

2021-22



District Disaster Management Plan

RAYAGADA, ODISHA

VOLUME - I

District Disaster Management Authority

Rayagada-765001, Odisha, India

2021-22

**District Disaster
Management Plan**

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**DISTRICT DISASTER MANAGEMENT AUTHORITY
RAYAGADA, ODISHA**

**Address:
COLLECTORATE (EMERGENCY SECTION), RAYAGADA-765001
Telephone: 06856-224082, 224062, Email: deocrayagada@rediffmail.com**

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Abbreviation

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AAO	:	Assistant Agriculture Officer
ACSO	:	Assistant Civil Supply Officer
ADMO	:	Additional District Medical Officer
ADVO	:	Additional District Veterinary Officer
ASHA	:	Accredited Social Health Activist
AWW	:	Anganwadi Worker
BEO	:	Block Education Officer
CDMO	:	Chief District Medical Officer
CDVO	:	Chief District Veterinary Officer
CPR	:	Cardio Pulmonary Resuscitation
CSO	:	Civil Supply Officer
DAO	:	District Agriculture Officer
DAO	:	District Accounts Officer
DDMA	:	District Disaster Management Authority
DDMP	:	District Disaster Management Plan
DEO	:	District Education Officer
DEOC	:	District Emergency Operation Centre
DLO	:	District Labour Officer
DM	:	Disaster Management
DPM	:	District Programme Manager
DPO	:	District Programme Officer, Rashtriya Madhyamik (RMSA) Shiksha Abhiyan
DPO (SSA)	:	District Programme Officer, Sarva Shiksha Abhiyan
DRR	:	Disaster Risk Reduction
DSS	:	Distribution Substations
DSWO	:	District Social Welfare Officer
HR	:	Human Resource
HRVCA	:	Hazard Risk Vulnerability and Capacity Analysis
LI	:	Labour Inspector
LI	:	Livestock Inspector
MI	:	Marketing Inspector
MO	:	Medical Officer
MVI	:	Motor Vehicle Inspector
MSK	:	Medvedev, Sponheuer and Karnik Scale

NDMA	:	National Disaster Management Authority
NDRF	:	National Disaster Response Force
NEC	:	National Executive Committee
NGO	:	Non-Government Organization
ORS	:	Oral Rehydration Solution
Paravet	:	Para Veterinary
PSS	:	Primary Substation
PwD	:	Person's with Disability
RI	:	Revenue Inspector
RTO	:	Regional Transport Officer
SAR	:	Search and Rescue
SDMA	:	State Disaster Management Authority
SDWO	:	Sub-Divisional Welfare Officer
SEC	:	State Executive Committee
SI	:	Supply Inspector
SLCNC	:	State Level Committee on Natural Calamity
SOP	:	Standard Operating Procedure
TO	:	Treasury Officer
VAW	:	Village Agriculture Worker
VDS	:	Veterinary Dispensaries
Vet	:	Veterinary

Introduction

The Disaster Management Act 2005 makes it mandatory on the part of District Disaster Management Authority (DDMA) to adopt a continuous, comprehensive and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters. These processes are to be incorporated in the developmental plans of the different departments and preparedness to meet the disaster and relief, rescue and rehabilitation thereafter, so as to minimize the loss to be suffered by the communities and are to be documented so that it is handy and accessible to the general public at large.

Section 31 of Disaster Management Act 2005 (DM Act) provides directive to have a disaster management plan in every district. In accordance with the provisions of the DM Act the District Disaster Management Plan (DDMP) of Rayagada shall include Hazard, Risk, Vulnerability and Capacity Assessment (HRVCA), prevention, mitigation, preparedness, response plan and procedures to reduce the impact of various disasters.

1.1 Aims and Objectives of the DDMP

- i. To identify the area and locations vulnerable to major types of hazards in the district.
- ii. To adopt proactive measures at district level by all the government 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.
- iv. Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
- v. Manage the future development to mitigate the effect of natural hazards in the district.

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

The District Disaster Management Plan of Rayagada is a guide for achieving the core objectives of mitigation, preparedness, response and recovery in disaster management. This Plan has been prepared to respond to disasters with a sense of urgency in a planned way to minimize the human, property and environmental loss.

1.2 Preparation and Approval of DDMP

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

The District Collector will discuss the modalities and seek views for preparation of a holistic District Disaster Management Plan in the meeting of the DDMA held in the month of January and to prepare the DDMP by the end of February every year. After finalisation, the District Authority shall send a copy of the District Disaster Management Plan to the State Disaster Management Authority for approval. The District Disaster Management Plan should be reviewed and updated annually.

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

Identified the important line departments in the district and organised an initiation workshop to discuss expected inputs from all the stakeholders and evolved a common framework for preparation of an integrated comprehensive disaster management plan for Rayagada District.

Identified the natural and man-made hazards face this district and the line agencies analysed each hazard in detail, made a quantitative and qualitative assessment of the risks

involved and suggested different measures to reduce the risk. The line agencies also suggested measures for preparedness and timely action in the event of a disaster and also actions to prevent disaster wherever possible. It is accepted that suggested measures would address the preparedness at all stakeholder's level such as the public representative, government and private sector, non-government organization and community at a large.

