </ul>
Public Health Engineering	<ul style="list-style-type: none"> <li>• Ground water depletion</li> <li>• Dysfunction of hand pumps and tube wells etc</li> </ul>	<ul style="list-style-type: none"> <li>• Installation of water storage tanks in scarcity pockets</li> </ul>

## Drought:

Department/ Sector	List out impacts against each disaster	Existing coping practices
Agriculture	<ul style="list-style-type: none"> <li>• Wilting</li> </ul>	<ul style="list-style-type: none"> <li>• Lift Irrigation from farm ponds</li> <li>• Polythene mulching</li> <li>• Shallow bore well/river lift through Jalanidhi Yojna</li> </ul>
Animal Husbandry Department	<ul style="list-style-type: none"> <li>• Non-availability of feed s and fodders</li> </ul>	<ul style="list-style-type: none"> <li>• Arranging feeds and fodders for cattle immediately</li> </ul>

## SUSTAINABLE LIVELIHOODS FRAMEWORK

### Sustainable livelihoods Framework for Puri District



## PRE, DURING, AND POST ACTIVITIES

### WARNING DISSEMINATION PHASE

Responsible Department	Activities		
	Pre	During	Post
Collector, ADM, Emergency Officer	<ul style="list-style-type: none"> <li>▪ Verify inventory of Resources</li> <li>▪ Setting up of Control Rooms</li> <li>▪ Communication link with all concerned with disaster preparedness</li> <li>▪ Coordinate with blocks and neighbouring districts</li> <li>▪ Coordinate with NGOs and NGO Coordination Committee</li> <li>▪ Ensure functioning of all communication and warning system</li> <li>▪ Update databank</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide information to all areas about weather</li> <li>▪ Collection of information and providing it to the state</li> <li>▪ Expending funds for emergency needs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide information about the relief and rehabilitation programme</li> <li>▪ Order CESCO to disconnect electricity supply for the affected area</li> </ul>
BDO and Tahasildar	<ul style="list-style-type: none"> <li>▪ Alert all departments to be present at their headquarters</li> <li>▪ Convene meeting of DDMC</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collection of information and providing it to the DCR</li> <li>▪ Procuring locally needed emergency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Report to the district administration on information from field level</li> </ul>
Revenue	<ul style="list-style-type: none"> <li>▪ Close contact with district administration</li> <li>▪ Alert officials to remain in HQ</li> </ul>	<ul style="list-style-type: none"> <li>▪ Disseminate day to day information of the position of the blocks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ensure cooperation of the public / task force during damage assessment</li> </ul>
Police/ Civil Defence/ Fire Brigade	<ul style="list-style-type: none"> <li>▪ Make all available Police persons in the district available to the district administration</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inform BDOs on receipt of any information</li> <li>▪ Recruit casual labourers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Report of the District Collector</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Ensure functioning of Police Stations</li> <li>▪ Alert police officers to remain in HQ</li> <li>▪ Activate a public information centre</li> </ul>		
Irrigation	<ul style="list-style-type: none"> <li>▪ Organize round the clock inspection and repair of breaches, culverts, irrigation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Organize round the clock inspection and repair of pumps, generators,</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inspect the inlet and outlet to tanks to check obstruction by</li> </ul>

	<p>channels, bridges and embankments</p> <ul style="list-style-type: none"> <li>▪ Arrange additional sand bags, cement bags, bamboo mats and bamboos</li> </ul>	<p>motor equipments and station building</p> <ul style="list-style-type: none"> <li>▪ Provide all technical assistance in disaster affected area</li> </ul>	<p>trees and vegetation</p>
Agriculture	<ul style="list-style-type: none"> <li>▪ Review and update precautionary agricultural measures</li> <li>▪ Check available stock of equipment and materials</li> <li>▪ Stock agricultural equipments</li> </ul>	<ul style="list-style-type: none"> <li>▪ Determine what damage, pests or disease may be expected</li> <li>▪ Determine what drugs and insecticide item will be required</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide information to all concerned about diseases, likely damage to crop and plantation</li> <li>▪ Inform ways to protect crop and plantation</li> </ul>
Animal Husbandry	<ul style="list-style-type: none"> <li>▪ Check and stock emergency medical equipments</li> <li>▪ Check and stock surgical packs</li> <li>▪ Prepare an area of the hospital to receive large number of livestock</li> </ul>	<ul style="list-style-type: none"> <li>▪ Determine expected injuries/ illness to cattle</li> <li>▪ Assemble and sterilize surgical packs</li> <li>▪ Develop emergency admission procedure</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide information to all staff of veterinary hospitals and centers about the disaster, likely damages and effects</li> <li>▪ Activate public information centre</li> </ul>
CESU	<ul style="list-style-type: none"> <li>▪ Arrange and procure additional generator from local market</li> <li>▪ Check emergency tool kits</li> <li>▪ Assemble additional equipments needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Assist the district authorities to make arrangements for standby generators in hospitals, RWSS, Collectorate, Meteorological Stations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Review the total extent of damages to the power supply installations</li> </ul>
RWSS	<ul style="list-style-type: none"> <li>▪ Inform people to store emergency supply of drinking water</li> <li>▪ Arrange standby water supply</li> <li>▪ Establish procedures for emergency distribution of water, if necessary</li> </ul>	<ul style="list-style-type: none"> <li>▪ Organize monitoring of wells, intake structures, pumping stations, treatment plant</li> <li>▪ Make provision for distributing water on emergency basis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cover pumps and restore with adequate protection to prevent damage</li> <li>▪ Establish emergency work gangs for immediate post disaster repairs</li> </ul>
PWD	<ul style="list-style-type: none"> <li>▪ Review and update precautionary measures and procedures</li> <li>▪ Extra transport vehicles, filled with fuel to be stationed at</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inspect all roads and bridges by a bridge engineer, foundation and piers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establish priority listing of roads (to hospitals and main trunk routes) to be opened first</li> </ul>

	<p>strategic spots along routes likely to be affected</p> <ul style="list-style-type: none"> <li>Secure work under construction</li> <li>Secure heavy equipments</li> <li>Issue two way communication to all teams</li> </ul>	<ul style="list-style-type: none"> <li>Inspect all govt. buildings and structures</li> <li>Assemble emergency tool kits like axes, power saws, pulley block, etc</li> <li>Identify and mark strategic routes to evacuation and relief</li> </ul>	
NGOs/ Volunteers	<ul style="list-style-type: none"> <li>Ensure that the correct news reaches the public</li> </ul>	<ul style="list-style-type: none"> <li>Asses the situation from time to time</li> </ul>	<ul style="list-style-type: none"> <li>Inform people to return to their home after the danger is receded</li> </ul>

## EVACUATION PHASE

Responsible Department	Activities		
	Pre	During	Post
Collector, ADM, Emergency Officer	<ul style="list-style-type: none"> <li>Order evacuation on priority basis of seriously injured, sick, children, women, handicapped, old people and able bodies</li> <li>Requisite for additional rescue equipments such as boats, transport vehicles, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Provision of food to rescue population through CSO</li> <li>Ensure precautionary measures through student mass</li> </ul>	<ul style="list-style-type: none"> <li>Ensure evacuation done safely</li> <li>Road clearance.</li> <li>Eviction of encroachments</li> </ul>
PWD	<ul style="list-style-type: none"> <li>Check evacuation routes and assist people in evacuating an areas</li> </ul>	<ul style="list-style-type: none"> <li>Community assistance mobilized for road clearing</li> </ul>	<ul style="list-style-type: none"> <li>Despatch extra transport vehicles from headquarters</li> </ul>
Health	<ul style="list-style-type: none"> <li>Deploy senior medical officer</li> <li>Make arrangement of medical facilities</li> <li>Develop emergency admission procedure</li> </ul>	<ul style="list-style-type: none"> <li>Ensure potable water supply or packed water</li> <li>Provide medical help</li> <li>Help the injured to move to hospital</li> </ul>	<ul style="list-style-type: none"> <li>Ensure priority for shifting of those seriously injured to hospital</li> <li>Provide first aid</li> </ul>
Police	<ul style="list-style-type: none"> <li>Deployment of police staff and armed force for evacuation</li> </ul>	<ul style="list-style-type: none"> <li>Organize emergency transport for</li> </ul>	<ul style="list-style-type: none"> <li>Take assistance from community leaders for appropriate security during evacuation</li> </ul>

	<ul style="list-style-type: none"> <li>Arrangement for the safety of the property of the people</li> </ul>	<ul style="list-style-type: none"> <li>seriously injured people to hospital</li> <li>Maintain law and order</li> </ul>	
BDO and Tahasildar	<ul style="list-style-type: none"> <li>Ensure adequate warning mechanism</li> <li>Prepositioning of task force</li> </ul>	<ul style="list-style-type: none"> <li>Send search Groups to rescue people from risk areas</li> <li>Help the injured people to move to the hospital</li> </ul>	<ul style="list-style-type: none"> <li>Assistance to community in evacuation process</li> <li>Keep record of missing persons</li> <li>Inform the family members</li> </ul>
RTO / MVI	<ul style="list-style-type: none"> <li>Arrange sufficient number of transport</li> </ul>	<ul style="list-style-type: none"> <li>Alert truck Owners/ other vehicles to coordinate with district administration</li> <li>Organize Transport for immediate assistance</li> </ul>	<ul style="list-style-type: none"> <li>Transport people from evacuated area to their homes</li> </ul>
Revenue / RI	<ul style="list-style-type: none"> <li>Propagation for evacuation</li> <li>Arrangement for the safety of property of the people</li> <li>Arrange rescue kits</li> </ul>	<ul style="list-style-type: none"> <li>Send search Group to rescue people from risk areas</li> </ul>	<ul style="list-style-type: none"> <li>Locate missing persons</li> <li>Keep a record of the missing persons</li> <li>Inform their family members</li> </ul>
NGO/ Volunteers	<ul style="list-style-type: none"> <li>Mobilize response group</li> <li>Help the evacuees</li> </ul>	<ul style="list-style-type: none"> <li>Keep close contact with community and district administration</li> </ul>	<ul style="list-style-type: none"> <li>Assist community to find the missing persons</li> </ul>

## SEARCH AND RESCUE PHASE

Responsible Department	Activities		
	Pre	During	Post
Collector, ADM, Emergency Officer	<ul style="list-style-type: none"> <li>Intimate police to make arrangement for army assistance</li> <li>Inform BDOs to coordinate with local NGOs</li> <li>Requisition for extra boats</li> <li>Provision of food to rescued populace</li> </ul>	<ul style="list-style-type: none"> <li>Ensure volunteers carry out the search and rescue operation with the assistance of police</li> <li>Identification of Casualties</li> </ul>	<ul style="list-style-type: none"> <li>Keep record of the search and rescue operation and make assessment of active NGOs</li> <li>Preparing reports on UD cases</li> </ul>
Police	<ul style="list-style-type: none"> <li>Deployment of police personnel at risk points</li> </ul>	<ul style="list-style-type: none"> <li>Organize Emergency transport for</li> </ul>	<ul style="list-style-type: none"> <li>Find out the missing persons and keep a record of them</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Arrangement for the safety of the property of the people</li> </ul>	<ul style="list-style-type: none"> <li>seriously injured people to hospital</li> <li>▪ Guard and rescue at the breach points</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inform their family members</li> </ul>
Block/ PanchayatSamiti/ Revenue/ RI	<ul style="list-style-type: none"> <li>▪ Work division to the officers and NGOs for rescue operation</li> <li>▪ Prepositioning of food stuff, life saving drugs, cattle feed, polythene</li> <li>▪ Deployment of RIs and other supporting staff to assist in rescue operation</li> <li>▪ Propagation for evacuation</li> <li>▪ Arrange rescue kits</li> </ul>	<ul style="list-style-type: none"> <li>▪ Send search group to rescue the left behind persons in the risk areas</li> <li>▪ Arrange boats and transport for the people who are stranded</li> <li>▪ Reaching out to people with food stuff and other essential items</li> </ul>	<ul style="list-style-type: none"> <li>▪ Find out the missing persons and keep a record of them</li> <li>▪ Inform their family members</li> <li>▪ Provide tarpaulins as and when necessary and help the people to return to their homes</li> <li>▪ Arrange exgratia for the family of missing persons</li> </ul>
PWD/ Irrigation	RD/ <ul style="list-style-type: none"> <li>▪ Arrangement of materials for repairing of roads and breaches for post disaster preparation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Arrange casual labour on emergency basis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Immediate repair of the road and breaches for communication and transportation</li> </ul>
RTO/ MVI	<ul style="list-style-type: none"> <li>▪ Meeting with the owners of the vehicles</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide necessary vehicles to district level functionaries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide vehicle required for transportation of people to return to their homes</li> </ul>
NGO/ Volunteers	<ul style="list-style-type: none"> <li>▪ Mobilize volunteers</li> <li>▪ Work distribution among volunteers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Help the injured to move to the hospital</li> <li>▪ Deployment of Volunteers and resources at shelter points</li> </ul>	<ul style="list-style-type: none"> <li>▪ Help people to return to their homes</li> </ul>
Health	<ul style="list-style-type: none"> <li>▪ Arrangement of medical help at shelter points</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide medical help</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide first aid</li> </ul>
RWSS	<ul style="list-style-type: none"> <li>▪ Pre-arrangement of drinking water at shelter places</li> </ul>	<ul style="list-style-type: none"> <li>▪ Arrange standby drinking water if required</li> </ul>	<ul style="list-style-type: none"> <li>▪ Carry out immediate post disaster repair</li> </ul>

## MEDICAL AID PHASE

Responsible Department	Activities		
	Pre	During	Post
Collector	<ul style="list-style-type: none"> <li>Ascertains the medical stock position</li> </ul>	<ul style="list-style-type: none"> <li>Monitors the operation of medical help</li> </ul>	<ul style="list-style-type: none"> <li>Assesses the medical aid for further improvement</li> </ul>
Health	<ul style="list-style-type: none"> <li>Arrange drugs and medical equipments for all possible diseases during disaster</li> <li>Ensure extra supplies of medical items are obtained quickly</li> <li>Discharge all ambulatory and non ambulatory patients whose release does not pose a health risk to them</li> <li>Enlist private doctors</li> <li>Establish Medical Relief Camps</li> <li>Clarify procedures between peripheral hospitals, private hospitals, blood banks and general hospitals</li> </ul>	<ul style="list-style-type: none"> <li>Determine type of injury/ illness</li> <li>Assemble and sterilize surgical packs, if required</li> <li>Prepare an area of the hospital to receive large number of patients</li> <li>Take help of private doctors in case of shortage of staff</li> </ul>	<ul style="list-style-type: none"> <li>Report to the Collector</li> <li>Check stock of equipment and drugs likely to be most needed after disaster</li> <li>Assess the level of medical supply in stock</li> </ul>
Veterinary and Animal Husbandry	<ul style="list-style-type: none"> <li>Establish cattle camps and veterinary aid centers at disaster sites</li> <li>Designate Officer in Charge for the camps</li> <li>Estimate requirement of water, fodder and animal feed for cattle camps.</li> <li>Preventive vaccination against common contagious diseases of Cattle and Buffalos to be taken up.</li> </ul>	<ul style="list-style-type: none"> <li>Organize transfer of seriously injured livestock from village to veterinary aid centers</li> <li>Ensure adequate sanitary conditions to avoid outbreak of epidemics.</li> <li>The VAS/AVAS/ LIs to remain present in their respective head quarters and keep regular contact with CDVO/Sub-divisional Veterinary Officer,</li> </ul>	<ul style="list-style-type: none"> <li>Report to Emergency Operation center and District Control Room</li> <li>Animal health camps will be conducted in the disaster affected villages and preventive vaccination will be carried out in case of outbreak in any area of the district</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Special Medicines and life saving drugs may be made available out of SRC grant to meet the emergency situations during disaster, as the normal quota of the medicine may not be adequate.</li> <li>▪ Cattle feed like rice bran/ pre mixed cattle feed/ straw to be kept ready at different storing points preferably in Panchayat Samiti godowns since there is no storage facility in Veterinary dispensaries.</li> </ul>	<p>Local Revenue Officers, BDOs, Public Representatives, Villagers &amp; NGOs working for animal welfare and take care and rescue their live stock.</p> <ul style="list-style-type: none"> <li>▪ Veterinary Mobile teams to be stationed in each block and VD head quarters who will visit the marooned villages for treatment of affected animals.</li> <li>▪ Control Room will function from 01.06.2019 till the end of Rainy season.</li> </ul>	
NGO/ Volunteers	<ul style="list-style-type: none"> <li>▪ Preparation of volunteers of medical aid response group</li> </ul>	<ul style="list-style-type: none"> <li>▪ Help the medical personnel</li> <li>▪ Inform the medical officer regarding epidemic, if any</li> </ul>	<ul style="list-style-type: none"> <li>▪ Help the medical team in vaccination procedure</li> <li>▪ Disease surveillance</li> </ul>

Sl. No.	Scheme	Possible activities for DRR
1	Member of Parliament Local Area Development Scheme (MPLADS)	<ul style="list-style-type: none"> <li>- Construction of flood control embankments</li> <li>- Construction of common shelters for cyclones, Floods and handicapped</li> <li>- Purchase of motor boats for flood and cyclone prone areas</li> <li>- Fire tenders for Government organization</li> <li>- Retrofitting of essential lifeline buildings, viz Govt. hospitals, Govt. Schools and public buildings to be used as shelters in an emergency.</li> <li>- Early Warning Systems for effective disaster mitigation.</li> <li>- Construction of roads, approach roads, link roads, Pathways.</li> <li>- Drinking water facility</li> </ul>
2	Indira Awas Yojana (IAY)	<ul style="list-style-type: none"> <li>- Construction of disaster-resilient houses</li> </ul>
3	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	<ul style="list-style-type: none"> <li>- Construction of river embankments</li> <li>- Construction of roads in remote areas</li> <li>- Construction of multi-hazard shelters</li> </ul>
4	National Rural Livelihood Mission	<ul style="list-style-type: none"> <li>- Creation of SHGs</li> </ul>
5	Pradhan Mantri Gram Sadak Yojana (PMGSY)	<ul style="list-style-type: none"> <li>- Construction of roads in remote areas</li> </ul>
6	National Health Mission (NHM) (NRHM and NUHM)	<ul style="list-style-type: none"> <li>- Rapid Action Force for Emergency Medical Response</li> <li>- Emergency ambulances</li> <li>- Preparedness for mobile Field Hospitals</li> </ul>
7	Scheme for Animal Health Care in the State	<ul style="list-style-type: none"> <li>- Vaccination drives</li> </ul>
8	Rashtriya Swasthya Bima Yojana	<ul style="list-style-type: none"> <li>- Insurance (Disaster Insurance)</li> </ul>
9	Pradhan Mantri Awas Yojana (PMAY)	<ul style="list-style-type: none"> <li>- Construction of disaster resistant houses</li> </ul>
10	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	<ul style="list-style-type: none"> <li>- Insurance</li> </ul>
11	The Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	<ul style="list-style-type: none"> <li>- Insurance</li> </ul>
12	Samagra Shiksha	<ul style="list-style-type: none"> <li>- Disaster resilient construction of new school buildings</li> <li>- Retrofitting in existing school buildings</li> <li>- Essential response preparedness and planning at school level</li> </ul>
13	Mission Shakti: Empowering Women through SHGs	<ul style="list-style-type: none"> <li>- Capacity building of women on adaptation and risk reduction behaviors and preparedness at household level to face climatic extremes</li> <li>- Linking livelihood promotion with sustainable natural resource management</li> </ul>
14	Gopabandhu Gramin Yojana	<ul style="list-style-type: none"> <li>- The roads must be assessed for future climatic extremes and should be location wise designed to be resilient. The same applies to the other two sectors. The integration can be done from design to implementation, monitoring and evaluation that the infrastructure is created maintained keeping in mind</li> </ul>

		<p>future possibilities and rising frequency and magnitude of extremes.</p> <ul style="list-style-type: none"> <li>- A life cycle analysis based on (probable life of the infrastructure and expected future climatic extreme events) history of extremes and climatic projections can ensure resilient design, construction and maintenance. For this capacity building of planners, contractors and engineers on themes such as, assessment of climate and disaster risks, resilient designs, monitoring and evaluation will be required</li> </ul>
15	Biju Pucca Ghar Yojana	<ul style="list-style-type: none"> <li>- Disaster Resilient housing for the beneficiaries by the trained Engineers and Masons</li> <li>- Awareness among the beneficiaries to take up disaster resilient housing</li> </ul>
16	Jalanidhi: Harnessing Ground and Surface Water for Agriculture	<ul style="list-style-type: none"> <li>- Prior assessment of feasibility of ground water level in future climate scenario as well as sustainability</li> <li>- Installation of resilient infrastructure-based hazard and vulnerability assessment of the field location</li> <li>- Installation of structural mitigation measures for protecting the existing infrastructure</li> <li>- Agreement and sensitization of beneficiaries for efficient and smart use of water for sustainability</li> <li>- Measures for ground water recharge</li> </ul>
17	Odisha Tribal Livelihood Programme Plus: Empowerment & Sustainable Livelihood Opportunity for Tribals	<ul style="list-style-type: none"> <li>- Base Line Survey can include in climate and disaster risk assessment as part of PRA.</li> <li>- The design of project intervention must consider present and future climate scenario and projections</li> <li>- Infrastructure to be created must be DRR inclusive analysing the risks associated with disasters and climate change</li> <li>- Livelihood risk transfer through appropriate risk transfer mechanism should be a core component based on risk analysis.</li> <li>- The program has the potential to produce DRR-CCA integrated model practices for development through integration of DRR and CCA</li> </ul>
18	Jeebika - Orissa Rural Livelihood Programme: Watershed Development – A Means to a Better Livelihood	<ul style="list-style-type: none"> <li>- Livelihood promotion activities should be selected based on local level climate and disaster risk assessment</li> <li>- The component of climate change and disaster resilient capital creation can be taken up. e.g., practices that can withstand future climatic extreme events such as high speed cyclones, extreme floods</li> <li>- Improvement of WASH through awareness, resilient infrastructure like raised toilets, hand pumps can be focussed during design and implementation of project activities</li> <li>- Integrating livelihood and weather index based insurance with livelihood options for greater adaptation. e.g. if tailoring is promoted as non-farm based livelihood, the tool such as the sewing machine, the tailoring centre (Infrastructure) must be insured against climatic extreme events</li> </ul>
19	Biju Gram Jyoti Yojana: Illuminating Villages – A State Initiative	<ul style="list-style-type: none"> <li>- The infrastructure installed under the program must be designed considering high speed cyclones and floods for adaptation and sustenance.</li> <li>- Building Energy Conservation Standards must be done and beneficiaries must be sensitized for energy conservation</li> </ul>
20	Biju Saharanchal Vidyutikarana	<ul style="list-style-type: none"> <li>- Same as above</li> </ul>

	Yojana: Electricity for Slums and Habitation in Urban Areas	
21	Capital Expenditure System Improvement for Reduction of AT&C Programme: loss in Electricity Distribution Sector	- Strengthening existing infrastructure with focus on extreme events (current and projected). The energy infrastructure must be structurally strong enough to withstand cyclone speed of 300 KMPH or more and provision for rapid recovery (strategies and resources) should exist in the scheme.
22	Odisha Disaster Recovery Project (ODRP)	- Construction of disaster resistant houses

### [Activities/ Projects for 5.3 and 5.4

Construction of multipurpose cyclone and flood shelters.

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

- Immunization
- Preventive measures against vector borne diseases
- Risk Transfer: Crop insurance/ livestock insurance
- Measures against animal depredation- Trenching/ Fencing
- Awareness generation programmes on disaster prevention and mitigation
- Mainstreaming Disaster Risk Reduction (DRR) in development activities]

# Chapter – 6

## Climate Change Adaption

### 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 greenhouse gas concentrations in the atmosphere since the industrial revolution. Global surface temperature change for the end of the 21st century is likely to reach 4°C if no drastic mitigation actions are taken. Various sources of climate data exist that can support planning for climate change.

Greenhouse gases (GHGs) are trace gases in the atmosphere that absorb and emit long wave radiation. They naturally blanket the earth and keep it at about 33° C warmer than it would be without these gases in the atmosphere. The table features the seven most important greenhouse gases as regulated under the Kyoto Protocol. The seven gases each have a different capacity to trap heat in the atmosphere, or a so-called “*global warming potential*” (GWP). They all belong to the group of long-lived greenhouse gases (LLGHGs), because they are chemically stable and persist in the atmosphere over time scales of a decade to centuries or longer, so that their emission has a long-term influence on climate. Some of the GHGs occur naturally (e.g. CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) 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<sub>6</sub> and NF<sub>3</sub>).