This plan is prepared broadly based on the review of past incidents experienced this district and analysing the vulnerability atlas of Rayagada district. On assessment of HRVC identified the district's vulnerability to different natural and man-made hazards. Also focused due attention on vulnerable groups and critical infrastructures to minimize the losses through advance preparedness and timely action.

This DDMP is written in the Model Framework of OSDMA and as per the guidelines of NDMA. The draft plan was sent to the members of DDMA and all the stakeholders of line department for their critical review and their feedback suggestions were incorporated. Then the final plan was prepared and sent to the State Authority for accord the approval.

1.4 Stakeholders and their Responsibilities

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

The District Collector

District Disaster Management Authority (DDMA) & District Level Committee on Natural Calamity (DLCNC) are the apex planning body at the district level and will play a major role in preparedness and mitigation. The Collector is the central authority to exercise emergency powers to issue directives in the following ways.

- 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

- 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.
- iv. 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.
- v. Trust/organisations managing places of worships and congregation.
- vi. Each establishment/organisation identified as critical infrastructure and key resources, including places of congregation in a district shall prepare on-site and off-site disaster management plan.
- vii. Carry out mitigation, response, relief, rehabilitation and 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 Corporate Social Responsibility, undertake Disaster Risk Reduction projects in consultation with District Collector for enhancing district's resilience.

Community Groups and Volunteer Agencies

- i. Local community groups and voluntary agencies including non-government organisations normally help in prevention and mitigation activities under the overall direction and supervision of the DDMA or the Collector.

- ii. They should be encouraged to participate in all training activities as may be organized and should familiarise themselves with their role in disaster management.

Citizens

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

1.5 Plans for Review and Updating: Periodicity

- Dissemination - The plan must be disseminated to use at all level in the district for effective disaster management.
- Revise and Maintain - Planning teams should establish a process for reviewing and revising the plan. Reviews should be a recurring activity. Review on an annual basis is considered minimum. It should be mandatory to consider reviewing and updating the plan after the following events:
 - i. A major incident.
 - ii. A change in operational resources (i.e., policy, personnel, organizational structures, management processes, facilities, equipment).
 - iii. A formal update of planning guidance or standards.
 - iv. Major exercises.
 - iv. A change in the district's demographics or hazard or threat profile.
 - v. The enactment of new or amended laws or ordinances.

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

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



District Profile

2.1 History & Location

History of Rayagada is an unwritten history of aborigines mainly Kondhas, Sauras and other tribals of the District. Though scholars have gathered evidence of existence of a civilization of Paleolithic Age on river side of Vamsadhara and Nagavali, due to lack of research, excavation, fossil analysis, history has not been written till 1516 AD (rise of Nandapur Kingdom). Existence of an earthen fort near Rayagada and Paik villages near Biriguda throws light on the fact that Rayagada was a strong political entity since rise of Nandapur Kingdom in 1516 AD with non-titling in a tribal dominated kingdom.

Rayagada District is situated in between longitude 82°51' to 84°02' E and latitude 19°00' to 19°58' N. The district is located in south corner of Odisha and surrounded by Gajapati district on the east, Kandhamal in north-east, Kalahandi on west, Koraput on south-west and Vijayanagar District of Andhra Pradesh on south respectively stretches over an area of 7073 Sq.Km. approximately.

[Source: Rayagada District Gazetteer]

2.2 Administrative Setup

On 2nd October, 1992, Rayagada came into being as a separate district of Odisha State. The district is carved out of Koraput district vide the Notification No.49137/R dated 01-10-1992 of R&E Department, Government of Odisha.

The Administrative setup is delineated as below:

i.	Sub-Division	:	02	vii.	RI Circles	:	81
ii.	Tahasils	:	11	viii.	Census Towns	:	04
iii.	Blocks	:	11	ix.	ULBs	:	03
iv.	Gram Panchayats	:	182	x.	Police Stations	:	17
v.	Revenue Villages	:	2657	xi.	Fire Stations	:	10
vi.	Uninhabited Villages	:	197	xii.	Assembly Constituencies	:	03

[Details are at Table 1.1 of Volume-II of the DDMP]

2.3 Climate & Rain Fall

The climate of the major portion of Rayagada District, which lies to the east of the eastern ghat, is more like that of the east coast. The climate of the remaining region of the District due to its elevation and situation on the Eastern Ghats is different than this. The year may be divided into four seasons, the hot season from March to May, the southwest monsoon season from June to September, the post monsoon season from October to November and the cold season from December to February.

In 2020, Actual rainfall was 1315.36 mm against the Normal rainfall 1285.9 mm of the district. The spatial distribution of rainfall in southwest monsoon season is largely influenced by Eastern Ghats. Region around Rayagada gets lesser rain i.e. about 1180.4 mm being leeward side during southwest monsoon while the region around Gunupur (Hydro) gets about 1404.9 mm of rainfall in the southeastern part of the District.

[Source: Emergency Sec./Rayagada District Gazetteer]

2.4 Geography & Topography

Rayagada District lies on a section of the Eastern Ghats having mean elevations from 3000 feet to 500 feet above MSL. The most conspicuous mountain range is in the Gunupur Sub-Division which is the Niyamgiri, rugged mass on the borders of the Rayagada and Gunupur Sub-Divisions which rise steeply from 1000 feet to a number of peaks of which the highest is 4970 feet above MSL. The south-west and the west of Rayagada are the hilly region of Narayanpatna and Kashipur which are, in part, continuous with the 3000 feet plateau. The east of Rayagada and between the valleys of Nagavali and Vamsadhara are the Kailaskota hills. Here there are summits of 3000 feet and more, the principal being 'Matti Dongar' 3304 feet and 'Jora Dongar' 3289 feet. On the left bank of the Vamsadhara, east and north-east of Gunupur, rise the Puttasinh hills, the abode of Lanjia Savaras.

The highest peak of the hills is 'Thaladi Dongar', which is 3217 feet above MSL. The entire Kashipur, Kalyansingpur and Kolnara Blocks contiguous with the west and south-west of Rayagada is a wild country side with terrains of hills and valleys. The topography of the District reveals it as a watershed full of virgin forests and rivers.

[Source: Rayagada District Gazetteer]

2.5 River System

Rayagada District has two large and important rivers, the Vamsadhara and the Nagavali which flow southwards into Srikakulam of Andhra Pradesh and fall into the Bay of Bengal.

Vamsadhara

The Vamsadhara is 173 miles (277 kilometres) long of which 88 miles (140 kilometres) are through this District. For some distance, this river serves as the boundary

between Gajapati district of Odisha and Srikakulam District of Andhra Pradesh. Rising from the extreme north of the Tahasil of Bissam Cuttack, the river Vamsadhara flows through both the Tahasils of Gunupur and Bissam Cuttack.

Nagavali

The river Nagavali is 151 miles (241 kilometres) long out of which 63 miles (100 kilometres) run through this District. It rises in the Kalahandi District and flows through the fertile Kalyansingpur valley, then flown past Rayagada and enters Srikakulam District. Ultimately, it falls into the Bay of Bengal. Near Rayagada it becomes a gorge with two falls of 20 and 30 feet. The river travels occurring at a height of 200 feet above the river-bed indicates a deep cutting river through soft soil as well as rising land. It is joined by another tributary the Jhanjabati, which drains the Narayanpatna area. Before it reaches the sea near Srikakulam of Andhra Pradesh, it undergoes a change of name.

Presence of these two major river systems is always a threat to few parts of the district for causing of floods. Gauge reading of water level in the river Bansadhara are available at different places namely Kutragada, Gudari, and Gunpur of Rayagada District and Kasinagar of Gajapati District.

[Source: Rayagada District Gazetteer]

2.6 Demography

As per 2011 Census, the population of Rayagada District and its composition of different category of population are as follows:

Households and its Distribution

Sl. No.	Total Number of Families/HH	Category		Category			Category		
		Rural	Urban	SC	ST	OBC	GEN	BPL	APL
1.	226144	201386	24758	33357	121631	-	-	-	-

Population and its Composition

Sl. No.	Population			SC		ST		OBC	
	T	M	F	M	F	M	F	M	F
1.	967911	471960	495951	68068	71446	259040	282865	-	-

- Population density of the district - 137 per Sq.km.
- Decadal growth of population - 16.46%

Religion wise Distribution of Population

Sl. No.	Total Population	Category				
		Hindu	Muslim	Christian	Sikh	Others
1.	967911	885972	5635	75867	268	169

Age Group

Sl. No.	Total Population	0-5 years	6-14 years	15-59 years	60 years and above	Age Not Stated
1.	967911	123361	210509	557683	72607	3751

Sex Ratio

1.	Sex Ratio (Females per 1000 Males)	1051
2.	Sex Ration (0-6 Years)	965

Literacy Rate

Sl. No.	Literacy	Total	Male	Female
1.	Rate	49.76	61.04	39.19

[Source: Census 2011. Details are at Table 1.2 to 1.8of Volume-II of the DDMP]

2.7 Socio-Economic Profile of the District

Workforce Participation

The total worker of the district as per 2011 Census is 500789 out of them Main workers are 227815 and Marginal workers are 239307.

Workforce Participation Rate

Total Workforce Participation Rate is 48.26, The Male and Female Workforce Participation Rate is 54.67 and 42.16 respectively as per the 2011 Census in this district.

[Source: Census 2011. Details are at Table 1.9 of Volume II of the DDMP]

Land Holding Pattern

The land holding pattern in the district is Marginal Farmers (<1.0 Ha.) 133655, Small Farmers (1.0 to < 2 Ha.) 71401, Semi Medium (2.0 to <4.0 Ha.) 26777, Medium Farmers (4.0 to < 10 Ha.) 2625, Large Farmers (10.0 Ha. and above) 493 and the Average Size of Land Holding is 1.22 in this district.

[Source: Details are at Table 1.10 of Volume II of the DDMP]

Agriculture and Irrigation

Agriculture is the prime occupation in the district. During the year 2020, the net area sown was 173919 hectares. The major crops grown are paddy, maize, ragi, millets, pulses and wheat. Cash crops such as cotton, spices, sugarcane and tabaco also grown in this district.