**Table : 6.1**

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

### 6.2 Sectors with High Mitigation Potential (Table : 6.9)

Sl No	Sectors	Mitigation Options
1	Energy	<ul style="list-style-type: none"><li>• Use of renewable heat and power (hydropower, solar, wind, geothermal and bio-energy)</li><li>• Improved supply and distribution efficiency</li><li>• Carbon capture storage (CCS)</li><li>• Combined heat and power</li></ul>
2	Transport	<ul style="list-style-type: none"><li>• More fuel-efficient vehicles</li><li>• Use of alternative energy sources (biofuels, cleaner diesel, etc.)</li></ul>

		<ul style="list-style-type: none"> <li>• Better land-use and transport planning</li> <li>• Shift from individual transport to public transport systems</li> <li>• More efficient driving practices</li> <li>• Non-motorized transport (cycling, walking)</li> </ul>
3	Industry	<ul style="list-style-type: none"> <li>• Process-specific technologies that improve efficiency and reduce emissions</li> <li>• Material recycling and substitution</li> <li>• Heat and power recovery/cogeneration</li> <li>• Control of greenhouse gas emissions</li> </ul>
4	Agriculture	<ul style="list-style-type: none"> <li>• Manure and livestock management to reduce CH<sub>4</sub> emissions</li> <li>• Improved fertilizer application techniques to reduce N<sub>2</sub>O emissions</li> <li>• Improved crop and grazing land management to increase soil carbon storage</li> <li>• Restoration of cultivated peaty soils and degraded lands</li> <li>• Agro-forestry practices</li> </ul>
5	Forestry	<ul style="list-style-type: none"> <li>• Reduced deforestation</li> <li>• Afforestation/reforestation</li> <li>• Forest management</li> <li>• Tree species improvement to increase biomass productivity and carbon sequestration</li> </ul>
6	Waste	<ul style="list-style-type: none"> <li>• Landfill methane recovery</li> <li>• Waste incineration with energy recovery</li> <li>• Composting of organic waste</li> <li>• Controlled wastewater treatment</li> <li>• Recycling and waste minimization</li> <li>• Biocovers and biofilters to optimize CH<sub>4</sub> oxidation</li> </ul>

## Chapter - 7

### **Inclusive Disaster Risk Reduction: -**

#### **7.1 Background: A need to include Persons with Disabilities**

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

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

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

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

#### **7.2 Legal framework to support the inclusion of persons with disabilities**

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

The Millennium Development Goals have the potential to make life better for billions of people in the world’s poorest countries. However, disability is currently not included in indicators and targets to help evaluate and monitor the achievement of the MDGs. Furthermore, persons with disabilities are often excluded from international and national poverty reduction strategies. Environmental dangers and natural disasters can lead to the onset of many types of disabilities, and inaccessible environments prevent persons with disabilities from taking part in economic and social activities. Human and environmental recovery is vital for the achievement of MDG Goal 7, “Ensure Environmental Sustainability”. The MDGs cannot be achieved without the inclusion of all persons in society, including persons with disabilities.

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

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

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

### **7.3 Responding to the needs of persons with disabilities**

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

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

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

### **7.4 Data Collection**

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

### **7.5 Policy, Institutional Mechanisms and Inclusive Standards**

Policies and their implementation need to be inclusive. Odisha State Disaster Management Plans has already laid the foundation of an inclusive strategy. OSDMA has set up a cell for persons with disabilities headed by a person with disability. The cell will look into inclusion in EWS, SER, rehabilitation and

resettlement. Impart training for response forces ODRAF, Red Cross, Civil Defense and community level task force volunteers. Monitoring accessibility in shelters will also be work of the cell.

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

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

**Table-7.1-Information on PWD**

Information on Population Requiring Special Care										
Sl. No.	Block	Gram Panchayat	Village	Total No. of HHs	Total Population	No. of HHs Having by PWD	No. of Persons with Physical Disability (PWD) per village		No. of persons with Mental disability	
							M	F	M	F

**Table-7.2-Information on vulnerable women and children**

No. of HHs headed by Women	Child Population per village		No. of Widow per village	No. of Orphans per village	
	0-5 Years	6-14 Years		M	F

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

Information on Population Requiring Special Care								
Sl. No.	Block	Gram Panchayat	Village	Total No. of HHs	Total Population	No. of Aged Persons (60 and above) per village		No. of Pregnant and lactating mothers per village during the information collection
						M	F	

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

- **Pre-Disaster:** Identification of special needs of physically challenged and mentally challenged persons. Make necessary Planning for evacuation of people with special needs with special care and compassion. The DDMP should outline adequate training and orientation of field level functionaries who are normally engaged as frontline worriers of disaster management at grass roots. Special responsibility may be entrusted with the appropriate officials at block level to ensure the execution of the plan. The district must ensure that the committees and groups created in the district for the disaster management pursuits **has adequate representation from the vulnerable section of the society** as outlined above.
- **During Disaster:** Appropriate Relocation of the people in the shelter with special care, priority in meeting the needs of such population, organizing medical attention if needed.
- **Post disaster:** Ensuring careful & safe return of such people to home, prioritisation during relief distribution, prioritisation of rehabilitation & reconstruction efforts

## Chapter – 8

### Safety of Schools & Child Care Institutions:

#### 8.1 School Safety Initiatives:

'School Safety' has been defined as the creation of safe environments for children starting from their homes to their schools and back. This includes safety from large-scale 'natural' hazards of geological/climatic origin, human-made risks, pandemics, violence as well as more frequent and smaller-scale fires, transportation and other related emergencies, and environmental threats that can adversely affect the lives of children. The concept has evolved over the last couple of decades as the threat to the physical well being of children has become more visible both globally and in the country.

Under the School safety initiatives the following activities carried out at different levels:

1. School and Mass Education Department of Odisha have issued instructions to all the Collectors and Dist. Education Officers to implement the School Safety Policy 2016 vide his letter no: 3437(30)/Plg/18 dt: 05.04.2018.
2. State Level School Safety Advisory Committee has been constituted by vide order no: 4824/SME dt: 08.03.2018.
3. The district level School Safety Advisory Committee has been constituted.
4. Instruction has already been issued to all the Blocks clusters to constitute the Block level School Safety Advisory committee.

The detailed report is given below:

#### **Part I:**

District:	Puri
Total Block/ULB	11
Total Cluster	
Total Village / wards	1772
Total Schools	2501
Total Govt. schools	2026
Total Govt. Aided Schools	218
Total Pvt. Schools	257
Total Govt. schools – Urban	116
Total Govt. schools – Rural	1910
Total Govt. schools – Elementary	1838
Total Govt. Schools – secondary	188
Has the school Safety Advisory Committee has been constituted at the Dist. Level	

**Part - II (Status of implementation of the National Guideline on School Safety)**

Sl no	Activity	Status		
		Completed	To be Completed	Total
1	No of School which have finalised the School Disaster Management Plan (SDMP)	0	2501	2501
2	No of Schools which have conduted Safety Audit			
3	a) Structural	182	1431	2319
4	b) Non- structural	0	2501	2501
5	No of Schools have conducted Annual Mock drills	39	2462	2501
6	No of Schools where fire extinguisher have been installed	1682	809	2501
7	No of Schools which adhere to Safety Norms with respect to storage of Inflammable and Toxic Materials	0	2501	2501
8	No of schools confirm to the safety standards as per local building bye-laws (As approved by Local authorities)	0	2501	2501
9	No of schools which have been issued "Recognition Certificate" under sub-rule (4) Rule 15 of RTE Rules 2010 (only to schools that comply with structural safety norms)	0	2501	2501
10	No of schools where students and teachers undergo regular training in school safety and disaster preparedness	0	2501	2501
11	No of schools where disaster management is being taught as part of the curriculam.	0	2501	2501

## 8.2 Child Care Institutions:

SI No	Name and Address of the Organisation	Boys	Girls	Total No of Children	Name and Contact of the Shift in Charge	Fire Safety Equipment (Fire Extinguisher, Alarm)	Staff Training on Fire Safety Equipment	Near by open Space for evacuation	Alternative Shelter
1	Acharya Harihar Sishu Bhawan, Sakhigopal, Puri GP- Jaypur, Block- Satyabadi)	50	0	50	Swarnalata Nayak, Asst Superintendent , 9437280290, <a href="mailto:ahsborissa@gmail.com">ahsborissa@gmail.com</a>				
2	Children's Home-Nilachal Seva Pratisthan, Kanas, Puri ( GP- Gadasahi, Block- Kanas)	70	78	148	Abhimanyu Sundaray, Superintendent , 9937097081, <a href="mailto:nspcci1@gmail.com">nspcci1@gmail.com</a>				
3	Adruta Children's Home, Baliguali, Puri(GP- Baliguali, Block- Puri Sadar)	2	0	2	Dillip Bhoi, Superintednent -9658235582, <a href="mailto:puriadrutahome@gmail.com">puriadrutahome@gmail.com</a>				
4	Utkal Balashram, Narendra Kona, Puri, Ward No. 21, Puri Municipality	47	55	102	Mr. Sarang Mohapatra, Superintendent , 9938496526, <a href="mailto:utkalbalashram.puri@gmail.com">utkalbalashram.puri@gmail.com</a>				

5	AVA ( Children's Home), Delang, Puri (GP-Berboi, Block-Delang)	14	13	27	Swarnalata Pradhan, 7873737014, avaorg.puriorisa@rediffmail.com				
6	Draupadi Mahila Samiti, Uttarahana, Puri ( GP- Kerandipur, Block- Puri Sadar)	33	13	46	Ms. Basanti Parida, Superintendent , 8895719041, draupadimahilasamiti@gmail.com				
7	Missionary of Charity( Brothers)Christo Jyoti Ashram, Baliapanda, Puri Ward No-6 ,Puri Municipality	8	0	8	Anuranjan MC, Superintendent , 9437170957, <a href="mailto:mcbpuri2@gmail.com">mcbpuri2@gmail.com</a>				
8	Sri Saradaniketan, Uttara Sasan, Kausalya Nagar, Uttara, Bhubaneswar GP- Pubasasan, Block-Pipili)	15	0	15	Rabindra Kumar Tripathy, Office Asst- 9437302249, welcomesbbsr@rediffmail.com				
9	Care India Charitable Trust, Penthakata, Puri (Ward No-25, Puri Municipality)	18	13	31	P. Prasanna Kumar, Manager- 8984130506, careindiacharitabletrustpuri@gmail.com				
10	SAA-Nilachal Seva Pratisthan, Kanas, Puri ( GP- Gadasahi, Block-Kanas)	9	9	18	Priyanka Priyadarsini Pattanaik, Superintendent , 9692255325,				

					nspcci1@gmail.com				
11	Open shelter, Sarbodaya Nagar, Puri(Ward-28, Puri Municipality)	10	15	25	D. Himansu, Coordinator um Counsellor, 9439058213, indrush@gmail.com				
	<b>Total</b>	<b>276</b>	<b>196</b>	<b>472</b>					

## **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, Jharsuguda, 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

**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
								YES / NO			

## 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

## 9.3 Statutory Compliance of the Factories/Industries

Table-9.4

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

#### 9.4 Nearest Hospital Details of the Factories/Industrial Units

Table-9.5

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

#### 9.5 Nearest Fire Station of the Factories/Industries

Table-9.6

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

## 9.7 Stakeholders to be informed in case of an Industrial Accident

Table-9.7

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

## 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
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### 9.9 Specialized Response Forces

**Table-9.8**

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

### 9.10 Mock Exercises on Nuclear/Radiological Disaster

**Table-9.9**

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

## Chapter-10

### Biological Disaster and Public Health in Emergencies: -

#### 10.1 Biological Disaster Management & Medical Preparedness

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

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

**Table 10.1 Nodal Departments for Managing Biological Disaster**

Sl No.	Bio Disaster	Nodal Department	Contact person	Contact details (Office/Mobile)
1	Biological Disaster	H&FW Department	CDMO (District)	
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**

SL	Member	Dept./Instt.	Contact Details

**Table 10.3 Task Force**

SL	Member	Dept./Instt.	Contact Details

**Table 10.4 Technical Experts**

SL	Member	Dept./Instt.	Contact Details

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

**10.5 Nodal Public Health Institution**

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

**10.6 Collaborative Institutions**

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

**10.4 Preventive Measures**

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

- An epidemiological intelligence gathering mechanism to deter a BW/ BT attack;
- A robust surveillance system that can detect early warning signs, decipher the epidemiological clues to determine whether it is an intentional attack;
- Capacity building for surveillance, laboratories, and hospital systems that can support outbreak detection, investigation and management.
- Developing a biological disaster response plan
- Pre-exposure immunisation (preventive, if available any) of first responders against anthrax and smallpox must be done to enable them to help victims’ post-exposure.

#### 10.4.1 Pre-Disaster Preventive Measures

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

**Table 10.7 Important/Critical Infrastructure**

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

#### 10.4.2 Post-Disaster Preventive Measures

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

#### 10.8 Infrastructure that can be used as quarantine centres

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

#### 10.5 Disease Containment by Isolation and Quarantine Methodologies:

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

#### 10.6 Preparedness and Capacity Development

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

##### 10.6.1 Establishment of Command, Control and Coordination Functions

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

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

### **10.7 Training & Education**

- Necessary training /refresher training must be provided to medical officers, nurses, emergency medical technicians, paramedics, drivers of ambulances, and QRMTs/ MFRs to handle disasters due to natural epidemics/ Bio disaster.
- Structured education and web-based training must be given for greater awareness and networking of knowledge so that they are able to detect early warning signs and report the same to the authorities, treat unusual illnesses, and undertake public health measures in time to contain an epidemic in its early stage.
- Refresher training will be conducted for all stakeholders at regular intervals. An adequate number of specialists will be made available at various levels for the management of cases resulting from an outbreak of any epidemic or due to a biological disaster.
- Standardised training modules for different medical responders /community members for capacity building in the area of disaster management developed by state government or national government should be followed to create adequate training facilities for the same.
- Selected hospitals will develop training modules and standard clinical protocols for specialised care, and will execute these programmes for other hospitals. Table-top exercises using different simulations will be used for training at different levels followed by full-scale mock drills twice a year.
- A district-wise resource list of all the laboratories and handlers who are working on various types of pathogenic organisms and toxins will be prepared.
- BDM related topics will be covered in the various continuing medical education programmes and workshops of educational institutions in the form of symposia, exhibition/demonstrations, medical preparedness weeks, etc.
- Biological disaster related education shall be given in various vernacular languages. Simple exercise models for creating awareness will also be formulated at the district level.
- Biological disaster plans will be rehearsed as a part of training every six months.
- Knowledge of infectious diseases, epidemics and BT activities will be incorporated in the school syllabi and also at the undergraduate level in medical and veterinary colleges.

### **10.8 Community Preparedness**

Community members including public and private health practitioners are usually the first responders, though they are not so effective due to their limited knowledge of BDM. These people will be sensitised regarding the threat and impact of potential biological disasters

through public awareness and media campaigns. The areas which need to be emphasised are:

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

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

### **10.9 Medical Preparedness**

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

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

- Hospital disaster planning will consider the possibility & needs to evacuate or quarantine or divert patients to other facilities.
- The plan will be ‘all hazard’, simple to read and understand, easily adaptable with normal medical practices and flexible enough to tackle different levels and types of disasters.
- The plan will include capacity development, development of infrastructure over a period of time and be able to identify resources for expansion of beds during a crisis.
- The plan will be based on the need assessment analysis of mass casualty incidents. There will be a triage area and emergency treatment facilities for at least 50 patients and critical care management facilities for at least 10 patients.
- The quality of medical treatment of serious/ critical patients will not be compromised. The development plan will aim at the survival and recuperation of as many patients as possible.
- Hospitals will plan to recruit a sufficient number of personnel, including doctors and paramedical staff, to meet the patients’ needs for emergency care.
- It is essential that all hospital DM plans have the command structure clearly defined, which can be extrapolated to a disaster scenario, with clear-cut job definitions when an alert is sounded. Emergency services provided must be integrated with other departments of the hospital.
- The hospitals will submit data on their capabilities to the district authorities and on the basis of the data analysis, the surge capacities will be decided by the district administration.
- There is no universal hospital DM plan which can be implemented by all hospitals in all situations. Therefore, on the basis of their specific considerations, each hospital will develop a disaster plan specific to itself. The plan shall be available with the district administration and tested twice a year by mock drills.
- The hospital DM plan will cater to the increased requirement of beds, ambulances, medical officers, paramedics and mobile medical teams during a disaster. The additional requirement of disease related medical equipment, disaster-related stockpiling and inventory of emergency medicines will also be factored into the hospital DM plan. The DM plan must be strengthened by associating the private medical sector.
- Networking between public and private hospitals must be done and hospital DM plans need to be updated at the district/state level through frequent mock drills.
- The registration and accreditation policy must make it mandatory to have a hospital DM plan.
- The existing infectious diseases hospitals will be remodelled to manage diseases with microorganisms that require a high degree of biosafety, security and infection control practices. There will be one such hospital in each state capital. In addition, the district hospitals and medical colleges will have isolation wards to manage such patients. Also, identified hospitals in vulnerable states will be strengthened for managing CBRN disaster victims by putting in place decontamination systems, critical care Intensive Care Units (ICUs) and isolation wards with pressure control and lamellar flow systems. The infectious control practices will include the following:

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

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

**Table 10.9**

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

- **Mobile Hospitals and Mobile Teams**

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

- To be mobilised to the disaster site for management of cases at times of any epidemic outbreak or biological disaster.
- Provide on-site medical treatment to casualties as per triage and evacuation guidelines. The teams will also make a complete assessment of the situation and transmit information to the appropriate authorities.
- Additional medical teams will be mobilised to assist in handling the large number of casualties in the wake of a mass casualty event.
- Adequate stock of medical stores, including essential drugs, will be stocked and made available to the medical teams.

- The stocking of emergency medical stores shall be done by the state government. Brick of medical stocks capable of treating 25/50/100 casualties will be kept ready to move with mobile units at short notice.
- Drills will be conducted at regular intervals by mobile hospitals and mobile teams to keep them in a functional mode at all times.

**Table 10.10 Mobile Hospitals & Health Teams**

Sl	Mobile Hospitals & Health Teams	Nodal Person	Contact Details

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

**Table-10.11-Stockpile of Medicines**

Sl	Medicine/Drugs	Actual Requirement	Present availability

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

- Complete ban on the press or media is not the right approach in such circumstances. The media is very useful for disseminating proper information and educating the community during a disaster.
- **Emergency Medical Response**

A biological disaster can lead to mass casualty incidences, both intentional or otherwise. The development of infectious diseases depends on various factors such as type of agents, incubation period, immune status of individuals, amount of infectious agent entering the body, etc. However, a large number of cases arising in a short span of time may require prompt establishment of medical posts near the incident site. They would triage the patient, provide basic life-support if required at the site, and transport patients to the nearest identified health facility along with collection and dispatch of biological and environmental samples. If the incident command system is implemented, then the RRT/MFR will be integrated with the ICP and function under the overall directions of the incident commander. Important components of an EMR plan are as follows:

  - Pre-hospital care shall be established and operationalised using a trained medical force. EMR at the site will depend upon the quick and efficient response of MFRs.
  - MFRs must be trained in the use of PPE and in collection and dispatch of samples from air, water, food and biological materials. The standards for detection and basic life support (airway maintenance, ventilation support, anti-shock treatment and preparation for transportation) will also be developed. EMR will be integrated with ICP and will function under the overall directions of the incident commander
  - There will be periodic mock drills for checking response time and reducing it to a minimum. Periodic training and refresher training schedules will also be prepared.
  - The medical posts shall provide evacuation services, specialised health care, food, shelter, sanitation, etc. These will coordinate with other functionaries involved in search, rescue, helplines and information dissemination, transport, communication, power and water supply, and law and order.
  - SOPs for providing hospital care and a command control centre with the district collector as supreme head, will be laid down and rehearsed using mock exercises.
  - The modes of communication will be dovetailed with emergency services of the district. Inter-hospital and inter-services communication will be established at all levels.
  - Mechanisms for checking the status of coordination in planning, operations and logistic management will be developed.

### **10.10 Psycho Social Care**

Disasters usually leave a trail of human agonies including loss of human life, livestock, damage to properties, loss of livelihood, and all development works. In any disaster the magnitude of psychosocial and mental health problems is enormous. Apart from logistic and material help, relief and rehabilitation, the sufferings of human beings will require psychosocial and mental health interventions. It has been recognized that most of the disaster affected persons' experience stress and emotional reactions after disaster as a 'normal response to an abnormal situation', and are able to cope well with a little psychosocial support. However, a significant proportion of people are not able to cope

effectively with the situation in the absence of appropriate/ adequate support system and they experience significant signs and symptoms requiring psychosocial support and mental health services. The symptoms are directly related to trauma experience. The Greater the trauma, the more severe is the response if other factors are same.

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

### 11 Disaster Mental Health Services

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

**Table-10.12 Nodal Psycho Social Health Institution**

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

**Table-10.13-Collaborative Institutions**

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

### 13 Community Based Disaster Psychosocial Care

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

in terms of providing mental health services and undertaking research to study the psychosocial impact of these disasters.

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

**Table-10.14 Volunteers & Paramedical Staffs (Community)**

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

### Concept of Social Support Network

The psychological response to a disaster depends on three main factors

**Table-10.15**

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

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

**Table-10.16**

Adaptive	Maladaptive
<ul style="list-style-type: none"> <li>• Adaptive responses allow individuals to overcome the difficulties caused by the disaster.</li> <li>• For instance, obtaining information or developing effective survival skills.</li> </ul>	<ul style="list-style-type: none"> <li>• Maladaptive reactions can include denial, ineffective actions etc. reactions can be prevented from occurring and if they do occur then they can be treated.</li> <li>• The incident of a young girl can be considered here from Orissa cyclone.</li> </ul>

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

**Table-10.17**

Phases after a Disaster	Duration	Characteristics
Occurrence of the disaster	Hours	Apathy, Disorientation, Wandering Surprise, Fear, Perplexity Anxiety, Helplessness
Heroic	Up to 1-2 weeks	Feeling strong, Direct feeling of saviour, eroism, Solidarity, Optimism
Honeymoon	2 weeks to 3 to 6 months	Great solidarity, Eagerness to rebuild, Sharing of common experience
Disillusionment	2months to 2 years	Withdrawal, Loneliness, Anger, frustration, Community disorganization, Negativity, Hostility, Impulsiveness, Violence, Alcohol and drug abuse
Reconstruction	2-5 years and Lifetime	Acceptance of losses Realistic assessment of the situation, Search for alternatives to rebuild lives

#### 14. Coping with Loss & Circles of Support

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

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

## 15. Needs of More Vulnerable Groups

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

**Table-10.18**

Category	Exposure/Vulnerability
Children	<ul style="list-style-type: none"> <li>• Children who were physically, neurologically, mentally and sensory challenged in the pre-disaster period and those who became disabled after the disaster</li> <li>• Children who need critical medical care facilities e.g. children suffering from cancer, diabetic, asthma, poor heart condition, blood borne diseases, HIV-AIDS, etc.</li> <li>• The children with special needs who become orphans after a disaster, are most vulnerable to different types of exploitation.</li> <li>• Orphaned and unaccompanied Adolescent children, especially girls Children whose parents are missing or remarried</li> </ul>
Women	<ul style="list-style-type: none"> <li>• Pregnant and lactating women</li> <li>• Disabled women</li> <li>• Women on critical health care facility</li> <li>• Women who lost their children and plan to undergo recanalization surgery</li> <li>• Elderly women</li> <li>• Women with prior history of psychiatric illness</li> </ul>
Elderly	<ul style="list-style-type: none"> <li>• Reduced physical &amp; mental capabilities, delayed response syndrome,</li> <li>• increased transfer trauma &amp; the array of emotional difficulties,</li> <li>• dementia, and rigidity</li> </ul>

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

- Accessibility to shelters and availability of basic amenities
- Availability of auxiliary aids, equipment's and services during the relief
- Special livelihood programme
- Treatment for any associated psychiatric illness
- Long-term community rehabilitation

- People on Dialysis
- People with organ transplantation
- Alcohol/drug dependents
- Heart patients
- People living with HIV/AIDS (PLWHA)
- People on Specific therapies (such as Cancer patients)
- Insulin dependent diabetics on high doses of insulin

#### **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 abnormal situation
- Disaster results in two types of trauma i.e. individual and collective trauma. Individual trauma manifests itself in stress and grief reactions, while collective trauma can lead to deterioration in the social ties of survivors with each other.
- Disaster mental health services must be tailored to the needs of specific communities to be served
- Interventions must be appropriate to the phase of disaster 1. Initial phase: listening, supporting, ventilation, catharsis and grief resolution are helpful and 2. latter phase: handling frustration, anger and disillusionment
- Support systems are crucial for recovery
- Attitude of the caregiver

#### **17. Basic Techniques of Disaster Psychosocial Care**

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

- Turning towards Religion and Spirituality: Helping people to turning towards his/her practiced religious rituals and practices (e.g. daily worship, prayer and related activities) would also facilitate the ventilation process, whereby there is a possibility of verbal/nonverbal expression of feeling/emotions and thus, making the survivor more peaceful in mind.

### 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 remain in understanding the occurrence and modification of stress response.

**Table10.19**

Emotional	Interpersonal	Sensational	Biological	Behavioural	Cognitive
Anxiety Guilt Embarrassment Depression Hurt Jealousy Feel like dying Cry frequently Moody	Cannot keep relationships Suspicious Gossip Competitive Withdraw Fearful and unassertive Aggressive	Heart rate Headaches Nausea Aches and pain Tremble Fainting Numbness Dry mouth Stomach cramps Sweaty Indigestion	Digestion problems Blood pressure Heart problems Tiredness Allergies Low immunity Mental problems	Substance dependence Sleep problems Tea smoking Restless Eating problems Aggression Irritation Speech problems Accident prone Eat, talk, walk faster Unkempt and 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**

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

## Relaxation Exercises

**Table 10.21**

<b>Abdominal breathing</b>	» 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
<b>Count breathing</b>	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
<b>Nostril breathing</b>	» 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

<b>Free Meditation</b>	<ul style="list-style-type: none"> <li>» Sit comfortably or lie down and close your eyes</li> <li>» Put on some music and listen to the music</li> <li>» Do not try to think of anything, just concentrate on your breathing</li> <li>» 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</li> <li>» 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</li> </ul>
<b>Candle meditation</b>	<ul style="list-style-type: none"> <li>» Sit comfortably</li> <li>» Light a candle or a lamp in front of you</li> <li>» Concentrate on the flame</li> <li>» Spend time just looking at the flame glowing and flickering</li> <li>» If you feel after some time close your eyes and look at the image in your mind</li> <li>» Slowly open your eyes after you are completely at ease</li> <li>» 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</li> </ul>
<b>Relaxation</b>	<ul style="list-style-type: none"> <li>» Lie down on the ground</li> <li>» Slowly move from your feet to your head saying the following to yourself</li> </ul>

## Disaster Psychosocial Referrals

**Table-10.22**

<b>Within Caregiver’s Control if the Survivor:</b>	<b>Referral if the Survivor:</b>
<ul style="list-style-type: none"> <li>» Is aware of who s/he is, where s/he is, and what has happened with him/her.</li> <li>» Is only slightly confused or dazed or show slight difficulty in thinking and decision making or finding difficulty in concentrating</li> </ul>	<ul style="list-style-type: none"> <li>» Is unable to tell/recall his/her name, name of the place and what has happened to him/her in past 24 hours</li> <li>» Complains about what is happening with him/her</li> </ul>
<b>Behaviour</b>	
<ul style="list-style-type: none"> <li>Is restless, mildly agitated and excited</li> <li>» Has sleep difficulty and decreased appetite</li> <li>» Sad, rigid, clenches the fists</li> </ul>	<ul style="list-style-type: none"> <li>Is apathetic, immobile and unable to move around</li> <li>» Is withdrawn and mutilates himself/herself, does not take care of self</li> <li>» Violent and causes harm to others</li> <li>» Uses alcohol or drugs</li> <li>» Repeats ritualistic acts as compulsions</li> </ul>
<b>Emotions</b>	
<b>Within Care giver’s Control if the Survivor</b>	<b>Consider Referral if the Survivor</b>
<ul style="list-style-type: none"> <li>» Is crying and weeping consistently by reiterating about the incident</li> <li>» Has blunt emotions, is numb and hardly reacts correctly to his/her environment</li> <li>» Easily irritated and angered over trivial issues</li> <li>» Shows high spirits or laugh excessively</li> </ul>	<ul style="list-style-type: none"> <li>» Is unable to be aroused and is completely withdrawn</li> <li>» Is excessively emotional and shows inappropriate emotions</li> <li>» Is excessively happy, or sad and depressed</li> </ul>

» Very quiet with no emotions	
<b>Perception</b>	
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
<b>Within Care giver's Control if the Survivor</b> » Talks excessively about the disaster » Refuse to talk much » Has rapid or stammered speech	<b>Consider Referral if the Survivor</b> » Is talking irrelevant » Shows overflowing of incoherent speech » Does not talk at all for days together
<b>Thought</b>	
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 an unbiased manner
- Helping the co-workers and taking care of your self is very crucial.
- Whenever, the pressure of work or dealing with human suffering become stressful for you, seeking help and support is a must.

# Chapter – 11

## Capacity Building Measures:

### 11.1 Approach

Developing a DDMP without building capacity or raising awareness amongst stakeholders can be detrimental to the development of a successful and sustainable plan. Stakeholders and communities are critical components to a successful, long-term, sustainable disaster management plan. Capacity Building develops and strengthens skills, competencies and abilities of both Government and non-government officials and communities to achieve their desired results during and after disasters, as well as preventing hazardous events from becoming disasters

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.

### DRR Programmes/CBDRR

#### **Disaster Risk Management Programme by UNDP 2002-2007:**

Puri district was one of the programme districts among the districts in which Govt of India-UNDP initiated the programme in 28 districts of Orissa, Bihar and Gujarat along with national level capacity building support to the Ministry of Home Affairs (MHA). 4 The Community based approach that was envisaged in the programme has been wellreceived by communities, Panchayati Raj Institutions (PRIs) and State Governments in the 3 pilot states in Phase I, where successful partnerships have been established with Governments, civil society, as well as private sector. A group of international and national experts evaluated the approach and process under this programme, and rated it as an effective and sustainable initiative. The team also noted that the approach and scale make it a pioneering initiative. Following the successful initiation of activities in Phase I, The Government of India has formulated The National Disaster Management Framework and Roadmap for the country with UNDP support, making this programme a platform for future National initiatives in disaster risk management. The Government of India has taken initiative in mobilising resources for this programme from bilateral and other funding partners.

#### **Climate Change Adaption-Disaster Risk Reduction Project: 2015-2017**

Project Title: Scaling up Sub-national Climate and Disaster smart development in India

Lead Agency: Gorakhpur Environmental Action Group (GEAG)

In Association with : National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India and Institute of Social and Environmental Transition (ISET), USA

Project Funded by: Climate and Development Knowledge Network (CDKN)

Project Period: March 2015-May 2017 (Subject to the continuous support of CDKN)

Objective of the project: The overall Objective of the project is to mainstream disaster management and adaptation to climate change within sub-national government to build the resilience of the most vulnerable.

Selected Districts: Puri (Odisha) and Almora (Uttarakhand)

Major Activities under the project-

- Primary and Secondary Data Collection- From then rural and urban vulnerable population regarding perception on hazards
- Climate data collection and projections for future climatic trends-Based on the secondary data of cyclone, wind, rainfall, events, losses, etc
- Review of existing DDMPs and departmental plans
- District level Inception/Introduction meeting with government and other stakeholders
- Two rounds of Shared learning dialogue/Meetings with line departments which are involved in disaster management plans-Round one for vulnerability and gap analysis and round two for identifying potential resilient options and integration in planning
- Revision of DDMP based on SLDs outcome
- Training module development for officials and professionals on CCA-DRR integration
- M&E framework development
- Intra and inter-state sharing of learning
- Training of officials/professionals by NIDM after training module development

Key Deliverables:

- Improved understanding on Departmental gaps and sectoral vulnerability/capacity
- Revised DDMP document by June 2016-Based on findings and options
- Training module and training
- M&E framework to monitor DRR/CCA intergration
- District Collector's Handbook on mainstreaming DRR-CCA

**GOI-UNDP project on “Enhancing Institutional and Community Resilience to Disasters and Climate Change (2013-2017)”** provide technical support for strengthening capacity of stakeholders including communities and institutions to fast-track implementation of the planning frameworks on Disaster Risk Reduction and Climate Change Adaptation. The project is being implemented in Odisha since Nov 2013. To strengthen the project activities District Disaster Management Plans of three project districts i.e. Ganjam, Kendrapara, Puri are being revised. It was decided by OSDMA to initiate the review of the DDMPs in the three project districts of Puri, Kendrapara and Ganjam. The learning from this process would be used for conducting similar exercises in the remaining 27 districts in due course as part of State Government's initiative.

## Objectives

- To share with the participants DDMP review findings in the respective district.
- To collect relevant data and information from key line departments in order to update DDMPs.

## 11.2 Capacity Building of Govt. Officials, PRI Members etc.:

The Puri District Administration has prepared the Capacity Building plan for the district and the same with detailed budget will be placed before SDMA for necessary funding.

Sl. No	Activity-cum-Training	Participants	Strength	No. of batches	Duration	Schedule (tentative)	Organised by
1	Heat Wave Awareness/ Preparatory Workshop & Implementation of Heat Wave Action Plan (HAP)- 2018	District Level Line Departments Officers, all BDOs/all Tahasildars	80	1	1 Day	March	DDMA/ DEOC
2	DDMA Meeting	DDMA members	10	1	1/2 Day	March	DDMA/ DEOC
3	NGO Coordination Meeting	NGOs / Volunteers	25	1	1/2 Day	March	DDMA/ DEOC
4	District level workshop for Preparation/ Updation of District/Block Disaster Management Plan (DDMP/BDMP)- 2019	District /Block Level Line Dept. Officer & Others.	90	1	1 Day	March	DDMA/ DEOC
5	District Level Workshop on preparation of VDMP (Village Disaster Management Plan)- 2019.	District/ Block Level Officers, Nodal Officers / NGOs	50	1	1 Day	April	DDMA/ DEOC

6	District Orientation training programme on Disaster Management.	ADM, Sub-Collector All BDOs, Tahasildars, Head of line departments, Police & Fire Dept. etc.	70	1	1 Day	April	DDMA/DEOC
7	District level hands on training programme for officials on IDRN	District level Officials of different departments and stakeholders.	60	1	1 Day	April	DDMA/DEOC
8	Role of NGOs/VOs/CBOs in disaster management.	NGOs / Volunteers	30	1	1 Day	April	DDMA/DEOC
9	Role of PRIs & ULBs in Disaster Management.	Chairman/Co uncilors ULBs, Officials	80	1	1 Day	May	DDMA/DEOC
10	Role of PRI members (ZP) in Disaster Management.	President/Vice President,ZP/ All Members of ZP.	40	1	1 Day	May	DDMA/DEOC
11	District level workshop on Departmental Disaster Management Plan.	District level Officials of different departments.	60	1	1 Day	May	DDMA/DEOC
12	Block Level Training on Role of PRI members in Disaster Management.	Chairman/Vice Chairman,Sar panch &PS Member.	50	3	1 Day	May	DDMA/BDO
13	Preparatory meeting for Flood of DLNCC & DDMA Meet	Blocks/ Tahasils/ Line Departments / PRIs	80	1	1 Day	June	DDMA/DEOC

14	Workshop/ Training on Preparation of SDMP/SSP.	DEO,DPC(SSA ,all BEOs,CRCC and Others	40	1	1 Day	June	DDMA
15	Training of HMs on Preparation of School Disaster Management Plan/School Safety Programme.	HMs of HSs	40	3	1 Day	June	DEO/BE O
16	District level Preparatory meeting Mock Exercise on Cyclone/Flood	District/Block Officials CSMMC / MFSMMC members	60	1	1 Day	June	DDMA
17	Block Level Training on Role of PRI members in Disaster Management.	Chairman/Vic e Chairman, Sarpanch &PS Member.	50	3	1 Day	June	DDMA/ BDO
18	DDMA Meeting	DDMA members	10	1	1/2 Day	June	DDMA/ DEOC
19	Mock Exercise on Cyclone/Flood on 19th June.	District Level/Block/ MFS Level			1 Day	June	DDMA
20	District Level awareness/capacit y building /action plan workshop on Lightning	District/Block Officials and Medical staff	70	1	1 Day	June	DDMA
21	District Level Workshop on Role of NGOs/VOs/CBOs in Disaster Management.	NGOs / Volunteers	100	1	1 Day	June	DDMA/ DEOC
22	Workshop on Approval of DM Plan-2019 by DDMA	DDMA members	10	1	1/2 Day	July	DDMA/ DEOC

23	Block Level Training on Role of PRI members 2nd Tire in Disaster Management.	Chairman/Vice Chairman, Sarpanch & PS Member.	50	2	1 Day	July	DDMA/BDO
24	District Level ToT on Drought Management for Farmers Clubs Members	Staff of Agriculture/R evenue/Co-operation.	50	1	1 Day	July	DDMA/DDA
25	Preparatory meeting on Mock Exercise for Rath Yatra 2018	District line deptts, OSDMA, Fire Service, Home Deptt., ODRAF, St. John Ambulance, Etc.	100	1	1 Day	July	OSDMA/DEOC
26	Mock Drill on Crowd Management on the Occasion of Rath Yatra 2019	District line deptts, OSDMA, Fire Service, Home Deptt., ODRAF, St. John Ambulance, Etc.			1 Day	July	OSDMA/DEOC
27	Block Level Training on Role of PRI members 2nd Tire in Disaster Management.	Chairman/Vice Chairman, Sarpanch & PS Member.	50	2	1 Day	August	DDMA/BDO
28	DDMA Meeting	DDMA members	10	1	1/2 Day	August	DDMA/DEOC
29	Training of HMs on Preparation of School Disaster Management Plan/School Safety Programme.	HMs of HSs	40	3	1 Day	August	DEO/BE O
30	Block Level Training on Role of PRI members 2nd	Chairman/Vice Chairman, Sarpanch & PS Member.	50	2	1 Day	September	DDMA/BDO

	Tire in Disaster Management.						
31	Training of HMs on Preparation of School Disaster Management Plan/School Safety Programme.	HMs of HSs	40	2	1 Day	September	DEO/BE O
32	Orientation Workshop on DM Protocol for Child Care Institutions	Representatives of the CCIs, Key Line Agency Officials & Stakeholders	30	1	1 Day	September	DDMA/DEOC
33	Preparatory Meeting for observation of DP Day	Dist. Level Line Departments	30		1/2 Day	October	DDMA/DEOC
34	Observation of DP day	Dist. Level Line Departments/school students/ Fire Service, etc.	300		1 Day	October	DDMA/DEOC
35	Block Level Training on Role of PRI members 2nd Tire in Disaster Management.	Chairman/Vice Chairman, Sarpanch&PS Member.	50	3	1 Day	October	DDMA/BDO
36	Preparatory meeting on Tsunami Mock Drill (IOWAVE)	Dist. Level Line Departments	30		1/2 Day	October	DDMA/DEOC
37	Conduct of Tsunami Mock Drill (IOWAVE)	Dist. Level Line Departments	30		1/2 Day	October	OSDMA/DDMA/DEOC
38	Training of HMs on Preparation of School Disaster Management Plan/School Safety Programme.	HMs of HSs	40	2	1 Day	October	DEO/BE O
39	Training of Task Force Members at shelter level	Task Force Volunteers of Shelters	30 per shelter			October	OSDMA/DDMA/DEOC

40	Training of Task Force Members at shelter level	Task Force Volunteers of Shelters	30 per shelter			November	OSDMA/ DDMA/ DEOC
41	DDMA Meeting	DDMA members	10	1	1/2 Day	November	DDMA/ DEOC
42	Training of Task Force Members at shelter level	Task Force Volunteers of Shelters	30 per shelter			December	OSDMA/ DDMA/ DEOC
43	Workshop on Activities of District Crisis Group (DCG)	DCG Members & Stakeholders	30	1	1/2 Day	December	DDMA/ DEOC/ Asst. Director, Factorie s & Broilers, Bhubane swar

### 11.3 Tabletop Exercise:

*[Each year in the 1<sup>st</sup> week of April, Collector to organize a tabletop exercise involving all district and block level key officials to assess the emergency response plans for various disasters.]*

The objective of Table Top exercise is:

- To review the District Disaster Management Plan for Mitigation & Management of Cyclone / Flood / Heat wave.
- To facilitate in checking the adequacy of the Emergency
- To review the Response Plan of districts to meet the exigency.
- To highlight the roles and responsibilities of the concerned stakeholders at the District level.
- To enhance the coordination and synergize efforts of various Emergency Support Functions at the District level.
- To identify gaps if any, in the resources, manpower, equipment, communication and systems.
- To chalk out the empowerment plan the vulnerable groups to face disaster squarely with enhanced resilience.

On 16<sup>th</sup> Mar 2018, the DDMA along with other line department officials discussed the following:

- Heat wave action plan discussed and plan chalked out to take up the measures to combat the heat wave situation. All the departments such as CDMO, CDVO, BDOs, Tahasildars, RWSS, PHED instructed to present their plan of action for the year 2017

with respect to Khordha district. The gaps identified in the discussion were addressed.

- The DDMP for the year 2016 was reviewed by the DEO & DPO which was presented to the house and the content discussed.
- The new outline prepared for preparation of DDMP for the year 2017 discussed and all the line departments were instructed to provide the necessary information for the purpose.
- It was decided to discuss the flood preparedness measures on next exercise and the line departments instructed to bring their departmental preparedness and action plan to the exercise.
- The detailed empowerment plan for different stakeholders is given in Table 6.1, 6.3, 6.4, 6.5 in which different plans were chalked out to provide training.

#### **11.4 District/ Block level Mock Drills:**

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

Sl. No.	Type of Mock Drill	Officials / Institutions to be involved	Month / Date	Remarks
1.	Flood	All Blocks / Tahasildars / Line department Officials like EE, Irrigation (Puri & Nimapara), CSMMCs, NGOs	June	
2.	Cyclone	All Blocks / Tahasildars / Line department Officials like EE, Irrigation (Puri & Nimapara), CSMMCs, NGOs	June	
3.	Industrial Accidents/ Industry Specific Mock drills	Industrial safety wings/ NDRF / Fire Service / Director, Factories & Boilers / Administration	Quarterly	
4.	Railway Mock Drill	Railway Division Puri / Administration / NDRF/ Fire Service	February	
5.	Tsunami	All coastal Blocks / Tahasildars / Line department Officials like EE, Irrigation CSMMCs, NGOs	September	

#### **11.5 Disaster management Education (School Safety and School Disaster Preparedness):**

Disaster management education includes 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 Educational institutions to be covered during the year	Time Line	Remarks
1	Awareness on disasters and its impacts on students & Teachers	25	July - Dec	Schools will reopen by 26 <sup>th</sup> June 18, after that only we can organise the activities.
2	Preparation of School disaster management plan	25	July - Dec	
3	Training of Students and Teachers on First Aid Techniques	25	July - Dec	
4	Training Students and Teachers on Search & Rescue Techniques	25	July - Dec	
5	Mock drills for fire/ Cyclone /earth quake etc.	25	July - Dec	

### 11.6 Community Capacity Building and Community Based Disaster Management:

The plan is given below:

Sl. No.	Block Name	Total No of Villages	No. of vulnerable villages to be covered during 2018-19	No. of VDMC and task force member to be oriented	No. NGOs to be involved in the process	Time line	Remarks
1.	Astaranga	103	31	(31*10) 310	2	June - Dec	
2.	Brahmagiri	166	31	(31*10) 310	2	June - Dec	
3.	Delang	135	31	(31*10) 310	2	June - Dec	
4.	Gop	224	31	(31*10) 310	2	June - Dec	
5.	Kakatpur	114	31	(31*10) 310	2	June - Dec	
6.	Kanas	139	31	(31*10) 310	2	June - Dec	
7.	Krushnaprasad	127	31	(31*10) 310	2	June - Dec	
8.	Nimapara	241	31	(31*10) 310	2	June - Dec	
9.	Pipili	208	31	(31*10) 310	2	June - Dec	
10.	Puri Sadar	156	31	(31*10) 310	2	June - Dec	
11.	Satyabadi	96	31	(31*10) 310	2	June - Dec	
	Total	1709	341	(341*10) 3410	22		

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

### 11.7 Capacity building of Cyclone and Flood Shelter Maintenance & Management Committee and Task Force members:

**Community Based Cyclone Shelter Management and maintenance Committees (CSMMCs)** have been formed under the Chairmanship of local BDO and a volunteer from the community as Secretary and the buildings have been handed over to the concerned CSMMC for management and maintenance. Local Tahasildar, Medical Officer, Junior Engineer of the Block, Revenue Inspector, Head Master of the School, ANM and Anganwadi Supervisor are Ex-Officio Members of the Committee. Representatives from local NGO, from shelter and served villages, SHG and SC & ST communities are also members of the Committee. The CSMMC takes the charge of day-to-day management and maintenance of the building. Most of the buildings have been constructed in School premises so that the buildings will be used for School purposes during normal time. The CSMMC has also been authorized to put the building for economic / community uses like community house, kalyan mandap etc. and earn user fees. The amount so earned is kept in a joint account and as and when necessary spent for the purpose of maintenance of the building.

### **Capacity building of CSMMC**

The CSMMC members and Village Disaster Management Teams like on first-aid and search & rescue have been trained under DRM Programme. 25 volunteers per shelter have been trained on first-aid techniques by the trainers from St. John Ambulance. Similarly, 25 volunteers per shelter have been imparted training on search & rescue techniques by the trainers from Civil Defence organization. The shelters have also been given a linkage with the Village, GP & Block level plans prepared under the DRM Programme

### **Shelter Equipment**

Cyclone shelters have been provided with a number of shelter equipment like First Aid Box, Free Kitchen Utensils, Inflatable Tower Lights, Aluminium Ladder, Power Saw, Life Buoy, Life Jacket, Search Light, Stretcher, Siren, Flexi-Water Tank, Fire Extinguisher, Foldable Stretcher, Solar Lantern, Water Filter and Handheld Megaphone, etc. Most of the equipment will be used for Search & Rescue and shelter purposes. The CSMMC members and villagers have been trained on the use of equipment during disasters. The list of equipment is attached as annexure.

### **Before Disaster**

- Maintain list of equipment and materials provided.
- Ensure safe custody of the building and the equipment supplied/ to be supplied from time to time.
- Establish and maintain relation with field level officials of the different Government departments and NGOs for better preparedness and management of activities during disasters.
- Assure cyclone shelter is maintained well. All basic necessities for a stated capacity of population are fulfilled.

### **During Disaster**

- Open the shelters for use by people during disasters.
- Ensure safety and security of the population sheltered.
- Ensure facilities for women, children and the disabled.

### After Disaster

- Vacate the shelters after disaster.
- Clean the cyclone shelter.
- Make the shelters available for normal time. The committee can plan different use of cyclone shelter.

*[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 be organized	Time Line	Remarks if any
1	Orientation of CSMMC and FSMMC	500 (10 MFS & 10 MCS)	20	May – Dec	
2	Training of task force members on Search & Rescue	250	10	May – Dec	
3	Training of task force members on First Aid	250	10	May – Dec	
4	Dist. Level Trg. Of Trainers (SAR & FA)	40 – SAR 40 - FA	1 1	May June	

### 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	179	343	June
2	Tsunami Mock drill		88	September
3	Flood Mock drill	179	343	June

# Chapter – 12:

## Preparedness

### 12. PREPAREDNESS CHECKLIST

#### DISTRICT CONTROL ROOM

Check	District Control Room
	Vulnerability map of the Block.
	Resource Inventory, Capacity analysis.
	List of cut off areas with safe route map for communication.
	List of storage facilities, dealers of food.
	Control room setup / assignment of control room duty.
	Pre-positioning of staff for site operation centers.
	Arrangement of alternative communication/generator sets etc.
	Arrangement of vehicles of for evacuation.
	Dissemination of warning / coordination with District control room

#### SUB-DIVISIONAL MAGISTRATE

Check	Sub-Divisional Magistrate
	Vulnerability map of the Block.
	List of cut off areas with safe route map.
	List of storage facilities, dealers of food.
	Control room setup/assignment of control room duty.
	Pre-positioning of staff for site operation centers.
	Arrangement of alternative communication/generator sets etc.
	Arrangement of vehicles/boats of for evacuation.
	Dissemination of warning/ coordination with District control room.
	Ensuring coordination with the PRIs

#### BLOCK DEVELOPMENT OFFICIAL

Check	Block Development Official
	Vulnerability map of the Block.
	List of cut off areas with safe route map.
	List of storage facilities, dealers of food.
	Control room setup/assignment of control room duty.
	Pre-positioning of staff for site operation centers.
	Arrangement of alternative communication/generator sets etc.
	Arrangement of vehicles/boats of for evacuation.

	Dissemination of warning/ coordination with District control room.
	Ensuring coordination with the PRIs.

### **WATER RESOURCE DEPARTMENT**

Check	Water Resource Department
	Communication establishment with District and Block Control Rooms and departmental offices within the district.
	An officer to be appointed as nodal officer.
	Activation of flood monitoring mechanism
	Methods/ communication arrangement of alerting officers on various sites established
	Identification of materials required for response operations.
	Repairs/under construction activity are well secured
	Water level gauges marked
	Inlet and outlet to tanks are cleared
	Watch and ward of weak embankments & stock piling of repair materials at vulnerable points
	Guarding of weak embankments
	All staff informed about the disasters, likely damages and effects

### **ENERGY DEPARTMENT**

Check	Energy Department
	Communication establishment with District and Block control rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Standby arrangements for temporary electric supply or generators
	Inspection and repair of high-tension lines/substations/transformers/poles etc.
	Clearing of damaged poles/salvaging of conductors and insulators
	Identification of materials required for response operations.
	All staff informed in-formed about the disasters, likely damages and effects

### **AGRICULTURE DEPARTMENT**

Check	Agriculture Department
	Communication establishment with District and Block Control Rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Information provided about the disaster and likely damages to crop and plantation
	Organized transport, storage and distribution of seeds/fertilizers/pesticides

	Cleaning operation carried out to avoid water-logging and salinity
	Surveillance for pests and diseases being carried out.
	Establishment of public information centers requirements for salvage or replantation assessed damage
	Identification of different areas to be affected by different hazard
	Listing of irrigation sources with status.
	All staff informed in-formed about the disasters, likely damages, and effects

## HOME DEPARTMENT

Check	Home Department
	Communication establishment with District and Block Control rooms and departmental offices within the division.
	An officer to be appointed as nodal officer
	Overall traffic management and patrolling of all highways and other access roads to disaster sites
	Identification of antisocial elements
	Provision of security in transit camps/feeding centers/relief camps/cattle camps/cooperative food stores and distribution centers.
	Assistance to district authorities for taking necessary action against hoarders, black marketers and those found manipulating relief material.
	Coordination with military service personnel in the area being carried out.
	Officers made available to inquire into and record of deaths
	Assisting the community in organizing emergency transport or injured
	All staff informed in-formed about the disasters, likely damages and effects
	Communication establishment with District and Block control rooms and departmental offices within the division
	Stockpiling of live saving, anti-diarrheal drugs, de-toxicants, anesthesia, and adequate drinking water.
	Arrangement of ambulance/generators
	In-house emergency medical teams to ensure that adequate staff available at all times to handle emergency casualties.
	Listing of private health facilities
	Strengthening of disease surveillance
	Formation of mobile units and ensure communication with them.
	Identification of sites in probable disaster areas for site operation areas Awareness generation
	All staff informed in-formed about the disasters, likely damages and effects

## PUBLIC WORKS DEPARTMENT

Check	Public Works Department
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	Communication establishment with District and Block control rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Arrangement of extra vehicles/ heavy equipments, such as front-end loaders/towing vehicles/earth moving equipments /cranes etc.
	Inspection and emergency repair for roads/road bridges/ underwater inspection /piers/concrete and steel work.
	Emergency inspection by mechanical engineer of all plant and equipments.
	Route strategy for evacuation and relief marked
	Clearance of blocked roads.
	Community assistance mobilized for road clearing.
	All staff informed about the disasters, likely damages and effects.