The production of Paddy was 2921827 quintals, Maize 572295 quintals, Ragi 126800 quintals, Wheat 192 quintals, Bajra 860 quintals, Pulses 370460 quintals, Oil seeds 136127 quintals, Species 65775 and Vegetables 1971150 quintals. During 2020, total fertilizer used in this district was about 28350 quintals.

In the year 2020, the irrigation potential during Kharif Season was around 60733 hectares from different sources of irrigation.

[Source: Details are at Table 1.12 & 1.13 of Volume II of the DDMP]

Employment and Livelihood

According to the Census-2011, there are 99265 people directly employed in agricultural activities, 248175 people engaged as agricultural labourers and othe workers are 109723. Also people engaged in fishery, animal husbandry, business and service activities.

[Source: Census-2011. Details are at Table 1.23 of Volume II of the DDMP]

Industries and Mining

In this district during the year 2020 there are 722 MSME Units which is generated employment for 9124 people, the Cottage Industrieshave provided engagement to 1628 person and also other industries provided engagement to many person. The mining operation for Graphaite, Bauxite, Quartz, Manganes Ore, etc are available in this district. So far Graphite and Bauxite mining operation in 23 areas started which given engagement to 3503 people.

[Source: Details are at Table 1.24 of Volume II of the DDMP]

Education

The Literacy Rate of the district as per 2011 Census is 49.76, the male literacy is 61.04 and the female literacy is 39.19. During 2017-18, 6-15 years total children enrolment is 168924, children dropped out was 4647. There is 2923 villages/habitation acquired primary education facility within their locality against 3145. Total 8784 teachers engaged in 2120 schools and the Teacher Pupil Ratio is 19.23 in this educational district.

[Source: Details are at Table 1.25 & 1.26 of Volume II of the DDMP]

Health

The Infant Mortality Rate (IMR) is 34 and the Maternal Mortality Rate (MMR) is 106. The Immunization status of Children below 5 years is increased to 82% and the Institutional Delivery is increased to 81%. There were 689 deaths and 375846 incidences of major diseases such as Malaria, Diarrhoea, Tuberculosis, Pneumonia, Jaundice, JE and

Dengue were reported in the last 5 years. Health institutions of the district are equipped with 152 Specialised Doctors, 431 Paramedical Staffs, 300 ANMs and 1766 ASHAs in this district.

[Source: Details are at Table 1.33, 1.34 & 2.3 of Volume II of the DDMP]

Housing

As per the Census 2011, there are 226144 and 171 Homeless households in this district.

[Source: Census 2011. Details are at Table 1.11 of Volume II of the DDMP]

Electrification

Works are in progress to electrify fully in every villages/habitations, steps are also being taken to electrify every household of the district.

[Source: Details are at Table 1.28 of Volume II of the DDMP]

Drinking Water and Sanitation

There are many villages having access to safe drinking water and 2 village/hamlets contain fluoride which affecting 297 people. 98838 households covered with 567 piped water supply projects. There are 13396 functional tube wells and 1322 sanitary wells in the district. There are 1362 ODF villages and 169157 households having IHHL, yet to construct the community sanitary complexes and all the schools having its own toilets.

[Source: Details are at Table 1.29 to 1.31 of Volume II of the DDMP]

Migration

In search of employment few households are migrating to Raipur, Hyderabad, Chennai, Visakhapatnam, however migration for education and better employability also noticed in this district.

[Source: Details are at Table 1.27 of Volume II of the DDMP]

Food Security

Total 247264 households are included under NFSA covering 833095 beneficiaries and supplied with 50437.71 qtls. of Rice and 429.64 qtls. of Wheat in the previous year through 240 PDS outlets/points in the district.

[Source: Details are at Table 1.37 of Volume II of the DDMP]

Social Security

There are 83827 Person covered under Old Age Pension Scheme, 45717 Person Covered under Widow Pension Scheme and 11064 Persons covered under Disability Pension Scheme to provide social security net.

[Source: Details are at Table 1.38 of Volume II of the DDMP]

2.8 Critical Infrastructure

Anganwadi Centres

There are 1947 Anganwadi Centres (AWCs) to provide ICDS and Anganwadi services. 1289 Anganwadi Centres having its own Pucca Buildings. Currently 102536 Nos. of children enrolled, 2398 severely malnourished children were referred to different health institutions and 21218 pregnant/lactating mothers were served through these AWCs.

[Source: Details are at Table 1.32 of Volume II of the DDMP]

Schools and other Educational Institutions

There are 1282 Primary Schools, 608 Middle Schools, 230 Secondary Schools, 29 Colleges/ Polytechnic/ ITI and Vocational Training Institutes in the district during the year 2017-18.

[Source: Details are at Table 2.1.1 & 2.1.2 of Volume II of the DDMP]

Hospitals and Health Centres

There are 236 Health Sub-Centres, 36 PHCs, 11 CHCs, 17 Ayurvedic/Homeopathic Hospitals, 1 Sub-Divisional Hospital, 6 Govt./Private Hospitals at the District Hqrs., 11 MHUs, 13 Ambulances and 3 Blood Banks are available in the district.

[Source: Details are at Table 2.2 of Volume II of the DDMP]

Veterinary Hospitals

To provide veterinary health care services to the animal resources there are 16 Veterinary Hospitals, 106 Livestock Aid Centres, 109 Artificial Insemination Centres and Vet MHUs in the district.