### **TELECOMMUNICATION**

Check	Telecommunication
	Communication establishment with District and Block control rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Standby arrangements for temporary electric supply or generators
	Inspection and repair of poles etc.
	Identification of materials required for response operations.
	All staff informed about the disasters, likely damages and effects

### **PUBLIC HEALTH ENGINEERING DEPARTMENT**

Check	Public Health Engineering Department
	Communication establishment with District and Block control rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Arrangement of water tankers and other temporary means of distribution and storage water
	Adequate arrangement to provide water to relief camps/affected villages, alternate water supply arranged in feeding centers/cattle camps etc
	Disinfections of water bodies
	Identification of appropriate potable water supply.
	All staff informed in-formed about the disasters, likely damages and effects

### **ANIMAL RESOURCE DEVELOPMENT DEPARTMENT**

Check	Animal Husbandry Department
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	Communication establishment with District and Block Control Rooms and departmental offices within the division
	An officer to be appointed as nodal officer
	Listing of animal population with category
	Stock piling of emergency medicines and medical equipments
	Arrangement of anesthetic drugs/vehicle for transport of injured animals
	Identification of places for opening of operational sites
	Stock piling of water, fodder, animal feed.
	All staff informed in-form about the disasters, likely damages, and effects

### **EQUIPMENTS CHECKLIST: SANITATION**

Check	Sanitation Equipments
	Mobile chlorinator, mounted on truck or trailer with liquid chlorine cylinder
	Mobile hypo chlor in at or with solution tanks, hose and accessories
	Mobile water purification unit with a capacity of 200-250liters/min
	Tank trucks for water, capacity of 7 m3
	Portableelevatedstoragetankswithsupportingtankswithsupportingelementsandaccessories
	Well-driving equipment and well points
	Handoperatedpumpsforwatercapacityof15-20liters/min
	Electricordieseldrivenpumps,capacityof200-250liters/min
	Pipes(castiron, galvanised, asbestos cement) diameter125-10 cm, with valves &fittings
	Chlorinated lime(25-30%), stored in a cool, dry place and renewed every 6 months
	Calcium hypochlorite(60-70%), in powder or granule form, stored in a cool, dry place and renewed every 2years
	Alum, ferric chloride and other chemicals for water treatment
	Masonry tools
	Carpentry tools
	Truck mounted generators

### 12.1 Relief Lines : District to Blocks

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (Blocks)
	From	To			
1	Puri	Astarang	75 KMs (Via Konark)	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Astarang
2	Puri	Brahmagiri	25 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Brahmagiri
3	Puri	Delang	38 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Delang
4	Puri	Gop	55 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Gop & Konark NAC
5	Puri	Kakatpur	65 KMs (Via Konark)	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Kakatpur
6	Puri	Kanas	48 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Kanas
7	Puri	Krushnaprasad	210 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Krushnaprasad
8	Puri	Nimapara	62 KMs (Via Konark)	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Nimapara Block & NAC

9	Puri	Pipili	42 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Pipili Block & NAC
10	Puri	Puri Sadar	5 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Puri Sadar Block & Puri Municipality
11	Puri	Satyabadi	22 KMs	No vulnerability till block points. Only vulnerability is falling of trees due to cyclone.	Satyabadi

### 12.2 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

### 12.3 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	45	40	40	40	Sh. M.K.Yadav	09439103170 09437964571

2	ODRAF	50	44	44	44	Shri Biren Ku. Sasmal, OPS	94370-81266
3	Police	641				Dr. Kanwar Vishal Singh, IPS, Superintendent of Police, Puri	06752-225400
4	Home Guards	844				Dr. Dr. Kanwar Vishal Singh, IPS, Superintendent of Police, Puri	8280382804 / 06752-225400
5	Civil Defense						
6	NCC						
7	NSS	1550				Dr. Pyari Mohan Patnaik, Programme Coordinator	06752-251660
8	NYK						
9	Trained Task force						

#### 12.4 Preparedness at District level:

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

### 12.5 Preparedness at Community Level

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

### 12.6 Preparedness at Family Level

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

### 12.7 Preparedness at Individual Level

Task	Activity
Early Warning Dissemination	<ul style="list-style-type: none"> <li>• List &amp; keep a ready to go minimum Important requirements</li> <li>• Record the Safe &amp; alternative routes to shelter</li> <li>• Keep News update in Radio/TV</li> </ul>

Ensuring Preparedness	<ul style="list-style-type: none"> <li>• Every individual/children must have a Personal Identity information like a copy of Aadhar card/ Voter ID / School Identity Card &amp; Contact numbers of Preferably two who can be contacted in time of emergency</li> <li>• Family members especially kids must be sensitized about family gathering point during disaster &amp; crowded places</li> <li>• Assess preparedness on a regular basis by checking Radio/Mobile/ Emergency Kit/First Aid Kit/Fuels &amp; Kerosene (as per need)</li> </ul>
Capacity development	<ul style="list-style-type: none"> <li>• Participate &amp; involve in the activities of</li> <li>• Disaster Management</li> <li>• Safety plans</li> <li>• Capacity building Programmes</li> <li>• Mock Drills &amp; FAMEX</li> </ul>

### 12.8 Preparedness of Departments

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

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

	<ul style="list-style-type: none"> <li>• Formation of Zones/ Sub- Zones</li> <li>• Review Progress</li> <li>• Provision/ arrangement of sand bags in risk prone area</li> <li>• Equipments to be ready</li> <li>• Formation of team</li> <li>• Arrangement of vehicle</li> <li>• Delegation of areas</li> </ul>
Animal Resource Development Department	<ul style="list-style-type: none"> <li>• List out staff members with contact address</li> <li>• Vaccination of cattle population</li> <li>• Provision of supply of yearly medicines</li> <li>• Arrangement of mobile health units in inaccessible areas</li> <li>• Health awareness campaign</li> <li>• Arrangement of vehicle for uninterrupted mobility</li> <li>• Repair of LI centers and other necessary equipments</li> </ul>
CDAO- Agriculture	<ul style="list-style-type: none"> <li>• Information provided about the disaster and likely damages to crop and plantation</li> <li>• Organized transport, storage and distribution of seeds/fertilizers/pesticides</li> <li>• Cleaning operation carried out to avoid water-logging and salinity</li> <li>• Surveillance for pests and diseases being carried out.</li> <li>• Establishment of public information centers requirements for salvage or re-plantation assessed damage.</li> <li>• Identification of different areas to be affected by different hazard</li> <li>• Listing of irrigation sources with status.</li> </ul>
SE- Rural Works	<ul style="list-style-type: none"> <li>• Route strategy for evacuation and relief marked will be prepared</li> <li>• Clearance of blocked village roads</li> <li>• Community assistance mobilized for road clearing.</li> <li>• All staff informed about the disasters, likely damages and effects</li> </ul>
SE- Public Works	<ul style="list-style-type: none"> <li>• Route strategy for evacuation and relief marked will be prepared</li> <li>• Clearance of blocked roads</li> <li>• Community assistance mobilized for road clearing.</li> </ul>

	<ul style="list-style-type: none"> <li>• All staff informed about the disasters, likely damages and effects</li> </ul>
DTO-Telecom	<ul style="list-style-type: none"> <li>• Inspection and repair of poles etc.</li> <li>• Standby arrangements for temporary electric supply or generators</li> <li>• Identification of materials required for response operations</li> <li>• All staff informed about the disasters, likely damages and effects</li> </ul>
CDVO	<ul style="list-style-type: none"> <li>• Availability of food stuffs for the animals</li> <li>• Availability of vaccines and medicines for animals</li> <li>• Regular check up of animals by mobile health unit</li> <li>• Sensitize the public about the animal care</li> <li>• Ensuring of basic infrastructure i.e. veterinary hospitals and mounds</li> <li>• Availability of Doctors and other staff</li> </ul>
RTO/MVI	<ul style="list-style-type: none"> <li>• Regular checking of DL and other documents of vehicles</li> <li>• Awareness about road safety in roads by displaying hoardings</li> <li>• Patrolling in night to detect the drunk drivers</li> <li>• Regular checking for over loading vehicles in public transport</li> <li>• Heavy penalty for the road rule breakers</li> </ul>
DFO-	<ul style="list-style-type: none"> <li>• Avoid the fire in forests</li> <li>• Fire fighting items and water availability in order to tackle forest fire.</li> <li>• Special team formation to capture the thieves of forest products</li> </ul>
Railway	<ul style="list-style-type: none"> <li>• Regular inspection of railway lines in order to avoid rail accidents</li> <li>• Regular maintenance of the electronic equipments</li> <li>• Capacity building of staffs in order to tackle the disaster situation</li> <li>• Fire fighting items should be regularly checked</li> <li>• Availability of water in order to avoid the fire accident situations is stations.</li> </ul>
EE- Electricity	<ul style="list-style-type: none"> <li>• Regular identification of faults</li> <li>• Regular checking and repair of weak points. Transformers</li> <li>• Stockpiling of equipments/ accessories</li> <li>• Skill development training / orientation</li> <li>• Precautions/ protections near high voltage electric equipments installed</li> <li>• Stopping illegal consumption of electricity</li> </ul>

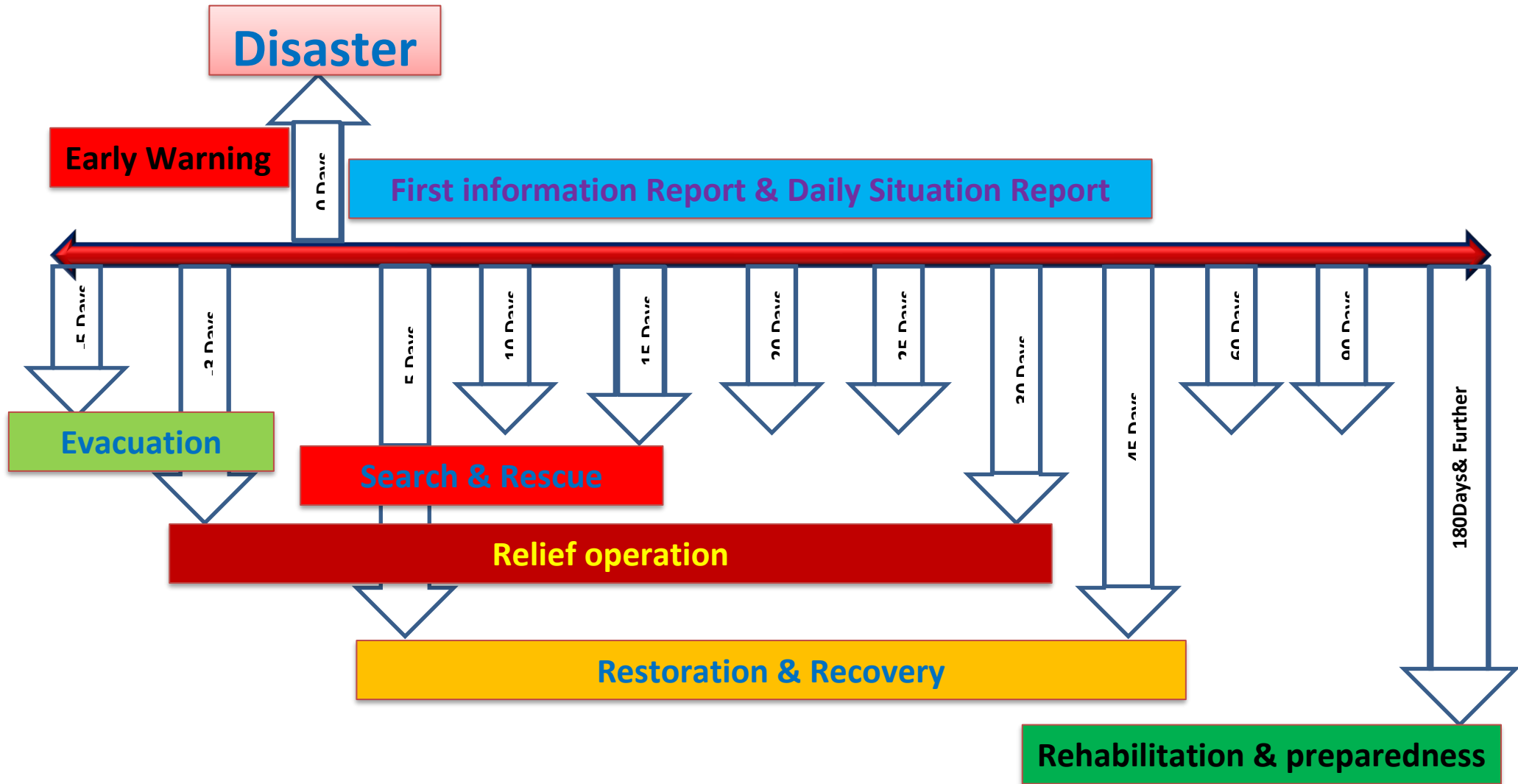
SE – WATCO	<ul style="list-style-type: none"> <li>• Super chlorination of water sources</li> <li>• Sinking pump machines</li> <li>• Installation of water storage tanks</li> <li>• Installation of DG sets</li> </ul>
DEO- School & Mass Education	<ul style="list-style-type: none"> <li>• Repairing of school buildings</li> <li>• Repairing of roads and approaches to school buildings</li> <li>• Creating awareness among the parents &amp; students regarding different disasters</li> </ul>
DEO - Higher Secondary Education	<ul style="list-style-type: none"> <li>• Repairing of college buildings</li> <li>• Repairing of roads and approaches to college buildings</li> <li>• Creating awareness among the parents &amp; students regarding different disasters</li> </ul>
Non-Government Organisations (NGOs)	<ul style="list-style-type: none"> <li>• IEC activities on disaster management</li> <li>• Community mobilization</li> <li>• Ensure regular meeting of NGO co-ordination cell</li> <li>• Disseminate all govt. aided programme to the community</li> <li>• Ensure regular mock drill</li> <li>• Ensure regular bleaching / use disinfectants in the drinking water sources</li> <li>• Organize workshops seminar meeting/ training on community based disaster management</li> <li>• Long term mitigation strategies</li> </ul>

# **Chapter –13:**

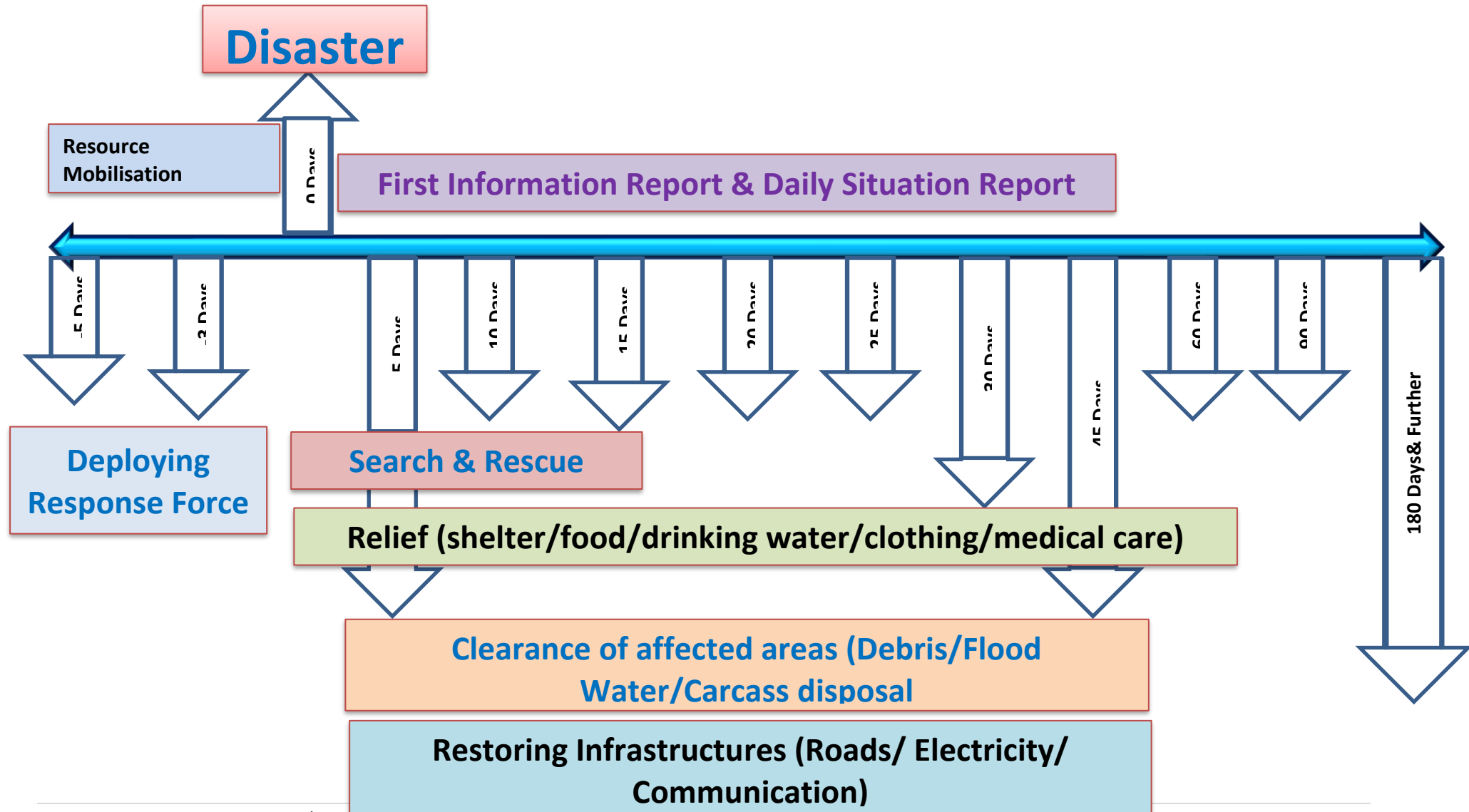
## **Response**

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 hardships and suffering, and restore essential life support and community systems, to mitigate further damage or loss and provide the foundation for subsequent recovery. Effective response planning requires realistic identification of likely response functions, assignment of specific tasks to individual response agencies, identification of equipment, supplies and personnel required by the response agencies for performing the assigned tasks. A response plan essentially outlines the strategy and resources needed for search and rescue, evacuation, etc.

### 13.1 Phases of Response: Timeline (Indicative)



## 13.2 Relief Management: Timeline



## 13.3 Response

### Response: District

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

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

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

### 13.4 Response: Family & Individual Level

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

### 13.5 Response: Standard Operating Procedures for Departments

Name of the Department	On Receiving Warning	Response time	Post Disaster
Collector/ADM / Emergency Officer	<ul style="list-style-type: none"> <li>• Review the situation in DDMC meeting and identification of gaps and arrangement to be done accordingly</li> <li>• Activate DEOC &amp; Early Warning</li> <li>• Appoint / Deploy Officers In-charge of Response Base. i.e. DEOC..</li> <li>• Work distribution among the officials for smooth operation</li> <li>• Circular to keep offices open and staffs to be in alertness</li> <li>• Arrange vehicle &amp; activate Evacuation (Normal/Forceful)</li> <li>• Deployment of ODRAF / NDRF units in the affected areas.</li> <li>• Ensure formalizing supply contracts for all departments that require additional manpower during emergencies.</li> <li>• Create teams including transport, relief material and equipment for responding to the disaster incident headed by one of the Higher officer of the district.</li> </ul>	<ul style="list-style-type: none"> <li>• Convene an emergency meeting and take stock of the situation.</li> <li>• After receipt of the information within 30 minutes the system needs to be activated and the warning disseminated to the concerned.</li> <li>• Frequent check up off updates and warning dissemination needs to be done accordingly.</li> <li>• Activate Search &amp; Rescue</li> <li>• Arrange temporary shelters</li> <li>• Arrange logistics in shelters</li> <li>• Workout financial estimates (evacuation / relief /recovery)</li> <li>• Coordinate with Army, Air Force, Navy, NDRF &amp; ODRAF for support towards evacuation, rescue and relief.</li> <li>• Facilitate preparation of a transportation plan for supply of relief items.</li> </ul>	<ul style="list-style-type: none"> <li>• Convene an emergency meeting and take stock of the situation</li> <li>• Prepare an evacuation plan for the marooned / devastated areas.</li> <li>• Prepare a list of transit/temporary shelters, and check their suitability for accommodating people.</li> <li>• Activate relief line clearance</li> <li>• Proper relief Distribution</li> <li>• Start damage assessment</li> <li>• Facilitate Ex-gratia &amp; Compensation</li> <li>• Start primary damage estimate</li> <li>• Pool resources for SAR/shifting of critical patients</li> <li>• Convene meetings of NGOs, Youth Clubs, Self-Help Groups, etc., in the district, and assign them specific responsibilities for relief, recovery and rehabilitation.</li> <li>• Have a back-up communication system.</li> </ul>
CDMO	<ul style="list-style-type: none"> <li>• Disseminate the alert to all concerned (Staff list)</li> <li>• Arrangement of medicine, First aid kits &amp; teams</li> <li>• Assignment of Mobile Health units for inaccessible pockets</li> </ul>	<ul style="list-style-type: none"> <li>• Mass Casualty Management units &amp; Triage</li> <li>• First Aid Centers</li> <li>• Medical surgical teams</li> <li>• Adequate mortuary facility</li> </ul>	<ul style="list-style-type: none"> <li>• Psycho-Social Counseling</li> <li>• Post Disaster Disease surveillance system</li> <li>• Special attention to vulnerable section</li> </ul>

	<ul style="list-style-type: none"> <li>• Provision of medicines to the Medical Relief Centers</li> <li>• Identifying &amp; shifting patients requiring intensive care to safer places</li> <li>• Supply of medicines &amp; pre-positioning of medical teams to vulnerable areas</li> <li>• Vaccination for prevention of communicable diseases</li> <li>• Measures to dis –infect drinking water</li> <li>• Availability of Blood Banks/Ambulance</li> <li>• Assign medical personnel for each Response Base, as identified by the district administration, to the extent possible. Keep essential medicines and first aid facilities with each Response Base.</li> <li>• Constitute mobile response units consisting of a doctor, health workers and ANMs, and prepare a deployment plan. Each mobile health unit should be capable to cover at least one Response Base in a day.</li> <li>• Check stocks of equipments and drugs which are likely to be needed most in disaster management. These can be categorized generally as: 1. Drugs used in treatment of wounds and fractures such as tetanus toxoid, analgesics, antibiotics, dressing material, and splints; 2. Drugs used for treatment of diarrhoea, influenza, malaria, and infective hepatitis; 3. Drugs required for treating snake bite and infection; 4. Drugs needed for detoxification including breathing equipment; and 5. Intravenous fluids.</li> </ul>	<ul style="list-style-type: none"> <li>• Measures to shift patients requiring intensive care</li> <li>• Pool of Blood donors (Preferably each group)</li> <li>• Additional laboratories</li> <li>• Carcass disposal team &amp; units</li> <li>• Hospital administration should: 1. Establish work schedules to ensure that adequate staff is available for patients’ needs; 2. Organize in-house emergency medical teams to ensure that adequate staff is available at all times to handle emergency casualties; and 3. Set up teams of doctors, nurses and paramedical staff as per IRS</li> <li>• Secure medical supplies in adequate quantity for dealing with these situations, which may include: 1.Oral Rehydration Solutions; 2. Chlorine Tablets; 3. Bleaching Powder; 4. Anti-diarrhoeal and Antiemetic (Used for controlling vomiting and nausea) medicines; 5. Intravenous fluids; 6. Suture material (A foreign body implanted into human tissues for closure of wounds); 7. Surgical Dressings; 8. Splints; 9. Plaster Rolls; 10. Disposable Needles and Syringes; and 11. Local Antiseptics.</li> </ul>	<ul style="list-style-type: none"> <li>• Move medical personnel both for each Response Base and mobile unit as soon as possible.</li> <li>• Determine type of injuries/illness expected and drugs and other medical items required, and accordingly ensure that extra supplies of medical items are obtained quickly.</li> <li>• Networking with &amp; promote treatment in Private Hospitals</li> <li>• Carcass Management &amp; Issuance of Death Certificate</li> <li>• Relocate non-ambulatory patients to the safest areas within the hospital. The safest rooms are likely to be: 1. On ground floor; 2. Rooms in the Centre of the building away from windows; and 3. Rooms with concrete ceilings.</li> <li>• Proper documentation of the patients coming to the hospital and keeping their records.</li> <li>• Develop a system of monitoring the outbreak of disease to ensure that timely measures can be initiated to counter them. Carry out monitoring for potable water and quality of food and disposal of waste in transit/relief camps, feeding centres and affected villages</li> </ul>
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<p>Superintendent of Police (SP)</p>	<ul style="list-style-type: none"> <li>• Ensure functioning of the warning system.</li> <li>• Formation of team</li> <li>• Delegation of areas</li> <li>• Formation of zones/Sub-Zones</li> <li>• Prepare a Deployment Plan for the Police Force, based on the needs of the most vulnerable and sensitive areas.</li> <li>• Ensure that a sufficient number of Police Force is available for responding to the disaster situation.</li> <li>• Constitute 'Search &amp; Rescue' Teams from the Police Force, and arrange training for these units. At least, one Search and Rescue Team for every district should be in place; more Teams could also be constituted depending upon the area and magnitude of disaster. Arrange rescue kits.</li> <li>• Support Block staff and volunteers during evacuation operation</li> <li>• Check the wireless communication network, and secure additional wireless sets for deployment during a disaster.</li> <li>• Assist fire brigade personnel in their efforts</li> <li>• Maintain law and order situation</li> <li>• Assess and identify roads on the bases of following conditions/facilities: 1. One-Way 2. Blocked 3. Alternate route 4. Overall Traffic Management and 5. Other access roads</li> <li>• Plan for Installation of radio communications at: 1. District Control Room, Deputy Commissioner/ District Collector/ District Magistrate and SP Office; 2. Control Room at affected site; and 3. Departmental Offices within the District and Division.</li> </ul>	<ul style="list-style-type: none"> <li>• Remain in close contact with the district administration</li> <li>• Keep close watch on the situation</li> <li>• Call for emergency meeting to take stock of the situation. Develop a strategy and a mission underlining objectives.</li> <li>• Ensure that all field staff and stationed officers submit the necessary action reports to the Control Room.</li> <li>• Provide convoys for relief materials.</li> <li>• Arrange rescue kits.</li> <li>• Support Block staff and volunteers during evacuation operation</li> <li>• Assist fire brigade personnel in their efforts</li> <li>• Maintain law and order situation</li> <li>• Ensure security of key installations like power, water and supply, telecommunication, etc.</li> <li>• Provide the VHF at most vulnerable points</li> </ul>	<ul style="list-style-type: none"> <li>• Support District/Block officials and volunteers during search and rescue operation</li> <li>• Provide guards wherever needed, particularly at stores and distribution centres.</li> <li>• Help injured people, and assist the community in organizing emergency transport of seriously injured to medical treatment centres, with the assistance of health professionals.</li> <li>• Assist fire brigade personnel in their efforts</li> <li>• Make available officers to inquire into deaths and record them, as there is likely to be shortage of time or personnel available to carry out Standard Post-mortem Procedures.</li> <li>• Monitor the medical needs and welfare of people sheltered in relief camps.</li> <li>• Activate a public helpline, with the help of government offices to: 1. Respond to personal inquiries about the safety of relatives in the affected areas; 2. Serve as a rumour control centre; and 3. Build confidence among the public.</li> <li>• Provide adequate security to personnel of International Agencies for Search and Rescue, Medical Assistance and Security for their relief material and equipments, etc.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Review and update emergency measures and procedures, and ascertain with staff the precautions that have been taken to protect equipment.</li> </ul>		
EE- RWSS	<ul style="list-style-type: none"> <li>• Develop and update the disaster management plan that includes the Contingency Action Plan for the Department based on HVRC analysis with the active involvement of all concerned line departments and local bodies in the district</li> <li>• Installation and repairing of tube-wells</li> <li>• Site visit and report</li> <li>• Awareness generation for using bleaching</li> <li>• Helping BDO during emergency</li> <li>• Review and update precautionary measures and procedures and ascertain with staff the precautions that have been taken to protect equipment.</li> <li>• Supply of drinking water during emergency</li> <li>• Site selection and water test in</li> <li>• Collection and storing of K-018H2s test stripe, bottle, bleaching, halogen tablets, tube well accessories</li> <li>• Area wise deployment of staff, fitter, Mason etc.</li> <li>• To inform all its staff members to report their respective headquarters</li> <li>• Close contact with DEO</li> <li>• Arrangement of water tankers</li> <li>• Procurement collection of water purifiers</li> <li>• Stockpiling of accessories</li> <li>• Repairing the defunct tube-wells</li> <li>• Raising platforms/height of the tube wells in low lying areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Call for emergency meeting to take stock of the situation</li> <li>• Coordination with the DEOC for the information and keeping a strict vigil over the situation and act accordingly.</li> <li>• Maintenance of record for information generation and dissemination.</li> <li>• Co-ordinate with District Administration</li> <li>• Immediate address the issues related to water scarcity during summer</li> <li>• Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis.</li> <li>• Make available standby water supply in the event of damage, saline intrusion or other pollution of the regular supply.</li> <li>• Prepare plans in coordination with other departments for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans.</li> </ul>	<ul style="list-style-type: none"> <li>• Damage assessment</li> <li>• Identification of areas for clearance</li> <li>• Delegation of team</li> <li>• Monitoring the work</li> <li>• Proposal to the government for repair and restoration</li> <li>• Identify unacceptable water sources and take necessary precautions to ensure that no water is accessed from such sources, either by sealing such arrangements or by posting the department guards;</li> <li>• Ensure that potable water supply is restored, as per the standards and procedures laid down in “Standards for Potable Water”;</li> </ul>

	<ul style="list-style-type: none"> <li>• On the receipt of disaster warning, organize continuous monitoring of: 1. Wells 2. Intake structures 2. Pumping stations 3. Buildings above ground, and 4.Pumping mains; and Treatment plant.</li> </ul>		
EE- Irrigation	<ul style="list-style-type: none"> <li>• Suspension or cancellation of all leaves of instruction to the concerned person to join head quarter immediately.</li> <li>• Arrangement of all-important telephone line and number in order</li> <li>• Arrangement or requisition of Jeeps/ Trekkers/ Auto Rickshaw to disseminate received warning information to the population of vulnerable/ weak places.</li> <li>• Maintenance of record for information generation and dissemination.</li> <li>• Co-ordinate with District Administration</li> <li>• Checking of all the rain-gauge stations and ensure that they are functioning properly. Ensure that the readings from these stations are available immediately to the Irrigation Department. Prescribe a register for recording of rainfall</li> <li>• Keep in readiness essential tool kits and protection material at critical places for emergency deployment. These may include: 1.Empty Cement Bags 2. Boulders 3. Ropes 4.Sand bags 5. Wire mesh 6. Shovels 7. Baskets 8. Lights, and 9. First Aid Kit</li> </ul>	<ul style="list-style-type: none"> <li>• Coordination of the information and keeping a strict vigil over the situation and act accordingly.</li> <li>• Maintenance of record for information generation and dissemination.</li> <li>• Co-ordinate with District Administration</li> <li>• .Organize round the clock inspection and repair of : 1. Bundhs 2. Dams 3. Irrigation channels 4. Bridges 5. Culverts 6. Control/slucice gates 7. Overflow channels 8. Pumps 9. Generators 10. Motor equipment, and 11. Station building</li> </ul>	<ul style="list-style-type: none"> <li>• Damage assessment</li> <li>• Identification of areas for clearance</li> <li>• Delegation of team</li> <li>• Monitoring of work</li> <li>• Proposal to the government for repair and restoration</li> <li>• Field Office Priorities: 1. Continue round the clock inspection and repair of bunds, dams, irrigation channels, bridges, culverts, control gates and overflow channels, etc.; 2. Make round the clock inspection and repair of pumps, generators, motor equipment and station buildings; 3. Clear the inlet and outlet to lake or reservoirs, on an on-going basis, in order to ensure that waterways are unobstructed by trees or vegetation; and 4. Use information formats and monitoring checklist for programme monitoring and development, and for reporting to District Emergency Operations Centre (DEOC). This is in addition to existing reporting system in the department.</li> </ul>
DAO- Agriculture	<ul style="list-style-type: none"> <li>• Activate the field functionaries</li> <li>• Issue necessary instructions to the staff as well as the farmers to safe guard their crops (in case of heavy rain warning, to cover up the paddy or</li> </ul>	<ul style="list-style-type: none"> <li>• Close watch on the flood situation</li> <li>• Develop a pest and disease monitoring system so that timely steps can be taken to reduce damage to crops.</li> </ul>	<ul style="list-style-type: none"> <li>• Call for emergency meeting to take stock of the situation. Develop strategy and objectives for early recovery.</li> </ul>

	<p>other crops already placed in the house premises)</p> <ul style="list-style-type: none"> <li>• Close watch on the flood situation</li> <li>• Review and update precautionary measures and procedures.</li> <li>• Check and stock equipment, if possible agricultural materials, which are likely to be needed most, during and after a disaster.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggest variety of seeds and cropping pattern, which can reduce losses and reduce the risks to farmers.</li> <li>• Review of stock of seeds available with the department.</li> <li>• Identification of vehicles for necessary transportation of the seeds to the affected.</li> <li>• Farmers' awareness plan needs to be chalked out depending upon the severity of the situation.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Assess the extent of damage to soil, crop, plantation, micro-irrigation systems and storage facilities and ascertain the requirements of seeds, pesticides, equipments, etc., to salvage the situation or go for re-plantation.</li> <li>• Pack all valuable equipments and instruments in protective coverings and store in room that is most damage-resistant.</li> <li>• Assist Extension Officers to: a. Establish work schedules to ensure that adequate work force is available; and b. Set up teams of extension personnel and assistants for visiting disaster/disaster affected sites.</li> <li>• Coordinate the provision of agricultural services with irrigation department, DRDA, District EOC, Site Operations Centres.</li> <li>• Ensure that certified seeds of required varieties are available in adequate quantities. The Agriculture Department should work with National Seeds Corporation and other suppliers and ensure availability at their depots or have agents appointed for the same.</li> <li>• Print and widely distribute the list of points where certified seeds are available along with names of varieties and rates.</li> </ul>
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EE- Rural Works	<ul style="list-style-type: none"> <li>• Suspension or cancellation of all leaves of instruction to the concerned persons to join head quarter immediately.</li> <li>• Arrangement of all- important telephone line and number in order.</li> <li>• Maintenance of record for information generation and dissemination</li> <li>• Co-ordinate with District Administration Clearance of Roadside dead trees posing threat to communication, life and electricity.</li> </ul>	<ul style="list-style-type: none"> <li>• Remain in alertness and close watch on the situation</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate restoration of the relief lines</li> <li>• If there is a cut off in communication then provision of alternative communication roads for relief operation.</li> </ul>
EE- Public Works	<ul style="list-style-type: none"> <li>• Make personnel available to the Deputy Commissioner/District Collector/District Magistrate, within the affected district/sub-division, tahasil. If more personnel are required, recall those on leave.</li> <li>• Ensure personnel are aware and nominated to be available for emergency duties within the affected district and sub-division.</li> <li>• Appoint Nodal officers (technical officers) and ensure they meet the staff to review emergency procedures in their jurisdiction.</li> <li>• Move heavy equipments, such as front-end loaders to areas likely to be damaged and put them in a safe place.</li> <li>• Ensure emergency inspection by mechanical engineer of all plants and equipment at the district workshops.</li> <li>• Inspect old buildings and suggest retrofitting of weak buildings/ demolition of dangerous structures and evacuation of population.</li> <li>• Declaration of the unsafe buildings for not safe for shelter.</li> </ul>	<ul style="list-style-type: none"> <li>• Close watch on the situation</li> <li>• Ensure the Officer-in-Charge-PWD (B&amp;R) is responsible for mobilizing staff and volunteers to clear the roads in his section.</li> <li>• Dispatch extra transport vehicles from headquarters and ensure these are stationed at safe strategic spots along routes likely to be affected.</li> <li>• Give priority attention to urgent repair works that need to be undertaken in disaster affected areas.</li> <li>• Check the evacuation routes and assist people, if they have to evacuate an area.</li> <li>• Construct/ reinforce the connecting roads from villages to roads, canals and bunds and raise their level so that people can access the high ground.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide a work team carrying emergency tool kits, depending on the nature and extent of the disaster, essential equipments such as: 1. Towing vehicles 2. Earth moving equipments and 3. Cranes, etc.</li> <li>• Coordinate with Public Works Department and Zila Parishad.</li> <li>• Mobilize community assistance for road clearing by contacting community based organizations.</li> <li>• Undertake clearing of ditches, grass cutting, burning or removal of debris, and the cutting of dangerous trees along the roadside in the affected area through area engineer's staff.</li> <li>• As per the decisions of the District Control Room, undertake construction of temporary structures required, for organizing relief work and construction of relief camps, feeding centres, medical facilities, cattle camps and Site Operations Centres.</li> </ul>

			<ul style="list-style-type: none"> <li>• Keep an up-to-date report of all damage and repairs in the district office report book and communicate the same to the District Control Room.</li> </ul>
DTO-Telecom	<ul style="list-style-type: none"> <li>• Remain in close contact with the district administration</li> <li>• Regular inspection of towers, repair if required</li> </ul>	<ul style="list-style-type: none"> <li>• Take steps as per the demand of the situation</li> <li>• All the staff needs to remain alert</li> </ul>	<ul style="list-style-type: none"> <li>• Restore the telephone lines as per the priority basis such as Dist. Administration, Block Administrations, Govt. Offices,</li> </ul>
CDVO	<ul style="list-style-type: none"> <li>• List out staff members with contact address</li> <li>• Vaccination of cattle population</li> <li>• Provision of supply of yearly medicines</li> <li>• Arrangement of mobile health units in inaccessible areas</li> <li>• Health awareness campaign</li> <li>• Arrangement of vehicle for uninterrupted mobility</li> <li>• Repair of LI Centers and other necessary equipments</li> <li>• On receipt of warning ask all the staff to join duty immediately</li> <li>• Deployment of staff to the inaccessible areas</li> <li>• Regular maintenance of records</li> <li>• Co ordination with higher authorities</li> <li>• Fix the price of fodder so that it is affordable to the farmers.</li> <li>• Estimate the requirement of water, fodder and animal feed, for cattle camps and organize the same.</li> </ul>	<ul style="list-style-type: none"> <li>• Record keeping</li> <li>• Information dissemination to concerned quarters (Sub-Divisional Vet. Officer)</li> <li>• Maintenance of regular flow of information</li> <li>• Develop a system of monitoring outbreak of diseases to ensure that timely measures can be initiated to contain them.</li> </ul>	<ul style="list-style-type: none"> <li>• Damage assessment</li> <li>• Identification of areas for clearance</li> <li>• Delegation of team</li> <li>• Monitoring of work</li> <li>• Proposal to the government for repair and restoration</li> <li>• Cattle camps and hospital administrators should: 1. Establish work schedules to ensure that adequate staff are available; 2. Set up teams of veterinary doctors, and assistants for visiting disaster affected sites; 3. Fix the quantity and quality of fodder and feed to be provided in the cattle camp. Issue fodder and feed for each cattle in accordance to standards;</li> <li>• Ensure that adequate sanitary conditions through cleaning operations are maintained in order to avoid outbreak of any epidemic.</li> </ul>
RTO/MVI	<ul style="list-style-type: none"> <li>• Remain in close contact with the Dist. Emergency Officer</li> <li>• A nodal officer to be nominated to make necessary coordination between RTO and Administration</li> </ul>	<ul style="list-style-type: none"> <li>• Remain in close coordination with the administration</li> <li>• Issue standing instructions to the state transport department for</li> </ul>	<ul style="list-style-type: none"> <li>• Provide required vans and ambulances for mobile health and animal husbandry teams.</li> </ul>

	<ul style="list-style-type: none"> <li>• Provide necessary vehicles for relief distribution</li> <li>• Provide vehicle for team movement if required</li> </ul>	providing buses for evacuation and relief.	<ul style="list-style-type: none"> <li>• Make available trucks, buses, jeeps, tractors, etc., for evacuation and supply chain management.</li> </ul>
Fire Officer	<ul style="list-style-type: none"> <li>• Remain alert with staff and equipments</li> <li>• If required test check the equipment available</li> <li>• In close contact with district administration</li> <li>• Mobilize volunteers trained earlier by the fire service</li> <li>• Make the volunteers always action mode</li> <li>• Ready for rescue operation</li> </ul>	<ul style="list-style-type: none"> <li>• Close watch to the situation around</li> <li>• Assist the administration in rescue operation if required</li> <li>• Always attend the control room phone of the station and any grave situation comes to notice, immediately inform the district administration to take prompt action</li> </ul>	<ul style="list-style-type: none"> <li>• Assist the administration in clearing the relief lines</li> <li>• Assist the administration as and when required</li> </ul>
Railway	<ul style="list-style-type: none"> <li>• Remain alert with staff and equipments</li> <li>• If required test check the equipment available</li> <li>• In close contact with district administration</li> <li>• Safety officer of the organization needs to be always in coordination with the administration</li> </ul>	<ul style="list-style-type: none"> <li>• Attend the calls comes to the control room</li> <li>• Any grave situation comes to notice immediately rush to the spot and inform the administration to take further steps.</li> </ul>	<ul style="list-style-type: none"> <li>• Damage Assessment</li> <li>• Immediate restore of essential services</li> <li>• Assist the administration in relief transportation</li> </ul>
EE- Electricity	<ul style="list-style-type: none"> <li>• Make personnel available to the Deputy Commissioner/District Collector/District Magistrate, within the affected district/sub-division, tahasil. If more personnel are required, recall those on leave.</li> <li>• Regular identification of faults</li> <li>• Regular checking and repair of weak points / Transformers</li> <li>• Pre monsoon maintenance of the transformers and high tension lines</li> <li>• Pre monsoon cutting of the branches of the trees to safe guard the supply lines</li> <li>• Stockpiling of equipments/accessories</li> <li>• Skill development training/orientation</li> </ul>	<ul style="list-style-type: none"> <li>• Disconnection of electricity to the affected areas to avoid any causality due to short circuit</li> <li>• Arrangement of uninterrupted power supply at the Hospitals (PHC , CHC, etc.) / temporary shelters</li> <li>• Dispatch emergency repair groups equipped with food, bedding, tents, and tools.</li> <li>• Provide information to the people about the state of power supply, as it is one of the most important sources of information.</li> <li>• Assist hospitals in establishing an emergency supply by assembling</li> </ul>	<ul style="list-style-type: none"> <li>• Restoration of electricity with additional HR</li> <li>• Ensure that the Power Supply department makes alternate arrangements of emergency supply for the following offices on receipt of warning: 1. Hospitals 2. Public Health Departments 3. Deputy Commissioner/ District Collector/ District Magistrate Office 4. District EOC, Sub-Divisional EOC, Site Operation Centres 5. Police Stations 6. Telecommunications buildings 7. Meteorological stations 8. Irrigation</li> </ul>

	<ul style="list-style-type: none"> <li>• Precautions/protections near high voltage electric equipments installed</li> <li>• Stopping illegal consumption of electricity</li> <li>• Disconnection of electricity in the event of an emergency</li> <li>• Arrangement of alternative energy sources such as generators and fuel for generators</li> <li>• Identification of HR and allot them to different areas</li> <li>• Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. Install pump sets for draining water in case of Disaster/ Cyclone/ Tsunami, etc.</li> <li>• Check emergency tool kits, and assemble any additional equipment needed.</li> <li>• After receiving alert warning, immediately undertake inspection of the following: 1. High tension lines 2. Towers 3. Sub-stations 4. Transformers 5. Insulators 6. Poles, and 7. Other equipments.</li> </ul>	generators and other emergency equipments, if necessary.	<p>Office, and 9. Any other place, if required.</p> <ul style="list-style-type: none"> <li>• Compile an itemized assessment of damage, from reports made by various electrical receiving centres and sub-centres.</li> <li>• Report all activities to the head office and district EOC.</li> </ul>
EE – PHED	<ul style="list-style-type: none"> <li>• Alerting the staff</li> <li>• Drinking water to be immediately filled in overhead tanks to provide safe drinking water</li> <li>• Arrangement of generator and fuel for emergency at the supply points</li> </ul>	<ul style="list-style-type: none"> <li>• Close watch on the situation</li> </ul>	<ul style="list-style-type: none"> <li>• Immediate restoration of water supply with additional human resources</li> </ul>
DEO- School & Mass Education	<ul style="list-style-type: none"> <li>• Closely work with the block administration</li> <li>• HMs of the schools needs to be alerted and schools needs to be closed depending upon the severity of the situation.</li> <li>• School keys need to be placed with a teacher staying at the same village</li> <li>• Necessary arrangement for cooking materials i.e. utensils and gas</li> </ul>	<ul style="list-style-type: none"> <li>• If required the key needs to be handed over to the villagers to take shelter</li> <li>• The local teachers needs to be present at the school to look after the important documents i.e. Enrollment list, other related official document.</li> </ul>	<ul style="list-style-type: none"> <li>• Assist the villagers to go to their houses after de-warning or the situation comes to normalcy.</li> </ul>

	<ul style="list-style-type: none"><li>• If the school itself in the flood area then steps needs to be taken to safe Guard the books supplied by the govt. for the students.</li></ul>	<ul style="list-style-type: none"><li>• Further the available teacher also try to maintain the disciple among the evacuees taking shelter in the school</li></ul>	
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**Sop for the Departments to be done accordingly**

## Standard Operating Procedure (SOP) for Line Departments

### Public Health Engineering Department

Actions to be Taken	Action Taken: Yes / No
<b>Early Warning &amp; Disaster Response</b>	
1. Activation of communication with the DEOC or the DPO, DDMA	
2. To direct department staff at all levels across the district about the possible impending disaster and actions to be taken to prepare for response including arrangement of water supply tankers, as required.	
3. Construction of required number of toilets, bathrooms and implanting of hand pumps in shelter sites on the basis of demand received.	
4. Providing halogen tablets in areas facing water contamination, particularly during floods and bleaching of water sources such as Ring Wells or Hand Pumps in rural areas by leveraging field staff.	
5. Coordination with the health department especially to locate areas that report good number of cases of waterborne diseases so as to quality affected water sources, including surface water bodies such as Ponds for undertaking their disinfection.	
6. Coordination with the health department to provide safe drinking water sources in affected health centers.	
7. Arrangement of water tankers and other temporary means of distribution and storage water.	
8. Water quality testing of habitations that get affected by floods and addition of these habitations among the priority beneficiaries of projects like Rain Water Harvesting, Raised Hand Pumps and Raised Toilets, thereby creating a database.	
9. To deactivate the emergency response actions in consultation with EOC and agencies.	

### Water Resources Department

Actions to be Taken	Action Taken: Yes / No
<b>Early Warning &amp; Disaster Response</b>	
1. Activation of communication with the DEOC or the DPO, DDMA as with the responsibility of the appointed Nodal Officer and the accountability of the Executive Engineer, WRD or the Assistant Exec Engineer, if former is not placed in the district.	
2. All personnel required for disaster management, shall work under the overall supervision and guidance of the Responsible Officer (RO), i.e., Deputy Commissioner & the Incident Commander, i.e., ADC (Disaster Management).	
3. To direct department staff at all levels across the district about the possible impending disaster, cancel leaves of all staff and prepare	

actions to be taken to prepare for response. In case of a declared emergency by the DEOC, communicate to staff at all levels.	
4. To prepare situation reports of river water levels periodically and share those with the DEOC and DDMA.	
5. In locations where Sluice Gates have been installed, undertake opening of gates to allow water to move across the side of embankments that shall help reduce pressure on embankments and improve irrigation for fields on the other side.	
6. In a post-earthquake scenario, undertake embankment audit and activate village embankment status checking teams to ensure any vulnerable points can be identified by the department.	
7. To deactivate the emergency response actions in consultation with EOC and agencies.	

### **PUBLIC WORKS DEPARTMENT (BUILDING)**

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>Early Warning &amp; Disaster Response</b>	
1. Activation of communication with the DEOC or the DPO, DDMA with the responsibility of the appointed Nodal Officer and the accountability of the Executive Engineer, PWD (Building) or Assistant Executive Engineer, if former is not placed in the district.	
2. To put all contractors and their equipments in ready to respond mode in case of an early warning.	
3. To push all contractors with their equipments into actions for emergency response and giving them the required directions.	
4. To undertake rapid visual screening and damage assessment to buildings.	
5. To direct department staff at all levels to take immediate retrofitting or seismic strengthening / repairing of buildings on high priority that are damaged by earthquake.	
6. Controlled demolition of buildings which are beyond repair and hazardous due to severe damage and dumping of debris in identified dumping sites.	
7. To undertake clearing of debris and trees from the roads that blocks the communication by using the equipments such as JCBs and sharp equipments such as saw.	
8. To deactivate the emergency response actions in consultation with EOC and agencies.	

### **PUBLIC WORKS DEPARTMENT (BRIDGES & ROADS)**

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>Early Warning &amp; Disaster Response</b>	
1. Activation of communication with the DEOC or the DPO, DDMA	

2. To put all contractors and their equipments in ready to respond mode in case of an early warning.	
3. To push all contractors with their equipments into actions for emergency response and giving them the required directions.	
4. Temporary roads shall be constructed to access transit relief camps and medical facilities for disaster victims.	
5. To undertake rapid visual screening and damage assessment of bridges and roads.	
6. To direct department staff at all levels to take immediate seismic strengthening / repairing of bridges & roads on high priority that are damaged by earthquake or floods.	
7. Arrangement of extra vehicles/ heavy equipments, such as front-end loaders/towing vehicles/earth moving equipments /cranes etc.	
8. Controlled demolition of bridges which are beyond repair and hazardous due to severe damage and dumping of debris in identified dumping sites.	
9. A priority listing of roads to be opened first shall be established. The most important roads are those leading to hospitals, main trunk routes and highways.	
10. To undertake clearing of debris and trees from the roads that blocks the communication by using the equipments such as JCBs and sharp equipments such as saw.	
11. Community organisations shall be contacted to mobilise community assistance for road clearing.	
12. To deactivate the emergency response actions in consultation with EOC.	