[Source: Details are at Table 2.4 of Volume II of the DDMP]

Police and Fire Stations

There are 17 Nos. of Police Stations manned with adequate no. of Police Personnel and 11 Nos. of Fire Stations equipped with 116 Fire Service human resources covering all the block of this district.

[Source: Details are at Table 2.7 of Volume II of the DDMP]

Cooperative Societies

There are 14 Primary Agricultural Cooperative Societies covering 124660 no. of farmers in the district for the seed and fertiliser support.

[Source: Details are at Table 1.16 of Volume II of the DDMP]

Banks and Post Offices

The banking facilities are provided through 67 Commercial Banks, 26 Regional Rural Banks, 10 Cooperative Banks and 61 Kiosk Banks. There are so many Automated Teller

Machines (ATMs) to provide cash and e-banking facilities across service areas of this district. There are 94 Post Offices to provide postal services across the district.

[Source: Details are at Table 2.6 of Volume-II of the DDMP]

Road and Railway Network

The district has covered with National Highway, State Highway, District Road, Rural Roads, GP/PS Roads, Forest Roads and 182 GPs connected with the block headquarters with all-weather roads and maximum villages connected with GP headquarters with all-weather roads. At present there is 205 kms of Railway network with Single line 100 kms, Double line 105 kms and 18 Railway Stations in this district.

[Source: Details are at Table 1.40 to 1.42 of Volume-II of the DDMP]

Cyclone and Flood Shelters

In the first phase 3 Nos. of Multipurpose Flood Shelter (MFS) infrastructures were constructed under the Chief Minister's Relief Fund (CMRF) in 3 different flood prone locations of the district to meet the infrastructure gap as well as to provide temporary shelters to the affected people. This MFS are managed by the local communities through the Flood Shelter Management and Maintenance Committee (FSMMC).

[Source: Details are at Table 4.11 in this Volume]

Rain Gauge and Automatic Weather Stations

To record the rainfall everyday there are 11 Rain Gauge units are functional covering all 11 block headquarters. Rain Gauge unit is also available at Vansadhara River near Gunupur to record rainfall in the rainy season. An Automatic Rain Gauge and a Manual Surface Observatory unit are functional at CDAO Campus and an Automatic Rain Gauge unit also functional at Kashipur Block headquarters by the Indian Met Department (IMD). A Barometer unit is also established at the Collectorate Campus.

The Rain Gauge Units are located at the Tahasil Office Campus of Rayagada, Gunupur & Bissam Cuttack and at the Block Office Campus of Kolnara, Kalyansingpur, Kashipur, Padmapur, Gudari, Ramanaguda, Muniguda and Chandrapur to measure & record the rainfall data everyday at 8.30 AM and to update the same in Odisha Rainfall Monitoring web portal.

[Source: Emergency Section]



Hazard, Vulnerability & Risk Assessment

3.1 Major Disasters/ Incidents During 2008-2017

Many parts of Rayagada district is likely vulnerable to multiple hazards, such as flood, cyclonic affect, drought, lightening, fire and road accidents as well as the industrial chemical and rail network hazards are also the key areas of concern. Analysing to the past disasters, this district experienced a considerable loss in the natural as well as manmade disasters and it also sustained a lot of damages to life and properties. The district mainly suffers from natural disasters i.e. flash flood, drought, lightning, whirlwind, cyclonic affect, snake bite and manmade disasters such as drowning, road and fire accidents. Access to the Vulnerability Atlas of Rayagada District, it reveals that, roughly 30% area of the district such as Gunupur, Padmapur, Gudari & Ramanguda are coming under Wind & Cyclone Moderate Damage Risk Zone 'A' (44 m/s) and rest 70% area such as Rayagada, Kolnara, Kalyansingpur, Kashipur, Bissam Cuttack, Muniguda and Chandrapur are under Wind & Cyclone Moderate Damage Risk Zone 'B' (39 m/s). Entire Rayagada district is assessed as the Earthquake Low Damage Risk Zone II with No Flood Zone category. However, a quick access to the last ten years disaster occurrence history, this district's majority of life and properties were affected due to drought flood, cyclone, heavy rain, lightning, drowning whirlwind, epidemics and fire accidents.

Table : 3.1
A Brief Profile of Major Disasters/ Incidents Occurred in
the District During Last 10 Years (2009 to 2018)

Sl. No.	Disaster/ Incident	No. of incidents during 2008-2017	No. of Deaths	Affected Population	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							School/ AWC Buildings	Hospitals	Road in Km.	Other Critical Infrastructure	
Disasters as approved under SDRF/NDRF Guidelines											
1.	Flood	4	12	214462	215	1927	340	31	226.01	215	934.51