#### **FOREST DEPARTMENT**

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>DISASTER RESPONSE</b>	
1. Activation of communication with the DEOC or the DPO, DDMA as with the responsibility of the appointed Nodal Officer and the accountability of the District Forest Officer for Search & Rescue and Damage Assessment.	
2. To undertake assessment of damage to plantation done due to floods, storms, hailstorms or animal depredation.	
3. Identification of forest areas affected by erosion from flooding and placing plans of flood bank protection initiatives on priority.	
4. To support district administration in Search & Rescue operations if required to be done in forest areas with the involvement of the Forest Protection Force.	
5. Providing compensation in case of damage to ready to harvest crops, injury or loss of lives of domestic animals or humans, or otherwise any other damage to property.	
6. To deactivate the emergency response actions in consultation with EOC and agencies.	

### SOCIAL WELFARE DEPARTMENT

Actions to be Taken	Action Taken: Yes / No
<b>Disaster Response</b>	
1. Activation of communication with the DEOC or the DPO, DDMA with the responsibility of the appointed Nodal Officer and the accountability of the District Social Welfare Officer.	
2. All personnel required for disaster management, shall work under the overall supervision and guidance of the Responsible Officer (RO), i.e., Deputy Commissioner & the Incident Commander, i.e., ADC (Disaster Management).	
3. To direct department staff at all levels across the district about the possible impending disaster, cancel leaves of all staff and prepare actions to be taken to prepare for response. In case of a declared emergency by the DEOC, communicate to staff at all levels.	
4. To provide special care of children, women, old and disabled, especially those separated from families.	
5. To fetch records of households who lose life during disasters in coordination with the health department to provide these households life insurance support proactively.	
6. To ensure continued access to food supplies to Anganwadis.	
7. To deactivate the emergency response actions in consultation with EOC and agencies.	

### HEALTH DEPARTMENT

Actions to be Taken	Action Taken: Yes / No
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with the DEOC or the DPO, DDMAThe responsibility for the same lies with the appointed Nodal Officer and the accountability of the Joint Director of Health Services or the CMO.	
2. The Nodal Officer shall be responsible for coordination with DEOC and Support agencies	
3. All personnel required for disaster management, shall work under the overall supervision and guidance of the Responsible Officer (RO), i.e., Deputy Commissioner & the Incident Commander, i.e., ADC (Disaster Management).	
4. To direct department personnel at all levels across the district about the possible impending disaster, cancel leaves of all staff and prepare actions to be taken to prepare for response. In case of a declared emergency by the DEOC, communicate to staff at all levels.	
5. To coordinate and transport necessary medical supplies to disaster affected areas.	
6. The following emergency drugs&medical equipments are stocked <ul style="list-style-type: none"> <li>• Drugs used in treatment of cuts and fractures, such as</li> </ul>	

<ul style="list-style-type: none"> <li>tetanus toxoid, analgesics and antibiotics</li> <li>• Drugs used for the treatment of diarrhoea, water-borne diseases and flu(including oral rehydrating supplies)</li> <li>• Drugs required to treat burns and fight infections</li> <li>• Drugs needed for detoxication including breathing equipments</li> </ul>	
7. To provide immediate first-aid and transport to the health centres for the treatment of the patients injured or rescued.	
8. To maintain records of the number of people injured and the number of lives lost during the disaster and share the information on the number of the dead with Social Welfare department so that they can provide the life insurance sum proactively.	
9. In-house emergency medical team to ensure that adequate staff available at all times to handle emergency 'casualties	
10. Designating an area of the hospital for receiving large number of casualties. <ul style="list-style-type: none"> <li>• Emergency admissions</li> <li>• Procedures developed</li> <li>• Records maintained</li> <li>• Work schedules to ensure availability of adequate staff</li> </ul>	
11. Accommodation arrangement for medical personnel from outside the area.	
12. Continuing procedural management of all forms of waste from the health centres.	
13. Establishing of Public Information Center at the hospital	
14. To deactivate the emergency response actions in consultation with EOC and agencies.	

### Home Department

Actions to be Taken	Action Taken: Yes / No
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with the DEOC or the DPO, DDMA .The responsibility for the same lies with the appointed Nodal Officer and the accountability of the Superintendent of Police.	
2. The Nodal Officer shall be responsible for coordination with DEOC	
3. Immediately after the disaster, it shall be ensured that all police stations are functional with all appointed force at all the required locations and law and order is maintained properly.	
4. All personnel required for disaster management, shall work under the overall supervision and guidance of the Responsible Officer (RO), i.e., Deputy Commissioner & the Incident Commander, i.e., ADC (Disaster Management).	
5. To direct department personnel at all levels across the district about the possible impending disaster, cancel leaves of all staff and prepare	

actions to be taken to prepare for response. In case of a declared emergency by the DEOC, communicate to staff at all levels.	
6. Security shall be provided in transit and relief camps, affected villages, hospitals, medical centres, and the identified areas should be cordoned off.	
7. All department vehicles shall be refueled and parked unprotected/safe area.	
8. At the onset of the disaster, officers shall be dispatched to identify and assist people and communities in life-threatening situations.	
9. Seriously injured people shall be identified and the community assisted in organizing emergency transport to medical treatment centres.	
10. The community shall be assisted and encouraged in road-clearing operations.	
11. Transport carrying transit passengers (i.e. passengers travelling through trains, buses-passing through the district) shall be diverted away from the disaster areas.	
12. Public Information Centre shall be set-up to: <ul style="list-style-type: none"> <li>• Latest status of effect of disaster in the affected area.</li> <li>• Respond to personal inquiries about the safety of relatives in the affected areas</li> <li>• Compile statistics about affected communities, deaths, complaints and needs</li> <li>• Respond to the many specific needs that will be presented</li> <li>• Serve as a rumour control centre</li> </ul>	
13. Officers shall be available to inquire and record deaths normally there are neither time nor personnel available to carry out the standard post-mortem procedures.	
14. The police shall co-ordinate with the military service personnel in the area.	
15. District authorities shall be assisted in taking necessary action against hoarders, black marketer and that manipulating relief material in conjunction with other government offices.	
16. To deactivate the emergency response actions in consultation with EOC and agencies.	

### ELECTRICITY DEPARTMENT

Actions to be Taken	Action Taken: Yes / No
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with the DEOC or the DPO, DDMA. The responsibility for the same lies with the appointed Nodal Officer and the accountability of the Exec Engineer.	
2. The Nodal Officer shall be responsible for coordination with DEOC.	

3. To cutoff power supply during storms, hailstorms, floods and in inundated areas to prevent loss of lives to electrocution.	
4. Standby arrangements for temporary electric supply or generators.	
5. Procurement and storage of fuel for generator sets that may be required to be installed.	
6. Inspection and repair of high-tension lines / substations / transformers / poles.	
7. Clearing of damaged poles / salvaging of conductors and insulators	
8. To deactivate the emergency response actions in consultation with EOC and agencies	

### AGRICULTURE DEPARTMENT

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with the DEOC or the DPO, DDMA. The responsibility for the same lies with the appointed Nodal Officer and the accountability of the District Agriculture Officer.	
2. The Nodal Officer shall be responsible for coordination with DEOC.	
3. To conduct damage assessments of the damage to agricultural output and submit report to the DEOC.	
4. To deactivate the emergency response actions in consultation with EOC.	

### ANIMAL HUSBANDRY DEPARTMENT

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with the DEOC or the DPO, DDMA. The responsibility for the same lies with the appointed Nodal Officer and the accountability of the D.A.H.O.	
2. The Nodal Officer shall be responsible for coordination with DEOC	
3. To conduct damage assessments of the injury or deaths of livestock in the district and submit the report to the DEOC.	
4. Arrangement of anesthetic drugs/vehicle for transport of injured animals.	
5. To start relief camps for livestock in higher places during floods and providing support with fodder supplies and drinking water.	
6. To facilitate mass casualty management by disposal of animal carcasses necessary to prevent spread of epidemics.	

7. To deactivate the emergency response actions in consultation with EOC and other agencies.	
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**DISTRICT EMERGENCY OPERATIONS CENTRE, DISTRICT DISASTER MANAGEMENT AUTHORITY**

<b>Actions to be Taken</b>	<b>Action Taken: Yes / No</b>
<b>DISASTER RESPONSE ACTIONS</b>	
1. Activation of communication with Early Warning or Emergency Response.	
2. The Nodal Officer shall be responsible for sending communication and coordination with all agencies.	
3. Communities in disaster prone areas shall be made aware of the Early Warning System especially through field indications.	
4. All available Early Warning Systems shall be used & information so gathered to be disseminated as quickly as possible through laid down channels/methods.	
5. The early warnings shall to the extent possible, be clear about its spread with risk area, its severity, duration, and likely damages it may cause.	
6. Warning statements should be conveyed in simple, local language in order that it is understood. Along with today's messages, relevant continued background scenario along with likely development in few days ahead may also if possible to be incorporated. The warning statement should not evoke panic and prevent any spread of rumour.	
7. Wherever possible, assistance of community leaders and organized groups should be sought in managing the threat to the people.	
8. Once issue of early warning has been started, it shall be followed-up by subsequent warnings till it is over in order to keep people informed of the latest situation.	
9. In case of a disaster threat reduces, deactivation of warning or emergency response actions in consultation shall be sent to community.	

### **13.7 ORISSA RELIEF CODE**

#### **Functioning of Control Room (Para 10 & 47 of ORC)**

Control Room is functioning in District Office with telephone No. 06752-223237 /1077 round the clock with the effect from 1<sup>st</sup> May to 30<sup>th</sup> November. Control Rooms are also functioning in the Offices of the Sub-Collectors/Tahasildars/Block Development Officers and in other District Level Officers. The case of any natural calamities viz – flood or cyclone etc immediately after the occurrence it will be the responsibility of village level workers to inform the facts to the nearest RI who will pass on the information to the nearest Police

Station for transmission of the message to the Sub-Collector and Collector's Control Room also keep the concerned zone officer and Tahasildar informed. Revenue Inspector's are trained at Tahasils level for the purpose.

**WIRELESS STATION (PARA 55 OF O.R.C)**

All the Police Station and Out-posts in the Dist are equipped with VHF/HF for transmission of the flood /cyclone messages. Special Relief Commissioner has been moved for installation of temporary V.H.F. Centers at the following places to facilitate transmission of flood/cyclone messages.

**RAIN RECORDING AND SUBMISSION OF RAINFALL REPORTS(PARA 49 OF O.R.C.)**

Rain recording stations are available in all the blocks of this district. The Head Clerks of the Blocks are acting as Rain Recording Officers under the supervision of the respective Block Development Officers. The rainfall reports from each rain recording station shall be transmitted to the District Control Room daily through V.H.F./ Telephone/ Messenger.

**GAUGE READING (PARA 50 OF O.R.C.)**

The gauge reading stations of different rivers are available at different places in the district as shown. The gauge readings will be transmitted by the flood control cell to the District Control Room every hour when the gauge reading is near or above danger level. When the gauge reading is fairly below the danger level, the same will be transmitted once a day by 5 P.M., Gauge readings at the above Gauge stations shall be communicated to the Revenue Control Room through phone/Fax from the District Control Room.

**DISSEMINATION OF WEATHER REPORTS, FLOOD BULLETIN ETC. (PARA 52 OF O.R.C.)**

Immediately on receipt of weather warnings and bulletin above high flood from the Metrological Center of the Government of India at Bhubaneshwar or from the Revenue Department/ Special Relief Commissioner, the same shall be communicated to the superintendent of Police. Executive Engineers of the Water Resources Department, the Sub-Collectors, Executive Officers of U.L.Bs., Tahasildars and Block Development Officer who shall without loss of time disseminate the messages among the people through their respective agencies and caution them so that they will be in readiness to shift to flood shelters or other safer places in the event of high floods. The people, will also be asked to refer to the special weather/flood bulletin of T.V./Radio during such periods.

**STORAGE OF FOODSTUFF IN INTERIOR AREAS (PARA 57 OF O.R.C.)**

To ensure that food grains/food-stuff are available in the interior areas which are likely to become inaccessible during flood, Civil Supplies Officer, Khordha, has been reported to store adequate amount of rice and also to keep stock of Kerosene. Other dry foods like chuda, mudhi, guda, bread and other

necessaries like candle, match box etc, will be arranged immediately for distribution among the marooned people in the event of high flood.

#### **SELECTION OF FLOOD SHELTERS (PARA 60 OF O.R.C.)**

In or about the flood prone areas, suitable buildings belonging to Government, Panchayat Samities, Gram Panchayats, Educational Institutions, Mahila Samitis, Recreation Centres or other Institutions of

public nature may be selected for providing emergent shelter to the people on evacuation from the flood affected areas. In case no such buildings could be found, temporary structures with bullahs, bamboos, talais and tarpaulins should be raised on high mounds or embankments for such shelters. The Collectors of flood prone districts shall arrange for quick availability of bamboos, bullahs, ropes, talais, tarpaulins, etc. for construction of such shelters.

#### **ORGANISATION OF RELIEF PARTIES FOR RESCUE AND RELIEF OPERATION (PARA 60 OF O.R.C.)**

In the event of high flood, it will be necessary to rescue the marooned people and to distribute emergent relief to the people affected by the calamity. For smooth management of rescue and relief operation, the Sub-Collector have been instructed to constitute Relief Parties in advance indicating their area of jurisdiction. The employees of the local Government offices shall be included in such relief parties. NGOs will also be involved in the programmed.

#### **ARRANGEMENTS FOR ARMY ASSISTANCE (PARA 61 & 69 OF O.R.C.)**

In case of severe and wide spread calamity, the assistance of army personnel may be sought for relief and rescue operation. In such contingency, necessary arrangements shall be made to requisition the army to assist the civil authorities through Special Relief Commissioner / Government following the procedure laid down under paragraph 61 and 69 of the Orissa Relief Code

#### **DAILY REPORTING OF FLOOD SITUATION (PARA 71 OF O.R.C)**

As per para 71 of Orissa Relief Code instructions have been separately issued for submission of daily situation report by the Block Development Officer /Tahasildars in the prescribed format through wireless message from the date of occurrence of the flood till after 3 days of the abatement of flood. The required flood information will be collected by the VLWs and Extension Officers who will furnish the same to the Block Office by 2 P.M. every day. Besides, other line department officers will also pass on the information relating to their department officers who will also pass on the information relating to their department to the respective Block Development Officers. The Block Development Officers will compile and transmit the information as per the format of the daily situation report through the nearest police wireless by 3 P.M. to District Control Room.

#### **TRANSPORT**

In the event of any Natural Calamity, vehicles may be required for sending the relief parties and relief materials including foodstuff to the affected areas. The Regional Transport Officer will make requisition and provide such vehicles with the help of his enforcement staff as per the requirement.

#### **DISPOSAL OF DEAD BODIES (PARA 73 OF ORC)**

The dead bodies of human beings, if any, found in the flood-affected areas in case of high flood, shall ordinarily be made over to their relatives and friends, if available, for cremation or burial. When there are no claimants for dead bodies, those shall be cremated/buried at the Govt. cost i.e. Health Department. Chief District Medical Officer, Khordha will issue necessary instructions to their officer and staff in the field in this regard. Similarly, carcasses of cattle and other animals shall be buried by the Animal Resources Development Department. Chief District Veterinary Officer will issue necessary instruction in this regard.

#### **ASSESSMENT OF DAMAGE (PARA 74 TO 77 OF O.R.C)**

Damages caused by the Natural Calamity to the private and public properties and loss of life are assessed by the Revenue Agency. The Tahasildars are to collect such information with the help of his staff through the local enquiry. The Block Development Officers and the Extension Officers in this work if necessary will assist them and officers may be specially deputed by the Collector to assist the Tahasildars in this work where there is large-scale damage. This report of damages would be submitted without delay. The other departments will similarly assess their losses and submit reports within the stipulated time.

#### **RESTORATION OF COMMUNICATION AND POWER SUPPLY (PARA 86 OF ORC)**

In case of high flood, the communication and power supply to the affected areas are usually cut off. The respective departments will take immediate steps for restoration of the communication as well as power supply after abatement of flood.

#### **LAW AND ORDER**

In case of occurrence of any Natural Calamity, there is change of law and order problems. Transportation and distribution of relief materials may require police protection. The Superintendent of Police will issue necessary instruction to all Inspector officer/officer officers in the District in the direction of maintenance of law and order in such eventuality and to render necessary assistance to the District/Sub-Divisional authorities for smooth management of relief and rescue operation.

### **13.9 Daily Status Report on Relief/ Restoration Measures Undertaken By Departments**

#### **1. Health Department.**



**1.R.D. Department.**

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

**2.Works Department.**

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

**3.W.R Department.**

Breach occurred-  
Breaches closed-

## Chapter – 14:

# Rehabilitation & Restoration

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

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

**Rapid Damage Assessment:** The district administration and the concerned - departments will make quick damage assessment even when the relief operations are going on. SRC will coordinate this.

**Transparency:** Transparency in relief, reconstruction and mitigation activities will be maintained by all agencies.

**Early transition to rehabilitation:** In order that human dignity is not compromised, efforts will be made to ensure a smooth and quick transition from Relief to Rehabilitation phase where food security needs would be combined with peoples' participation in creating and renovating community assets.

**Key Activities in the Recovery and Rehabilitation Phase:**

**Detailed Damage Assessment and Preparation of Rehabilitation & Reconstruction Plan:**

A detailed and objective damage assessment will be done in the affected area in order to size up and prioritise restoration, reconstruction and rehabilitation measures within the shortest possible time. Respective departments will undertake detailed, sectoral damage assessment on priority basis and complete the same within two months of the event at the latest. Guidelines in this regard will be formulated by the OSDMA with approval of the Govt. Government vide Revenue department resolution No.39376 dated 26/8/2000 has decided, "OSDMA will identify the repair/ reconstruction works and rehabilitation programmes necessary to be taken up following any natural calamity, in consultation with the Departments of Govt. and draw up a tentative shelf of projects/programmes for implementation. The OSDMA will have full authority to identify the executing agency through which each individual project / programme will be implemented." The self of projects, programmes are to be approved by Govt. before implementation. The concerned District Collector(s) will prepare a time-bound comprehensive reconstruction and rehabilitation plan. The OSDMA will facilitate the process. The objective of the rehabilitation and recovery plan will be to reduce vulnerability of the people and infrastructure. In the rehabilitation plan, the special needs of the vulnerable groups and areas prone to repeated disasters will be given priority.

**Resource mobilisation:** To augment the resources available with the State Govt. assistance from Union Government, public and private sector, multi lateral and bi-lateral agencies, UN organizations, the Civil Society and other charitable organizations will be sought with the approval of the State Government. Communities and individuals would be encouraged to raise resources necessary for immediate relief within the community itself and to access the Community Disaster Management Fund and institutional credit. A coordination mechanism will be put in place at all levels under the aegis of the OSDMA, to ensure equitable distribution of resources, avoid duplication of efforts and generate synergy.

**Rehabilitation of orphans and widows:** For the rehabilitation of orphans and widows a community-based approach will be adopted. Institutional rehabilitation will be considered only as an alternative option. The Women and Child

Development Department will be the Nodal Department for the rehabilitation of the children who become orphans, and persons who become widows and physically or mentally challenged due to disasters.

**Documentation:** Documentation of various phases and aspects of disaster management is important for recording valuable experiences and identifying areas where improvements are possible. The OSDMA will document various disaster events, highlighting lessons learnt in association with other involved organizations. The Govt. will support consultancy services, research programmes, etc. to increase the level of understanding and evolving appropriate measures to improve the quality of disaster management.

### 14.1 Standard Operating Procedure: Restoration & Rehabilitation

Name of the Department	Normal Time
Collector/ADM / Emergency Officer	<ul style="list-style-type: none"> <li>• Restoration of Critical Infrastructures to bring situation to normalcy</li> <li>• Ensure Restoration of roads &amp; channels, Communication network, Electricity &amp; Energy</li> <li>• Ensure health in the affected areas</li> <li>• Adopt sustainable mitigation measures in the restoration activities</li> </ul>
CDMO	<ul style="list-style-type: none"> <li>• Carry out Disease surveillance measures to check epidemic prone diseases</li> <li>• Dis-infection of drinking water &amp; measures for health &amp; hygiene</li> <li>• Rehabilitation of deprived &amp; destitute</li> <li>• Carry out Trauma &amp; Psycho-social counseling</li> </ul>
Superintendent of Police (SP)	<ul style="list-style-type: none"> <li>• Conduct training programmes for staff on operation of updated equipments for Search and Rescue</li> <li>• Conduct training programme for staff on First Aid</li> <li>• Review and monitor of preparedness activities</li> </ul>
EE- RWSS	<ul style="list-style-type: none"> <li>• Proper planning for supply of drinking water at the rural pockets for summer and flood season</li> <li>• Time to time restoration of tube wells and raising of platforms in the flood affected area</li> <li>• Aware the community to use safe drinking water</li> </ul>
EE- Irrigation	<ul style="list-style-type: none"> <li>• Identification of weak embankments</li> <li>• Repairing of the embankments</li> <li>• Capacity building training programmes for staff and other stakeholders</li> </ul>
DAO- Agriculture	<ul style="list-style-type: none"> <li>• Training to farmers and other stake holders on different good agricultural practices</li> <li>• Training to Staff members on different good / updated agricultural practices</li> </ul>
EE- Rural Works	<ul style="list-style-type: none"> <li>• Routine developmental works but disaster proofing mechanism</li> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> </ul>

	<ul style="list-style-type: none"> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> <li>• Immediate restoration of critical infrastructures</li> </ul>
EE- Public Works	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> <li>• Immediate restoration of critical infrastructures</li> </ul>
DTO-Telecom	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> </ul>
CDVO	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> </ul>
RTO/MVI	<ul style="list-style-type: none"> <li>• All Circle Officers instructed to be in coordination with the local authority</li> <li>• Identification and Provision of vehicles for necessary emergency movement</li> </ul>
DFO-	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis.</li> </ul>

Railway	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> <li>• Damage Assessment report of Railway may be sent to parent department apart from DDMA /DEOC.</li> </ul>
EE- Electricity	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> <li>• Restoration of Electricity in hospitals, administrative buildings</li> </ul>
EE – PHED	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li> <li>• Restoration of safe drinking water</li> <li>• Close watch on outbreak of jaundice and other water related diseases</li> </ul>
DEO- School & Mass Education	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> <li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li> <li>• Immediate restoration of Electricity, Drinking water facility, sanitation facilities after any serious disastrous event</li> </ul>
DEO - Higher Secondary Education	<ul style="list-style-type: none"> <li>• All Circle Officers will carry out damage assessment in their respective areas</li> </ul>

	<ul style="list-style-type: none"><li>• Representatives from line department's viz. Agriculture, PWD, PHED, Water Resource, Animal Husbandry, Education, Health, Irrigation, Fishery and Social Welfare will accompany Circle Officer &amp; his staff during damage assessment</li><li>• All damage assessment reports in the prescribed format (By GoO) to be submitted to DDMA /DEOC on daily basis</li><li>• Immediate restoration of Electricity, Drinking water facility, sanitation facilities after any serious disastrous event</li></ul>
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# Chapter-15:

## Recovery

The long-term recovery plans are related with Recovery and Reconstruction activities on one side and institutionalizing disaster management in district administration on the other side. There are Standard Operation Procedures (SOPs) for the Emergency Support Functions. Recovery and rehabilitation is the final step. The incident Command System shall be deactivated as the rehabilitation phase is over. Thereafter the normal administration shall take up the remaining reconstruction works in the disaster-affected areas. These activities shall be performed by the Working Group for relief and rehabilitation under the direction of the DDMA.

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

- There are Standard Operation Procedures (SOPs) for the Emergency Support functions. In long term measures the following actions shall be undertaken duly.
- Constitution of Emergency Support Functions, Disaster Management Teams, Quick Response Teams, Field Response Teams.
- Refresher trainings for all such teams in a regular interval of time and exercise of Mock Drills.
- Continuous awareness/sensitization programmes for the stakeholders and the general public.
- Getting pre-contract with vendors and merchant establishments to procure relief materials in times of disaster.

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

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

The role of the DM & Collector will be to:

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

# Chapter- 16:

## Financial Arrangement

### 16.1 National Disaster Response Fund (NDRF)

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

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

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

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

### 16.2 State Disaster Response Fund (SDRF)

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

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

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

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

### **16.3 Chief Minister Relief Fund (CMRF)**

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

#### **16.3.1 Cases Eligible for Assistance under CMRF**

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

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

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

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

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

#### **16.4 Release of Funds to Departments and Districts:**

Funds required towards pure relief to affected persons / families for natural calamities in shape of emergency assistance, organizing relief camp / free kitchen / cattle camp, agriculture input subsidy and other assistances to affected farmers, ex-gratia as assistance for death cases, grievous injury, house building assistance, assistance to

fisherman / fish seed farmers / sericulture farmers, assistance for repair / restoration of dwelling houses damaged due to natural calamities are administered through the respective collectors.