2.	Drought	3	0	511835	0	0	0	0	0	0	60752.3
3.	Fire	440	3	6785	41	1255	0	0	0	183	0
4.	Hail Storm	0	0	0	0	0	0	0	0	0	0
5.	Cyclone	3	0	892935	28	8353	761	0	236.75	1104	22326.5
6.	Earth Quake	0	0	0	0	0	0	0	0	0	0
7.	Tsunami	0	0	0	0	0	0	0	0	0	0
8.	Landslide	0	0	0	0	0	0	0	0	0	0
9.	Avalanche	0	0	0	0	0	0	0	0	0	0
10.	Cloud Burst	0	0	0	0	0	0	0	0	0	0
11.	Pest Attack	1	0	3600	0	0	0	0	0	0	822.23
12.	Cold Wave/ Frost	0	0	0	0	0	0	0	0	0	0
State Specific Disasters as per Notification No.1936, Dt. 01.06.2015											
13.	Lightning	94	80	92	178	0	0	0	0	0	0
14.	Heat wave	1	1	1	0	0	0	0	0	0	0
15.	Whirlwind	29	0	4075	0	815	0	0	0	0	0
16.	Tornado	0	0	0	0	0	0	0	0	0	0
17.	Heavy Rain	8	0	880	0	120	0	0	0	0	1506.11
18.	Boat Accidents (Other than during Flood)	0	0	0	0	0	0	0	0	0	0
19.	Drowning (Other than during Flood)	13	13	13	0	0	0	0	0	0	0
20.	Snake Bite (Other than during Flood)	5	5	5	0	0	0	0	0	0	0

Other Disasters											
21.	Animal Menace (2010-11)	4	4	4	0	0	0	0	0	0	0
22.	Building Collapse	1	2	6	0	0	0	0	0	0	0
23.	Stampede	0	0	0	0	0	0	0	0	0	0
24.	Epidemics	54	450	1489389	0	0	0	0	0	0	0
25.	Industrial/ Chemical Accidents	0	0	0	0	0	0	0	0	0	0
26.	Road Accidents	0	0	0	0	0	0	0	0	0	0
27.	Railway Accidents	0	0	0	0	0	0	0	0	0	0
28.	Hooch Incidents	0	0	0	0	0	0	0	0	0	0
29.	Communal Riot	2	0	1194	0	113	2	0	0	10	0
30.	Dam Break/ Spill Way related flood	0	0	0	0	0	0	0	0	0	0
31.	Soil/ Coastal erosion	0	0	0	0	0	0	0	0	0	0
	Total	658	566	3125272	462	12583	1103	31	462.76	1512	86341.65

[Source: Emergency Section. Year wise details of each disaster occurred during the last 10 years is at Table 3.1 of Volume-II of DDMP]

3.2 Major Disasters/ Incidents in the District During 2020

As reported, the casualties and people affected due to drowning, snakebite, lightning, Fire and Road Accidents had experienced this district during 2020.

Table : 3.2
Major Disasters/ Incidents in the District During 2020

Sl. No.	Disaster/ Incident	No. of incidents during 2020	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	
1.	Flood	0	0	0	0	0	0	0	0	0	0
2.	Cyclone	0	0	0	0	0	0	0	0	0	0
3.	Lightning	14	13	14	0	0	0	0	0	0	0
4.	Heavy Rain	0	0	0	0	0	0	0	0	0	0
5.	Drowning (Other than during Flood)	12	12	12	0	0	0	0	0	0	0
6.	Snake Bite (Other than during Flood)	7	7	7	0	0	0	0	0	0	0
7.	Epidemics	1	42	967911	0	0	0	0	0	0	0
	Total	34	74	967944	0	0	0	0	0	0	0

[Source: Emergency Section]

3.3 Vulnerability and Risk Assessment Related to Disasters

3.3.1 Flood

The district is normally affected by river flood and flash flood due to heavy rain and inadequate carrying capacity of rain water quickly in the river and nalas are main cause of floods in the low lying areas of the district. In the last 11 years the district is suffered 5 times in heavy flood and affected around 2.16 lakh human beings, damage nearly 2.2 thousand private houses, casualties of 14 human lives, cause to loss of nearly 1122.39 hectares of crop area as well as affected many fold socio-economic life of the people of this district.

In July, 2017, a flash flood was experienced in Kalyansingpur and Rayagada blocks due to torrential rain triggered with an alarming rise in the water levels in Nagavali and Kalyani rivers. The most affected block was Kalyansingpur where thousands of villagers were cut off by that flood. As heavy downpour in the catchments of Nagavali, district faced a high flooding and nearly 28 thousand people were affected with one human casualty and huge damage has been caused to public properties such as roads, bridges, culverts, check dams electrical installations, education & health infrastructures and government buildings, three road bridges had washed away and the communication between Rayagada and Andhra Pradesh had severely affected, while washed away the rail bridge between Therubali and Singapur Road, the rail communication cut-off between Rayagada and Titligarh. Emergent relief was administered for the flood victims and also Indian Air Force helicopters were in task for air dropping of relief materials and rescue works.

Table : 3.3

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.	Rayagada	8	14	10022	-	2335	25	5	-	-
2.	Kalyansingpur	9	16	11322	-	2728	38	4	-	-
3.	Kolnara	2	4	2899	-	590	8	0	-	-
4.	Kashipur	4	5	1448	-	408	10	0	-	-
5.	Gunupur	6	17	13802	-	3217	37	7	-	-
6.	Padmapur	4	8	7554	-	1891	18	3	-	-

7.	Gudari	2	5	2677	-	635	6	2	-	-
8.	Ramanaguda	4	9	5774	-	1397	18	1	-	-
9.	Bissam Cuttack	1	4	3450	-	729	10	1	-	-
10.	Muniguda	7	17	8938	-	2131	33	4	-	-
11.	Chandrapur	6	8	5860	-	1240	15	4	-	-
12.	Rayagada Municipality	0	0	0	-	0	0	0	-	-
13.	Gunupur Municipality	1	19	28870	-	6700	37	1	-	-
14.	Gudari NAC	1	11	6931	-	1696	25	1	-	-
	Total	55	137	109547	-	25697	280	33	-	-

[Source: Emergency Section/DEO/DSWO, Rayagada.
Detailed list of vulnerable Villages/Wards is at table No. 3.2 of Volume II of the DDMP]

Table : 3.4

Causing Agent wise Flood Vulnerable Areas of the District

Sl. No.	Causing agent-Rivers/ Water bodies/Tidal Wave/ Others	No. of Susceptible Blocks/ ULB	No. of Susceptible GPs	No. of Susceptible Villages/ Wards	Vulnerable Population	Milch and Draught animals	Houses	Vulnerable Infrastructure			
								School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infra.
1.	River Vansadhara	9	31	98	83856	-	19636	199	24	-	-
2.	River Nagavali	3	19	34	24243	-	5653	71	9	-	-
3.	Flash Flood	-	-	-	-	-	-	-	-	-	-
4.	Nala (Others)	1	5	5	1448	-	408	10	0	-	-
	Total	13	55	137	109547	-	25697	280	33	-	-

[Source: Emergency Section/ CDVO/ DEO/ DSWO]

Table : 3.5
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.	Rayagada	4615	12486	696	323
2.	Kalyansingpur	4953	9225	128	175
3.	Kolnara	4350	10273	368	110
4.	Kashipur	4859	24124	0	0
5.	Gunupur	5200	11254	460	735
6.	Padmapur	7510	6080	215	135
7.	Gudari	4690	8558	289	540
8.	Ramanaguda	4250	11810	210	560
9.	Bissam Cuttack	6650	10745	144	182
10.	Muniguda	5600	9770	240	78
11.	Chandrapur	2800	3662	118	12
	Total	55477	117987	2868	2850

[Source: CDAO, Rayagada]

Table : 3.6
Electrical Infrastructure in the Flood Prone Area

Sl. No.	Name of the Block/ ULB	No. of Grid Stations	No. of 33/11 KV Substations	No. of Distributing Transformers			Conductor/ Electrical lines-11 KV or less (length in Kms.)	No. of Poles	No. of High Tension Towers	High Tension lines above 11 KV (length in Kms.)
				11 KV or Less	11 KV < and <60KV	60 KV and above				
1.	Rayagada	1	3	416	-	-	650.94	9685	-	25.6
2.	Kalyansingpur	-	2	433	-	-	643.93	8607	-	37.0
3.	Kolnara	1	2	404	-	-	482.87	7076	-	9.2
4.	Kashipur	-	3	670	-	-	1325.86	25092	-	78.7
5.	Gunupur	-	-	-	-	-	-	-	-	-
6.	Padmapur	-	-	-	-	-	-	-	-	-
7.	Gudari	-	-	-	-	-	-	-	-	-
8.	Ramanaguda	-	-	-	-	-	-	-	-	-
9.	Bissam Cuttack	-	3	674	-	-	1378.8	23803	-	44.5
10.	Muniguda	-	3	904	-	-	744.64	11995	-	49.5
11.	Chandrapur	-	-	-	-	-	-	-	-	-
12.	Rayagada Municipality	-	-	-	-	-	-	-	-	-
13.	Gunupur Municipality	-	-	-	-	-	-	-	-	-
14.	Gudari NAC	-	-	-	-	-	-	-	-	-
	Total	2	16	3501	-	-	5227.04	86258	-	244.5

[Source: DDMP-2019, Vol-II]

Table : 3.7
Drinking Water and Flood Vulnerability

Sl. No.	Name of the Block/ ULB	Total No. of Tube Wells	No. of Tube Wells with raised platforms	No. Sanitary Wells	PWS Schemes				Other Drinking Water Sources if any
					Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	
1.	Rayagada	1298	-	85	564	-	-	-	-
2.	Kalyansingpur	938	-	81	424	-	-	-	-
3.	Kolnara	976	-	46	472	-	-	-	-
4.	Kashipur	1292	-	446	1175	-	-	-	-
5.	Gunupur	1162	-	93	298	-	-	-	-
6.	Padmapur	929	-	26	0	-	-	-	-
7.	Gudari	693	-	56	87	-	-	-	-
8.	Ramanaguda	940	-	46	302	-	-	-	-
9.	Bissam Cuttack	1377	-	119	372	-	-	-	-
10.	Muniguda	1254	-	151	491	-	-	-	-
11.	Chandrapur	462	-	172	78	-	-	-	-
12.	Rayagada Municipality	-	-	-	-	-	-	-	-
13.	Gunupur Municipality	-	-	-	-	-	-	-	-
14.	Gudari NAC	-	-	-	-	-	-	-	-
	Total	11321	-	1321	4263	-	-	-	-

[Source: DDMP-2019, Vol-I]

3.3.2 Drought

Rayagada district is also vulnerable to drought due to deficient rainfall, low level of groundwater and less water content in the soil. The frequency, intensity and extent of droughts are gradually on the rise. This is leading to crop failure, decline in surface and groundwater table, increasing in unemployment and indebtedness. During 2015 almost all the parts of the district, especially highlands faced serious problems of drought. In Kharif-2015, drought made loss to 60752.30 hectares of agricultural crop with affecting 511835 people of the district.