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

### **16.5 Damage Assessments and Report after Flood/Cyclone**

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

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

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

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

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

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

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

## 16.6 Central and State Government programmes and Schemes on Natural Calamities

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

**Table\_:** Different State and Central Government Schemes and Programms

Sl No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1	National Agriculture Insurance Scheme (NAIS)/ Rastriya Krishi Bima Yojna (RKBY)	Crop Insurance	Agriculture Insurance Company of India (AICI)	To protect the farmers against the losses suffered by them due to crop failures on account of natural calamities, such as droughts, floods, hailstorm, storms, animal depredation, etc.
2	Janashree Vima Yojna	Life Insurance	Life Insurance Corporation Of India	The objective of the scheme is to provide life insurance protection to the rural and urban poor persons below poverty line and marginally above the poverty line.
3	National Rural Livelihood Mission ( Deen Dayal Antordaya Yojana)	Poverty reduction programme	Ministry of Rural Development / Panchayati raj Department	To reduce poverty by enabling the poor households to access gainful self-employment and skilled wage employment opportunities, resulting in appreciable improvement in their livelihoods on a sustainable basis, through building strong grassroots institutions of the poor.
4	Deen Dayal Upadhaya - Gramin Kaushalaya Yojana (DDU-GKY)	Skill development scheme	Ministry of Rural Development / Panchayati raj Department	DDUGKY is a placement linked skill development scheme for rural poor youth. This initiative is a part of NRLM
5	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Poverty Reduction Strategy	Rural Development Department	Pradhan Mantri Gram Sadak Yojana (PMGSY) aims at providing all weather

				connectivity to all unconnected habitations having population 250 and above for IAP districts and population of 500 or more in general area and population of 250 or more in schedule area for non-IAP districts
6	National Social Assistance Programme (NSAP)	Social Welfare programme	Ministry Of Rural Development	The National Social Assistance Programme (NSAP) which came into effect from 15th August, 1995 represents a significant step towards the fulfillment of the Directive Principles in Article 41 of the Constitution. The programme introduced a National Policy for Social Assistance for the poor and aims at ensuring minimum national standard for social assistance in addition to the benefits that states are currently providing or might provide in future. NSAP at present, comprises of Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi National Disability Pension Scheme (IGNDPS), National Family Benefit Scheme (NFBS) and Annapurna.
7	Pradhan Mantri Awas Yojana (Housing for all -Urban)	Rehabilitation of Slum Dwellers	Ministry of Housing and Urban Poverty Alleviation	The Mission will be implemented during 2015-2022 and will provide central assistance to Urban Local Bodies (ULBs) and other implementing agencies through States/UTs for: <ol style="list-style-type: none"> <li>1. In-situ Rehabilitation of existing slum dwellers using land as a resource through private participation</li> <li>2. Credit Linked Subsidy</li> <li>3. Affordable Housing in Partnership</li> <li>4. Subsidy for Beneficiary-led individual house construction/enhancement.</li> </ol>

8	Swachha Bharat Mission (SBM-U)	Cleanliness, Water & Sanitation, Urban	Ministry of Drinking Water & Sanitation	To accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India launched the Swachh Bharat Mission on 2nd October, 2014. The Mission Coordinator shall be Secretary, Ministry of Drinking Water and Sanitation (MDWS) with two Sub-Missions, the Swachh Bharat Mission (Gramin) and the Swachh Bharat Mission (Urban), which aims to achieve Swachh Bharat by 2019, as a fitting tribute to the 150th Birth Anniversary of Mahatma Gandhi, which in rural areas shall mean improving the levels of cleanliness in rural areas.
9	Swachha Bharat Mission (SBM-G)	Cleanliness, Water & Sanitation, Gramin	Ministry of Drinking Water & Sanitation	To accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India launched the Swachh Bharat Mission on 2nd October, 2014. The Mission Coordinator shall be Secretary, Ministry of Drinking Water and Sanitation (MDWS) with two Sub-Missions, the Swachh Bharat Mission (Gramin) and the Swachh Bharat Mission (Urban), which aims to achieve Swachh Bharat by 2019, as a fitting tribute to the 150th Birth Anniversary of Mahatma Gandhi, which in rural areas shall mean improving the levels of cleanliness in rural areas.
10	National Rural Drinking Water Programme (NRDWP)	Safe Drinking Water	Ministry of Drinking Water & Sanitation	The aim and objective of National Rural Drinking Water Programme (NRDWP) is to provide every rural person with adequate safe water for drinking, cooking and other basic domestic needs on a sustainable basis, with a minimum water quality

				standard, which should be conveniently accessible at all times and in all situations. Achieving this aim and objective is a continuous process.
11	Pradhan Mantri Krishi Sinchai Yojana (PMKSY) – Integrate Watershed Management Programme (IWMP)	Agriculture	Ministry of Agriculture and Farmers Welfare, GoI	Har Khet ko Pani “Prime Minister Krishi Sinchayee Yojana” PMKSY has been formulated amalgamating ongoing schemes viz. Accelerated Irrigation Benefit Programme (AIBP) of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR,RD&GR), Integrated Watershed Management Programme (IWMP) of Department of Land Resources (DoLR) and the On Farm Water Management (OFWM) of Department of Agriculture and Cooperation (DAC).
12	Digital India Land Record Modernisation Programme (NLRMP)	Digital India	Ministry of Rural Development	The Digital India Land Records Modernization Programme (DILRMP) is launched by Government of India in August 2008, aimed to modernize management of land records, minimize scope of land/property disputes, enhance transparency in the land records maintenance system, and facilitate moving eventually towards guaranteed conclusive titles to immovable properties in the country.
13	Deen Dayal Upadhaya Gram Jyoti Yojana (DDUGJY)	Rural Electrification	Ministry of Power	<ul style="list-style-type: none"> <li>• Separation of agriculture and non-agriculture feeders</li> <li>• Strengthening and augmentation of sub-transmission &amp; distribution</li> <li>• Rural electrification</li> </ul>
14	Atal Mission for Rejuvenation and Urban Transformation (AMRUT)	Urban Infrastructure	Ministry of Urban Development	Providing basic services (e.g. water supply, sewerage, urban transport) to households and build amenities in cities which will improve the quality of life for all, especially the poor and the disadvantaged is a national priority.

15	Pradhan Mantri Fasal Bima Yojana (PMFBY)	Agriculture Insurance	Ministry of Agriculture and Farmers Welfare, Government of India	To provide 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 & diseases. - To stabilise the income of farmers to ensure their continuance in farming. - To encourage farmers to adopt innovative and modern agricultural practices. - To ensure flow of credit to the agriculture sector.
16	National Health Mission (NHM)	Health	Department of Health & Family Welfare, GoO	Improved health status and quality of life of rural population with unequivocal and explicit emphasis on sustainable development measure.

### 16.7 Roles of District Planning committee on financial outlay on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

#### Shared Learning Dialogues

SLD is a reiterative, cross-scales and cross-sectoral process that fosters learning and sharing by bringing together external scientific/ conceptual knowledge and local technical/ traditional knowledge. Two rounds of SLDs were carried out with 11-line departments in Puri. Prior to the SLDs, State Level & District Level inception meetings were held which provided valuable insights, especially, into macro and meso inter-sectoral issues of Disaster Management.

The objective of the first round of SLD was to understand intra- and inter- sectoral issues of vulnerabilities and gaps in capacities specifically in the context of disaster risks.

#### Figure 5: District Level SLD on CCA-DRR Integration in Puri District

The second round of SLD was aimed at understanding ways to address the underlying causes of vulnerability and risks considering the scope and thrust on various activities of the departments as outlined in their Annual Departmental Plans.

At core, the SLDs promoted greater understanding and development of shared visions of perceptions, needs and issues across diverse departments and stakeholders at various levels.

#### Community Consultation: -

Following the principles of SFDRR which advocates for a more people-centric preventive approach to disaster risks, community consultations were carried out in blocks & villages of Puri district under the guidance of emergency section. Five vulnerable rural blocks, one urban municipal ward & two villages facing frequent multi-hazard were selected for community consultation on the basis of Hazard, Vulnerability & Capacity Risk Assessment (HVCRA) Framework developed after consulting the line departments & District Emergency Cell. Tools like check list for discussions, hazard ranking using Participatory Rural Appraisal (PRA), HVCRA matrix and social cum resource map etc. were used in the process.

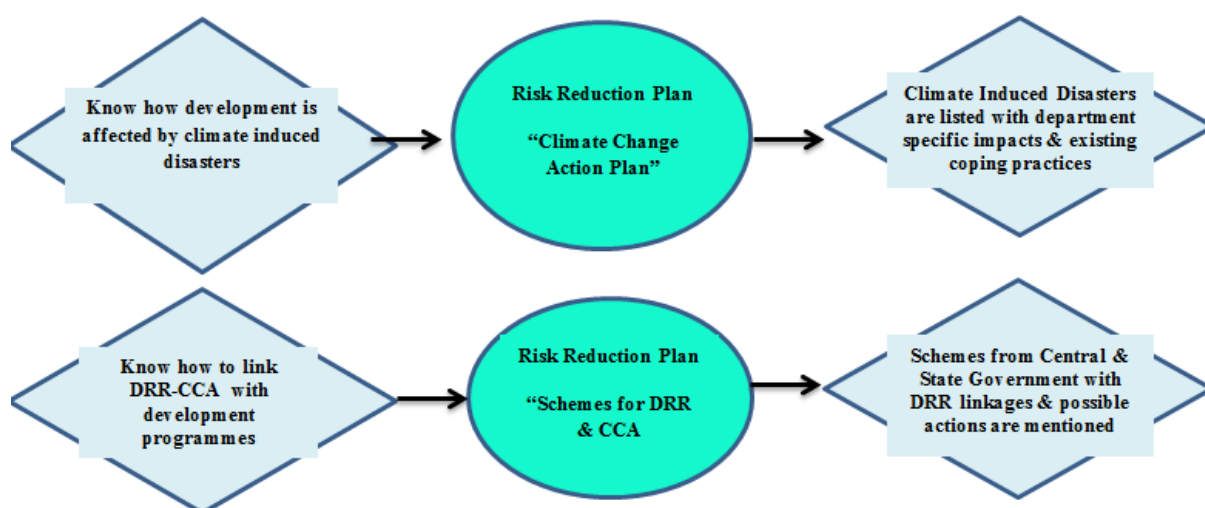
**Key information & knowledge generated from community consultation:**

- Identification of block wise hazards and exposure to climate change and disasters.
- Assessment of seasonality of hazards using PRA exercise.
- Analysis of history of hazards in the blocks.
- Vulnerability, Risk & Capacity Analysis in consultation with the community and block level officials
- Sharing of experience by community members helped in climate threshold analysis.

This led to a more comprehensive and effective DDMP of Puri district in view of climate change through validating the information in DDMP and including community voice in planning. Community consultation enhanced the awareness among various stakeholders by their direct engagement with development of disaster management plan and establishing a process for regular up-gradation of it in future.

Finally, by effective use of CRF, SLDs conduction, community consultation, using climate data and analysis and analysis of departmental plans & budgets, the DDMP of Puri district was revised. The newly formalised DDMP of Puri district provides technical support for strengthening capacity of stakeholders including communities and institutions for fast-track implementation of the planning frameworks on CCA & DRR.

This climate-sensitive DDMP includes a mitigation plan which is updated with insights from structured process of two rounds of consultations with key line departments (SLDs) on issues of mainstreaming CCA-DRR. Further, results from specific analysis on cyclones and extreme precipitations, and consultations with communities from select blocks/ villages/ urban areas contributed to the updation. On this basis, the mitigation actions of selected climate-induced disasters were revised and categorised into four priority areas of SFDRR.



**Figure 8: CCA-DRR in Puri DDMP**

**Heat Wave:-**

Large numbers of districts in Odisha including Puri are highly vulnerable to heat waves. The state saw a death toll of 67 in the year 2015 due to dehydration and heat stress. The new DDMP of Puri provides specific measures & approaches to deal with heat stress to serve the aim of bringing down the heat casualties down to zero which is common to Odisha State Heat Wave Action Plan (OSHAP). The OSDMA has recently updated the old OSHAP in view of increasing death tolls. This plan puts more focus on adaptive and resilience building measures. The new DDMP of Puri considers the similar approaches for heat wave resilient construction and adaptation measures.

### **Department wise key recommendations**

*(Source: SLD Reports, Puri)*

#### **Health & Family Welfare**

- There should be an earmarked fund for additional 30 % procurement of essential medicines for emergency situation.
- 10-20 % of medical and paramedical staff position is vacant in coastal areas. It needs to be filled immediately.
- There is an immediate need to cover all the coastal area CHCs with alternate power back up system.

*“Emphasis on strengthening the capacity of all vulnerable PHCs and Sub-centres should be done by making them better equipped with power back up, communication alternatives and other essentials” - Dr A Mohanty, ADMO, Puri*

#### **Forest Department**

- Urban forestry programme should be allowed by Puri Municipality by way of land allocation and funds.
- Need for training of lower level staff such as Rangers and Forest Guards and specific budgetary allocation for the same.
- Mechanised way of plantation is required rather than traditional methods.

#### **Agriculture Department**

- Weather advisory for the farmers will be very useful. It will help them to take necessary steps in input, cultivation, irrigation and harvesting.
- Water harvesting structures such as check dams on canal may improve the water table in drought prone areas.
- Procurement and distribution of the quality seeds in time needs to be ensured at district level.
- Budget provision in capacity building of farmers should increase up-to 20-25%.

*“Emphasis should be given on providing timely farm inputs to the farmers and making water available for dry season irrigation so that they can adapt to the unprecedented weather changes. Irrigation department should work on ensuring irrigation facilities in consultation with the Agriculture department” - Sri S. Chandrashelkhar Rao, Deputy Director Agriculture, Puri.*

#### **Irrigation Department**

- The operating “rule curve” of Hirakud dam needs to be aptly revised or a new dam should be constructed downstream of Hirakud for flood control in the deltaic areas of Puri district.

*“Inter-state cooperation needed for understanding risks. For example, rainfall of Chhattisgarh is closely related with the Mahanadi inflows for district Puri” – Mr Gagan Kumar Biswal, Executive Engineer, Irrigation department, Odisha*

### **Road & Building Department**

- Increase the funding to repair and maintain all roads every 3 years.
- Changing the road material from Bitumen-Tar Road to Cement-Concrete roads would improve the longevity of the roads.
- Design changes need to be introduced considering climate change impacts, new flooding levels and discharge quantum (for culverts).

### **Electricity Department (CESU)**

- Under-ground cabling in town areas is required.
- Shift from MS poles to GI poles for better strength and longevity is required
- Covered breaker rooms should be there to ensure continuity of power supply during events of lesser intensity.
- 33 kV and 33/11 kV control rooms should be gas and air insulated
- H-Pole structure for 33/11 kV lines for better stability and longevity is required

### **Animal Husbandry**

- Field staff people with knowledge of animals care are required.
- Additional non-departmental and non-technical activities add to the burden and efficiency of the working of department. Therefore, technical & man-power resources are required for these additional responsibilities.
- Go-downs should be constructed at Block level for cattle feed storage.
- Given the unique variation and geographical nature of Puri, a focused research of animal's adaptability in Puri environment is preferable.
- Re-emergence of disease after vaccination needs scientific probing.

### **Fisheries Department**

- There is a need to develop departmental contingency plans.
- The damage and loss assessment post disaster should be done together with the fisheries department, as the assessing personnel are not aware of the fish species lost, its value and
- other technical issues involved.
- Escalation of mechanization of 100% DAT operated boats, may be planned together with SDRF for better coordination of activities.

### **District Rural Development Agency**

- Training of all Panchayat members and departmental staff on disaster response is required.
- As being used in sand casting, MGNREGA money should also be used in draining out excess rain water from water logged areas.
- Convergence with other departments may be of great help such as drainage division of irrigation department can be used to drain the water for water logged areas.
- Storage facility/fund for producer groups is required to be made available under livelihood mission.
- A 30-40% increase is required for all housing schemes to meet out higher construction cost of design as per local scenario such as raising plinth level in all low lying areas. RCC roof should to be mandated in all housing schemes.

## **Urban Local Bodies**

- Puri Municipality as well as the notified area councils such as Konark, Pipli and Neemapara are the major urban hubs in the district which need attention in disaster management planning.
- Effective enforcement and regulation of land-use stipulated in Comprehensive Development Plan for Puri-Konark corridor (PKDA).
- Review and revision of the building regulations as appropriate considering cyclones (PKDA) is required.
- Construction of additional multipurpose cyclone shelters based on assessment of needs is required.
- Review is required for capacity of storm water drainage system and design drains that can optimally discharge the runoff from moderate to extreme precipitation events (Water Resources Department and Works Department, and Municipality).
- Alternative backup power for maintaining functionality of water supply system during disasters (PHED) should be provisioned.

## **Key highlights & takeaways of the intervention**

- Participation and level of engagement of officials in the state level & district level inception meetings and SLDs in Puri was overwhelming.
- Better understanding of intra and inter-sectoral vulnerability of key infrastructural assets and services.
- Technical and scientific knowledge on climate thresholds was generated through departmental consultations.
- Gaps in coordination and capacities that influence sectoral vulnerabilities were identified.
- Need of technical, organizational, financial and managerial requirements of the line departments were assessed.
- Qualitative & quantitative findings of SLDs and community consultations were used to upgrade the DDMP.
- Integration of CCA-DRR components in district disaster management as well as various departmental developmental plans.
- The intervention in Puri is in line with SFDRR, SDGs and the Paris Agreement, focusing on multi-hazard, multi-sectoral CCA-DRR practices with involvement of communities in disaster management planning and putting focus on softer options for mitigation and resilience.
- The Climate Smart DDMP of Puri which also puts focus on gender as a cross cutting issue, can be used as a model DDMP for other 30 districts of Odisha and can be scaled-up at national level.
- Climate analysis and climate threshold assessment of each department will help in risk management in future also.

## **Key Challenges of Integration**

- Lack of capacities at departmental level to understand the concepts of CCA-DRR because of which the departments hardly contribute in the formation of DDMP.
- Lack of sensitization of state and sub-national level departments on international and national commitments and their key respective roles in integration & implementation
- Problems in fund allocations after dissolution of Planning Commission and formation of new Niti Ayog.
- Inter-departmental convergence areas are not properly identified at sub-national and state level, thus, not included by the departments in their annual developmental plans
- The experience gained through consultation and implementation process at district level hardly reaches the state level (vertical gap).
- Unavailability of ground level data at district level.
- The prediction of cyclone which is the most prominent disaster is difficult.

- Majority of actions in DDMP still seem to be response centric, therefore, role of departmental developmental activities in pre and post disaster phase are mostly ambiguous.

### **Capacity Building Needs on CCA-DRR Integration:**

#### **At the State Level:**

- Orientation on SFDRR, SDGs, Paris Climate Change Agreement & inter linkages
- Training on integration of CCA-DRR with inter departmental convergence
- Establishing periodic review of planning and implementation

#### **At the District Level:**

- Capacity building on integration of CCA-DRR with inter departmental convergence
- Review of developmental plan implementation in view of disaster and climate risks on periodic basis under the aegis of DM & DDMA
- A monitoring and review mechanism of DDMP to be developed and enforced
- Climate data need to be generated at micro level and required infrastructure & capacity need to be built
- Deployment/fresh appointment of expert or nodal officer in emergency section and in other key line departments

### **The Way Ahead:**

#### **Training Manual**

After successfully updating the Puri DDMP in context of CCA-DRR, the intervention is looking forward for support from higher-level organisations (e.g., the National Disaster Management Authority and various ministries). The programme plans to share its experiences and strive for scaling up and replicating these efforts by capturing the programme experiences in the form of a training manual. The main aim of this manual is to promote & support training capacity building on mainstreaming of CCA & DRR integration into developmental planning processes with a special focus on sub-national and urban area contexts. NIDM being the national policy think tank & capacity building institute is bringing out this training manual along with GEAG & ISET-I to provide training & capacity building support to practitioners, policy makers, officials & academicians to pave a way to mainstream climate & disaster risks in developmental planning. A training programme by NIDM will be conducted after training manual development.

#### **Collector's Handbook**

District Collector's Handbook on mainstreaming CCA-DRR will also be developed as a sort of quick guide (ready reckoner). There is tremendous potential for reducing vulnerability and risks through integration of DRR in national and state schemes through structured framework and operational measures which a collector can only help in proper implementation. It will give a quick overview of roles & responsibilities of collectors in disaster management and will guide the collectors on various issues of CCA-DRR mainstreaming into development planning of districts.

#### **Research Paper on DDMP revision with CCA integration**

Further in the process, the initiative will come up with a research study which will demonstrate how Climate Smart DDMPs like that of Puri can be used to implement State Action Plan on Climate Change (SAPCC). A detailed analysis of DDMP of Puri-2016-17 will be done to understand the comprehensiveness of a DDMP and its effectiveness as a tool for implementation of SAPCC. Finally, monitoring systems and indicators will also be developed as part of the intervention to periodically monitor the efficacy of DDMP.

### **16.8 Fund provision for disaster preparedness & capacity building**

*Note: Provision of funds for different capacity building programmes and preparedness measures to be elaborated*

# Chapter 17: Lessons learnt and Documentation

## **Cyclone Hudhud**

During Cyclone Hudhud in the year 2014 evacuation of fishermen community was became very difficult. Generally, the fishermen community hesitates to move from their native place. Evacuation of fishermen community took place with the help of police from Penthakata area of Puri and Konark. The only casualty of Hudhud 2014 was Sudulu Goreya the fisherman of Penthakata, Puri. The incident occurred when the victim was trying to pull his two boats from sea to sea shore alone without help of others. He was died by putting himself between the two boats. The lesson learnt in this case was we should aware the fisherman community well advance regarding the disaster like cyclone. The fishermen community should be trained on the tactics of safeguarding their lives and properties during the disaster situation like Cyclone and Tsunami. Awareness should be created among the fisherman community regarding do's and do not's during the time of cyclone.

Another lesson also learnt during the Cyclone Hudhud in the year 2014 when the relief materials stored in the villages of Berhampura & Mahisa in Chilika Lake of Krushnaprasad Block was damaged and less in quantity while the relief materials brought back to district head quarter after the disaster. The identification of storage location for such vulnerable places like Berhampura & Mahisa is highly needed. Prepositioning of relief materials in these vulnerable areas of the district is highly essential at the time of flood and cyclone. In order to minimise the loss of relief materials there should be storage godowns in the vulnerable areas of the district. We can avoid the loss of relief materials by building more godowns in the vulnerable areas of the district. Identification of vulnerable villages must be done with the help of Block and Tahasil officials.

Further, we should try to learn from our mistakes and try to enhance the capacity of community to overcome these unforeseen situations. Awareness among the people regarding disaster should be created through mock drills, regular meeting of CSMMCs and FSMMCs, mock drills at the schools and educational institutions, hospitals, etc.

## **Extremely Severe Cyclonic Storm – “FANI”**

Extremely Severe Cyclone Storm “FANI” was made land fall on 3<sup>rd</sup> May 2019 near Puri from 8.00 AM to 12.00 PM. Due to the severity of the cyclone most of the trees uprooted, road communication blocked, houses got damaged, electrical poles and infrastructre badly affected, telecommunication network also cut off. All 11 Blocks and 4 ULBs were affected by the Cyclone FANI, more than 19 lakh people affected. The major concern was to clear road blockage. supplyadequate nos. of polythene sheetstothe affected people, sufficient relief materials both dry food and free kitchen, supply of drinking water, electricity supply, telecommunication network restoration and health facilities to both human and animals, House damage assessment was also big challenge the revenue field staffs drafted from other districts used for the assessment of house damage. For assessment of horticulture loss and loss to artisans the staffs from districts drafted. Similarly, assessment of animals lost, agricultural crop loss assessment & assessment of damage to boats, nets, fish farms etc. were also completed.

## **Prparedness**

- Immediate steps for shifting of old, infirm, disabled people and other people those are living in thatched houses along with nourishing mothers to Multipurpose Cyclone Shelters/ Multipurpose Flood Shelters/School Buildings/BNRJSK in case of exigencies.
- As a preparedness measure 129800 people evacuated and gave shelter at 357 safe shelters i.e. Cyclone/Flood Shelters, School Buildings, GP Offices, BNRGSKs, etc. which minimizes the the casualty.
- A Multi Agency Control Room at Collectorate under the supervision of a Senior Officer from State was functioning from 8 AM to 10 PM for better coordination among all agencies related to Relief and Restoration.
- An NGO coordination cell was functioning for coordination with NGOs and Corporate Houses.
- Control Room activated in District Emergency Operation Centre (DEOC), Blocks, Tahasils& all other line department offices 24x7 hour
- Fire department had been directed to be in readiness with their teams and JCB to clear the road blockage immediately if occurs due to the Severe Cyclonic Storm.
- Readiness for immediate restoration of electricity if disrupted. Uninterrupted electricity should be supplied to places like CHCs, PHCs, Collectorate, S. P Office etc with power back up.
- All the overhead tanks of Puri Town to be filld & all the generators are to be functional with adequate stock of POL &provide drinking water in tankers in case of any emergencies.
- Megaphones announcement to aware general public not to stay in kutcha houses with in 1.5 Kms from the Sea shore and set the domestic animals free. Announcement to inform the Fishermen not to venture into deep sea areas & whoever in the deep sea was advised to return to coast.
- The R.T.O, Puri had kept the vehicles ready to meet any emergency as and when required. Instructions to locally arrange the vehicles as well as the POL in case of emergencies.
- The Chief District Medical Officer, Puri is in readiness with his team of doctors/staff/Ambulances/Medicines. etc. to meet the emergent situation.
- 2 ODRAF Teams, 3 NDRF Teams, 12 Fire Service Teams, 32 Medical Teams & 45 Veterinary Teams deployed in vulnerable locations to counter any eventuatlites.
- 200 Trained NDMA Scheme “Aapada Mitra” volunteers helped the Block & District Administration in evacuation, free kitchen to the affected people at Cyclone / Flood shelter level.

## **Relief & Restoration**

- National Highway from Puri to Bhubaneswar cleared by 4<sup>th</sup> May 2019.
- All roads including village roads cleared by 15<sup>th</sup> May 2019.
- By 12<sup>th</sup> May 2019 Shree Jagannath Temple got electricity.

- 4000 workers, 200 technicians, 50 supervisors and senior officials including 6 IAS Officers were engaged for restoration of electricity.
- 50 Cell on Wheels (COWs) of different operating agencies for tele communication restoration.
- Mobile charging points provided in different locations of Puri Town.
- 21 mobile ATMs were operated for people.
- 14023 tube wells disinfected.
- 90% in Urban piped water supply restored by 10<sup>th</sup> May 2019.
- 100+ Generator sets were used for charging pipe water supply.
- 185 Tankers were used for providing drinking water in rural areas.
- 45 Police Platoons, 9 ODRAF Teams, 23 NDRF Teams, 52 Fire Service Teams, 45 Medical Teams, 45 Veterinary Teams, 50 Works Deptt. Teams (300 vehicles & 50 JCBs) deployed in vulnerable locations for clearance of road blockage, relief distribution, clearance of debris, restoration of drinking water supply, power supply, etc.
- 457 Inflatable Tower Lights used in 4 ULBs and 11 Block head quarters for lighting the Govt. offices and important roads and squares.
- Immediate relief free kitchen provided to 2.8 lakh affected population in 862 free kitchen centres for 15 days.
- Over 3 lakhs affected people provided polythene sheets to cover their damaged houses.
- Dry foods like Chuda, Gur and other necessary items like candles & free kerosene to the affected people.
- 5 Maitree shops were opened in Puri Town to provide necessary items to the affected people at fare price.
- 4000 animals and 24 lakhs poultry birds carcassing was done by Veterinary Deptt. with the help of Blue Cross of India a NGO from Tamil Nadu.
- Mobile veterinary units were opened for vaccination of animals.
- More than 700 MT fodder distributed for animals.

### **Lesson learnt during Extremely Severe Cyclonic Storm “FANI”**

The following measures will be taken up as a part of lessons learnt during the Extremely Severe Cyclonic Storm “FANI”.

- Availability of polythene sheets is a must, in District HQ and Tahasils well in advance before any disaster to meet the needs of the affected people immediately after the disaster. The Store house/ Godown needs to be **Strong, Accessible** with **Sufficient Space** to accommodate sufficient numbers of polythene rolls and to keep them safe from any hazards.
- Arrangements for stocking of sufficient food stuff, vegetables to run free kitchen during any disaster like situation for providing cooked food to the affected people in cyclone/flood or any safe shelters will be made, preferably for a period of 15 days.

- Prepositioning of HAM Radio or VHF in all Dist Offices & Block Offices for communication purpose.
- Identification of places for prepositioning of Cell on Wheels in Dist. Hqrs as well as in each Blocks for early restoration of Tele communication networks.
- Identification of places for prepositioning of Mobile ATMs in Dist. Hqrs as well as in each Blocks for fulfilment of the cash need of the public.
- Safety audit of Govt. buildings, electronic gadgets, etc. removal of LED display screens & High mast street lights, etc. will be made before any disaster like situation.
- Identification of locations for prepositioning of plasma cutters & hydra for immediate restoration of power supply and clearance of road blockage.
- Functioning of Integrated Control Room both in District HQ as well as in Block HQs, in order to have better coordination among the officials for timely completion of the relief & restoration activities.
- Provision of Walkie Talkies to all District level officials along with one police personnel for its operation.
- Availability of sufficient foods and drinking water for the persons engaged in restoration works like electricity, drinking water supply, sanitation, etc.
- Separate cells should be opened for coordination of restoration works.
- More numbers of farmers should be included under the Pradhan Mantri Fasal Bima Yojana (PMFBY) for getting benefit during any disaster.
- Building of an extra disaster resilient ward in District Head Quarter Hospital for 200 patients which may be used at the time of Rath Yatra or any disaster situation.
- 12 Mobile Medical Van (1 for DHH & 11 CHCs) with all equipments should be procured for immediate service to the affected people at the time of disaster.
- All road clearance teams (NDRF, ODRAF, Fire Service, RD & R&B) should worked under the command of Block Development Officer at Block level for quick clearance of road blockages.
- Identification and prepositioning of high performance saw machines for cutting of big uprooted trees.
- Assessment & identification of manpower, machinery & locations for carcass disposal of animals by the Veterinary department for quick disposal in order to prevent the public from any air/water borne diseases.

### **17.1 Procedure for preparation of DDMP as per the DM Act**

Under Section 31 of Disaster Management Act 2005 (DM Act), it is mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters. DDMP shall include Hazard Vulnerability Capacity and Risk Assessment (HVCRA), prevention, mitigation, preparedness measures, response plan and procedures. 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.

As per the DM Act 2005, DDMA Puri invited a meeting of all line departments and the members of DDMA to have a preliminary discussion on the formats given by SRC and OSDMA. A detailed discussion was made on the different formats and all the line departments issued instructions to provide necessary information so that all the required information will be incorporated in the DDMP. The processes followed to prepare the DDMP are given below:

1. Stakeholders meeting at the Dist. level on the formats given.
2. Detailed discussion was made on the format.
3. Letters issued under the signature of Collector & DM to the line departments to provide the information with a dateline.
4. Reminders were also issued to the defaulting line departments under the signature of ADM.
5. DPO, Emergency visited some of the offices to collect information and also entrusted to prepare the DDMP under the active supervision of DEO.
6. A sharing meeting organized for DDMA members to have a discussion on the plan prepared and to identify the gaps.
7. Necessary suggestions from DDMA members incorporated in the plan and one round of follow up made to collect the missing data from the line departments.
8. DDMP was finalized with information from the line departments.
9. After finalization, DDMP placed for approval of Chairman, DDMA and finally submitted to SRC for necessary information.

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

### **Additional District Magistrate, Puri:**

- ADM, Puri took the leading role in preparation of DDMP.
- Reminders issued to the line departments to provide the necessary data.
- Time to time reviewed the progress of preparation of DDMP by discussing with DEO and DPO, Emergency.

### **DEO, Puri:**

- Actively supervised the preparation of DDMP.
- Time to time called different departments to provide the required information.
- Talked to the senior officials to the departments to provide necessary inputs from their department for preparation of DDMP.
- Time and again wrote mails to all to provide data.

### **Nodal Officers:**

- Provided necessary support for data from their line departments.
- As huge data required from different departments, the Nodal officers took the pain of extracting the data from the files and provided to the Dist. Administration.

### 17.3 Support of line departments (for providing information)

- Line departments provided necessary data, but as the DDMP process was started in the month of March, it was difficult on their part to devote time for the data.
- After required follow up, the administration managed to get some data from line departments.
- Some of the line departments such as Dist Fire Officer, CDVO, DDA and some Block Development Officer cooperated fully.
- Other departments provided data but after constant follow ups.

### 17.4 Time lines for updating DDMP 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	3 <sup>rd</sup> week of Apr
2	Submission of base line data by all line departments	1 <sup>st</sup> week of May
3	Compilation of information's and preparation DDMP. Sharing of draft with Chairperson, members of DDMA and other stakeholders	2 <sup>nd</sup> week of May
4	Necessary modification and finalization	2 <sup>nd</sup> week of May
5	Placing the final copy before DDMA, finalization and submission of a copy to SDMA	3 <sup>rd</sup> week of May
6	Approval by SDMA	2 <sup>nd</sup> week of Jun

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

- Dist. level meeting on sharing of formats was done on 15<sup>th</sup> Mar, 2025.
- DEO used to do the weekly review the data collection.
- ADM used to do the fortnightly review of data collection and progress of DDMP.
- Sharing with DDMA members was done on 20.05.25.
- Necessary suggestion made by DDMA members incorporated in DDMP.
- Approval of DDMP was done on 20.05.25.
- The soft copy of the DDMP provided to all line departments to refer and asked for necessary suggestions, so that the same can be made more effective in the coming years.

### 17.6 Sharing and placing before DDMA for approval

After the sharing of DDMP with DDMA members on 20.05.25, the final touch was given to the DDMP.

**Power Boat and Safety Jacket position in Blockwise:**

Sl No.	Name of the Block	Type of Boat	No. of Boats	Life Jacket available	Life Buoy available
1	Astarang	Power Boat	4	20	3
2	Brahmagiri	Fiber	1	12	4
3	Delang	Fiber	1	10	2
		Fiber	1	10	2
		Aluminium	1	10	2
4	Gop	Fiber	2	15	8
		Steel Boat	1	0	0
5	Kakatpur	SOP-15	1	3	2
		Steel Boat SB-09	1	2	2
		Steel Boat SB-14	1	2	2
6	Kanas	Steel Boat	2	0	0
		Aluminium	3	0	0
7	Krushnaprasad	Fiber	2	10	6
8	Nimapada	Power Boat	2	4	4
9	Pipili	Fiber	3	10	6
10	Puri Sadar	Power Boat	3	12	12
<b>Total</b>			<b>29</b>	<b>120</b>	<b>55</b>

**List of Trained Aapada Mitra volunteers:**

Sl. No.	Name	Gender	Mobile No	Block Name	Village Name
1	Saumyaranjan Patra	Male	8117092503	Kakatpur	Rankoei
2	Subhrajit Kandi	Male	9556678295	Kakatpur	Somanathpur
3	Manasa Kumar Kandi	Male	9937921839	Kakatpur	Anantapur
4	Jitendra Sethy	Male	9668504588	Kakatpur	Dhanitrai
5	Manmohan Prusty	Male	9777281759	Kakatpur	Fakirasahi
6	Trilochana Panda	Male	9937556379	Kakatpur	Tulamal
7	Manoj Kumar Potei	Male	9938660144	Kakatpur	Chhotipada
8	Nrusingha Charan Swain	Male	7381590055	Kakatpur	Adhual
9	Laxmikanta Sahoo	Male	8457844037	Kakatpur	Nasikeswar
10	Bijaya Kumar Mohanty	Male	8455986040	Kakatpur	Kurujanga
11	Manas Ojha	Male	9437154292	Kakatpur	Fakirasahi
12	Millan Swain	Male	7653951806	Kakatpur	Hasinpur
13	Kumar Kandi	Male	7789816422	Kakatpur	Fakirasahi
14	Hrushikesh Tripathy	Male	9658815248	Kakatpur	Krupasindhupur
15	Manoj Kumar Mohanty	Male	8908965280	Kakatpur	Krupasindhupur
16	Prasanta Kumar Sahoo	Male	9937950823	Kakatpur	Tentulia
17	Dhanjaya Parida	Male	7681054327	Astarang	Dihakarada
18	Samira Bhuyan	Male	9078344781	Astarang	Tandahar
19	Pradipta Kumar Biswal	Male	9668664222	Astarang	Keutajanga
20	Bapina Das	Male	7504479155	Astarang	Patsundarpur
21	Ajit Kumar Nayak	Male	8658900321	Astarang	Namaro
22	Akash Behera	Male	9658443235	Astarang	Nagar
23	Pratyush Behera	Male	9853917134	Astarang	Nagar
24	Rashmiranjan Das	Male	7064145812	Astarang	Kendrapati
25	Abdul Riaz	Male	8456013159	Pipili	Danogahir
26	Sachikanta Barik	Male	8260558627	Pipili	Bilipada
27	Chita Ranjan Rath	Male	7205162407	Pipili	Laxminarayanpur
28	Md Parwes Uddin	Male	9938536551	Pipili	Danogahir
29	Chandan Rath	Male	9937304021	Pipili	Laxminarayanpur
30	Md Nasuru Uddin	Male	9337279683	Pipili	Danogahir
31	Manas Kumar Padhi	Male	9437729721	Pipili	Haladibasanta
32	Ashutosh Harichandan	Male	7328874556	Pipili	Kairi
33	Hemanta Kumar Swain	Male	9437818599	Pipili	Kakudia
34	Biswajit Sahoo	Male	9777200899	Kanas	Andarsingh
35	Anil Mishra	Male	9777593625	Kanas	Andarsingh
36	Sanjib Baliarsingh	Male	9090989374	Kanas	Andarsingh
37	Tapas Jena	Male	8093314317	Kanas	Chandapada Balajitpur
38	Budhadeb Malik	Male	9090727353	Kanas	Chandapada Balajitpur
39	Sanjay Sundaray	Male	9556524599	Kanas	Gharachhia
40	Biswajit Dalasingh	Male	9124667621	Kanas	Dokanda
41	Manas Ranjan Rautaray	Male	7377776298	Kanas	Dokanda
42	Deepak Kumar Jena	Male	7381867387	Delang	Pidhapatana
43	Prakash Bhola	Male	9776658222	Delang	Nadakhanda
44	Biranchinarayan Pradhan	Male	9078121212	Delang	Gudupaila

45	Prasad Ku Parida	Male	7381895618	Delang	Indipur
46	Satyabratta Jena	Male	7381366457	Delang	Indipur
47	Chittaranjan Swain	Male	8458010760	Delang	Nalibasanta
48	Soumyaranjan Pradhan	Male	8658056156	Delang	Gudipaila
49	Saumyajeet Srichandan	Male	7077037502	Delang	Gadakalupada
50	Tanmaya Chatterjee	Male	8270777760	Puri Sadar	Heragouri Sahi
51	Santoshsekhar Mohanty	Male	9124548404	Puri Sadar	Habeli Lane
52	Suryanarayan Pradhan	Male	8908637207	Puri Sadar	Charinala
53	Bishram Pradhan	Male	8458004683	Puri Sadar	Kurunti
54	Lala Ananta Kumar Singh	Male	9437280727	Puri Sadar	Srikhetra Colony
55	Sadananda Sahoo	Male	9238225353	Puri Sadar	Bhudan Nagar
56	G. Bapi	Male	8093663788	Puri Sadar	Sanabalinolia sahi
57	Bikram Kumar Nayak	Male	9583804611	Puri Sadar	Khandighar
58	Sasmita Das	Female	9937515314	Puri Sadar	Janakadeipur
59	Deepak Kumar Patra	Male	9861616888	Puri Sadar	Dolamandapsahi
60	Rubina Pattanaik	Female	8908298193	Puri Sadar	Dolamandapsahi
61	Sandhyarani Swain	Female	9556398919	Puri Sadar	Aripoda
62	Sumanta Pradhan	Male	9777897579	Puri Sadar	Nuagaon
63	Sridhartha Sahoo	Male	9658866059	Puri Sadar	Gopinathpur
64	Manmath Pradhan	Male	7377702204	Puri Sadar	Samangara
65	K. Prafulla Kumar	Male	7205528477	Puri Sadar	Mochi Sahi
66	Rasikaraj Parichha	Male	9861527612	Puri Sadar	Dolamandapsahi
67	Anita Pradhan	Female	8118067284	Puri Sadar	Beladala
68	Nrushingha Pradhan	Male	9668614834	Puri Sadar	Kaupal
69	Debaraj Jena	Male	8018308024	Puri Sadar	Paika Sahi
70	Pramod Kumar Parida	Male	9692072345	Puri Sadar	Nuapatana
71	Sanjay Kumar Pradhan	Male	7978329143	Puri Sadar	Beladala
72	Pratap Kumar Swain	Male	9861038677	Puri Sadar	Tandikera
73	Chunilata Bhoi	Female	9114438580	Puri Sadar	Bangurabagadadarpur
74	Mahendra Pradhan	Male	7894248602	Puri Sadar	Kurunti
75	Bipin Chandra Jena	Male	9777244228	Brahmagiri	Khalapada
76	Bichitrasen Biswal	Male	7377158321	Brahmagiri	Dharanikudi
77	Chita Ranjan Dalai	Male	9668990298	Brahmagiri	Hasinipur
78	Suresh Maharana	Male	9556338419	Brahmagiri	Manapur
79	Asutosh Pradhan	Male	9692253622	Brahmagiri	Anatirish
80	Santosh Pradhan	Male	7377082692	Brahmagiri	Siara
81	Biranchi Narayan Dalai	Male	9778956106	Brahmagiri	Badabenakudi
82	Prasanta Kumar Jena	Male	8018320892	Brahmagiri	Damodarpur
83	Pradipta Kumar Behera	Male	9583360835	Krushnaprasad	Arakhakuda
84	Satyabrata Dalai	Male	9692465341	Krushnaprasad	Rameswarpur
85	Biju Behera	Male	9114240071	Krushnaprasad	Gopinathpur
86	Bhaskar Kumar Tarei	Male	8658232502	Krushnaprasad	Sipia
87	Anil Kumar Palei	Male	9556998333	Krushnaprasad	Gopalpur

88	Kabi Behera	Male	8658267464	Krushnaprasad	Khirisahi
89	Satyabrata Palei	Male	9938170404	Krushnaprasad	Khatiakudi
90	Bidusha Priya Nayak	Male	9861051574	Krushnaprasad	Mahensa
91	Prasanta Kumar Biswal	Male	8260233984	Krushnaprasad	Talatala
92	Prasanta Kumar Pahan	Male	7894292312	Krushnaprasad	Maluda Jagati Sahi
93	N. Samir Kumar	Male	9937635967	Krushnaprasad	Gopalpur
94	Shankarshan Behera	Male	9937733026	Krushnaprasad	Kumarpur
95	Prasanna Kumar Palei	Male	9681079885	Krushnaprasad	Jharakata
96	Biswojit Nahak	Male	7894172643	Krushnaprasad	Titipa
97	Pramod Kumar Behera	Male	9658138961	Krushnaprasad	Gangadharpur
98	Upendra Biswal	Male	9438280805	Satyabadi	Dubuduba
99	Dipti Ranjan Mohanty	Male	7978067615	Satyabadi	Mahamayasahi
100	Abinash Dalai	Male	7381860687	Satyabadi	Jayarampur
101	Bijay Kumar Sahoo	Male	8093939066	Satyabadi	Matha Sahi
102	Susanti Bhoi	Female	7684039187	Satyabadi	Biswanathpur
103	Sarita Jena	Female	7653017641	Satyabadi	Alandapada
104	Sumanta Ghatuary	Male	9114620706	Satyabadi	Mulaalasa
105	Bikash Ranjan Pradhan	Male	9583582856	Satyabadi	Mulaalasa
106	Jalandhar Sethi	Male	9777922580	Satyabadi	Bamabarada
107	Hara Prasad Mishra	Male	9583381060	Satyabadi	Biswanathpur
108	Bibhudutta Pradhan	Male	9861857855	Satyabadi	Mulaalasa
109	Laxminarayan Mishra	Male	7653955122	Satyabadi	Nuagaon
110	Bikram Kumar Pradhan	Male	9437865016	Satyabadi	Mulaalasa
111	Suchismita Pani	Female	8908835921	Satyabadi	Sanakanjia
112	Amrita Pradhan	Female	7684894996	Satyabadi	Mulaalasa
113	Pranati Pradhan	Female	8984323505	Satyabadi	Mulaalasa
114	Puspalata Mohapatra	Female	9937159136	Satyabadi	Sanakanjia
115	Biswabhusan Rout	Male	9178070155	Satyabadi	Pakhimunda
116	Rakesh Kumar Baral	Male	7978292920	Satyabadi	Badahat
117	Akshyaya Kumar Khotai	Male	7381674410	Satyabadi	Dugal
118	Laxmidhar Behera	Male	7609984830	Satyabadi	Basudeipur
119	Mihir Biswal	Male	7205189119	Satyabadi	Dubuduba
120	Bijaya Kumar Mallik	Male	7978918206	Kanas	Tipuri
121	Deepak Kumar Pradhan	Male	9040391003	Delang	Panchupalla
122	Manaswini Pradhan	Male	9583309770	Puri Sadar	Ola
123	Mangu Kabi	Male	9777521120	Brahmagiri	Satikpur
124	Ranjan Kumar Behera	Male	7682065039	Brahmagiri	Moto
125	Subhrakanta Sahoo	Male	9777187876	Brahmagiri	Aruagobindpur
126	Soumya Ranjan Pradhan	Male	9692471047	Brahmagiri	Palank
127	Manas Kumar Nayak	Male	7978448691	Brahmagiri	Balabhadrapatana
128	Anam Charan Bhoi	Male	7873273768	Brahmagiri	Narasinghapatana
129	Amaresh Nayak	Male	9583992742	Brahmagiri	Chapamanik
130	Chhaila Kumar Mallik	Male	9937489396	Brahmagiri	Srikatnuapada

131	Rajendra Ku Das	Male	9777884999	Brahmagiri	Raibidhar
132	Parbati Dalai	Female	7873819586	Brahmagiri	Sahaspur
133	Shibasambhu Machhua	Male	7377342933	Brahmagiri	Kadajit
134	Dusmanta Pradhan	Male	9776317171	Brahmagiri	Jagannath Patana
135	Papuni Jena	Male	9937840703	Brahmagiri	Damodarpur
136	Bhagyashree Jena	Female	7377698487	Brahmagiri	Damodarpur
137	Sagar Lenka	Male	9776641723	Brahmagiri	Sanangunjar
138	Sandhyarani Parida	Female	9556757876	Brahmagiri	Kuapada
139	Sunita Sahoo	Female	8596903211	Brahmagiri	Haridas
140	Rama Chandra Jena	Male	7327836717	Brahmagiri	Rayaghat
141	Sibaram Penthoi	Male	7381614133	Brahmagiri	Talamala
142	Tapaswini Swain	Female	7437824664	Brahmagiri	Bidurabank
143	Sujata Jena	Female	9938862518	Brahmagiri	Barudi
144	Sarbeswore Sahoo	Male	6370854901	Brahmagiri	Manapada
145	Mitali Sahoo	Female	8456845981	Brahmagiri	Bengama
146	Susri Sangita Jena	Female	6371300264	Brahmagiri	Barudi
147	Swagat Kumar Jena	Male	9555616152	Krushnaprasad	Khatisahi
148	Prasanta Behera	Male	9668762436	Kanas	Nuadokanda
149	Shibasankar Bairisal	Male	9776133810	Kanas	Kanas
150	Chitrasena Champati	Male	9556533577	Kanas	Nanakera
151	Ajaya Ku. Samantary	Male	8339838337	Kanas	Jodapadar
152	Abhijit Samantsinghar	Male	7788928720	Kanas	Ogalapur
153	Tapan Ku Biswal	Male	9556393172	Kanas	Harasapada
154	Santosh Jena	Male	9178900919	Kanas	Dupur
155	Manoranjan Mahapatra	Male	9937331881	Kanas	Ogalapur
156	Biswabhusan Sahoo	Male	9556157263	Kanas	Guadia
157	Nrusingha Biswal	Male	9078209707	Kanas	Harasapada
158	Ganesh Sahoo	Male	8328864426	Kanas	Kaudikani
159	Samir Kumar Jena	Male	8658913591	Kanas	Chupuringi
160	Mrutyunjaya Behera	Male	9178727564	Kanas	Karamala
161	Jyotsnamayee Biswal	Female	7894093945	Kanas	Harasapada
162	Sangram Keswori Barik	Male	9937684219	Kanas	Chandapada Balajitpur
163	Sujata Pradhan	Female	8456842207	Kanas	Bhatapada
164	Biswapratap Jena	Male	8596088350	Kanas	Chandapada Balajitpur
165	Harapriya Baral	Female	6371949167	Kanas	Harasapada
166	Sabitri Sahoo	Female	9090893312	Kanas	Guadia
167	Banita Biswal	Female	8327786907	Kanas	Harasapada
168	Sunita Biswal	Female	7684885423	Kanas	Harasapada
169	Dusasan Sethy	Male	9938519986	Kanas	Karamala
170	Tapaswini Baral	Female	9090025267	Brahmagiri	Ghatakudi
171	Madhusmita Khatoi	Female	8658771156	Delang	Amrutapur

172	Satyabrata Panda	Male	9337046885	Satyabadi	Sukal
173	Ranjit Kumar Muduli	Male	9585168012	Gop	Junei
174	Sesan Mohanty	Male	8984147846	Gop	Inchol
175	Smurtiranjan Mohanty	Male	7381774249	Gop	Kantijhadi
176	Lipsarani Nayak	Female	7751883887	Gop	Alisi
177	Satyabrata Nayak	Male	7788828852	Gop	Matiapada
178	Saroj Kumar Mangaraj	Male	9556896381	Gop	Aloi
179	Sushanta Kumar Muduli	Male	9853232709	Gop	Anasara
180	Sujata Rautray	Female	9938994708	Gop	Badagaon
181	Dipak Kumar Pradhan	Male	7381633878	Gop	Badatara
182	Choka Anand	Male	8093796623	Gop	Chandrabhaga
183	Ranjana Jena	Female	7538019888	Gop	Sarada
184	Mamata Das	Female	9668260076	Gop	Barimunda
185	Jyotshnamayee Swain	Female	8908383661	Gop	Sarada
186	Manasi Nayak	Female	9114617765	Gop	Bagalei
187	Jyotiranjan Seth	Male	9090217229	Gop	Anasara
188	Gyana Ranjan Parida	Male	8908793815	Gop	Sarada
189	Pradip Kumar Bhanja	Male	9090437582	Gop	Kushupur
190	Swarajya Khuntia	Male	9078529014	Gop	Sarada
191	Jagabandhu Behera	Male	8093511104	Nimapara	Badabazar
192	Biswajit Majhi	Male	9583629961	Nimapara	Kajipatna
193	Ranjit Kumar Parida	Male	9439959358	Nimapara	Badagaon
194	Tofan Kumar Behera	Male	9439010647	Nimapara	Bamajhatipatana
195	Biswonath Bhoi	Male	8093681958	Nimapara	Rench Sasan
196	Dibakar Nayak	Male	8018048099	Nimapara	Janara
197	Santosh Kumar Rout	Male	9178877104	Nimapara	Amaranga
198	Khirod Chandra Mallick	Male	8093771226	Nimapara	Rench Sasan
199	Santosh Kumar Das	Male	8895351273	Nimapara	Jainabad
200	Pradipta Nayak	Male	8260344317	Nimapara	Alanda