Table : 3.8
Status of Paddy & Non-Paddy Cultivated Area

Sl. No.	Name of the Block	Average Annual Rain Fall (mm)	Ground Water Level (mbgl) April, 2016	Cultivated Area (In Hectares)			
				Paddy		Non-Paddy	
				Rainfed Area	Irrigated Area	Rain fed Area	Irrigated Area
1.	Rayagada	1285.9	7.10 (Shirikona)	1528	3033	8728	3758
2.	Kalyansingpur	1285.9	-	2482	2471	6677	2548
3.	Kolnara	1285.9	6.60 (Mukundpur)	3018	1332	7440	2833
4.	Kashipur	1285.9	12.60	2811	2048	22307	2163
5.	Gunupur	1285.9	5.20	5271	5271	7975	3510
6.	Padmapur	1285.9	2.15	1636	5874	5077	1003
7.	Gudari	1285.9	-	2711	1979	6392	2196
8.	Ramanaguda	1285.9	6.30	412	3838	8390	3420
9.	Bissam Cuttack	1285.9	-	3422	3228	8154	2591
10.	Muniguda	1285.9	8.50 (Ambadola)	2538	3062	6418	3352
11.	Chandrapur	1285.9	-	2399	401	3264	398
	Total	1285.9	2.15 (Min) 12.6 (Max)	28228	32537	90822	27772

[Source: CDAO, Rayagada/ Odisha Rainfall Monitoring System/ Ground Water Year Book 2016-17]

Table : 3.9
Drought Vulnerability

Sl. No.	Name of the Block	Year- 2020				Year- 2015			
		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)	
				Paddy	Non-Paddy			Paddy	Non-Paddy
1.	Rayagada	0	0	0	0	28	290	-	-
2.	Kalyansingpur	0	0	0	0	13	253	-	-
3.	Kolnara	0	0	0	0	15	187	-	-
4.	Kashipur	0	0	0	0	20	407	-	-
5.	Gunupur	0	0	0	0	18	138	-	-
6.	Padmapur	0	0	0	0	11	95	-	-
7.	Gudari	0	0	0	0	9	161	-	-
8.	Ramanaguda	0	0	0	0	12	118	-	-
9.	Bissam Cuttack	0	0	0	0	20	285	-	-
10.	Muniguda	0	0	0	0	16	412	-	-
11.	Chandrapur	0	0	0	0	7	216	-	-
	Total	0	0	0	0	169	2562	-	-

[Source: Emergency Section, Rayagada.

The detailed list of drought prone Villages is at 3.2 of Volume II of the DDMP]

3.3.3 Cyclone

Roughly, 30% area of the district such as Gunupur, Padmapur, Gudari & Ramanguda are coming under Wind & Cyclone Moderate Damage Risk Zone 'A' (44 m/s) and rest 70% parts of the district such as Rayagada, Kolnara, Kalyansingpur, Kashipur, Bisssam Cuttack, Muniguda and Chandrapur are under Wind & Cyclone Moderate Damage Risk Zone 'B' (39 m/s). Cyclone impacts the district due to formation of cyclonic low

pressure in the Bay of Bengal and causes heavy rain and thereby resulting in severe damages to the agriculture and infrastructures, in turn which affects a huge human population in the district. In the past this district mainly affected due to severe cyclonic storm in 2012, 2013, 2014 and 2018. For those cyclonic induced heavy rain, the standing and harvested crops suffered a lot and sustained a heavy crop loss to many small and marginal farmers.

In October, 2018, Very Severe Cyclonic Storm ‘TITLI’ impacted the district heavily and affected various sectors due to heavy cyclonic wind and torrential rainfall. Approximately 161377 people in 860 villages under 124 Gram Panchayats of 10 Blocks and 22 wards of 3 ULBs were affected in the district. 4088 private houses damaged and sustained a crop loss of 12962.64 hectares due to this Severe Cyclonic Storm ‘TITLI’. Further, another Cyclone ‘PHETHAI’ during December, 2018 also affected some parts of the district and caused losses some extent to livestock and agricultural crops.

Table : 3.10

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.	Rayagada	0	0	0	0	0	0	0	0	0
2.	Kalyansingpur	0	0	0	0	0	0	0	0	0
3.	Kolnara	0	0	0	0	0	0	0	0	0
4.	Kashipur	0	0	0	0	0	0	0	0	0
5.	Gunupur	0	0	0	0	0	0	0	0	0
6.	Padmapur	0	0	0	0	0	0	0	0	0
7.	Gudari	0	0	0	0	0	0	0	0	0
8.	Ramanaguda	0	0	0	0	0	0	0	0	0
9.	Bissam Cuttack	0	0	0	0	0	0	0	0	0
10.	Muniguda	0	0	0	0	0	0	0	0	0
11.	Chandrapur	0	0	0	0	0	0	0	0	0
12.	Rayagada Municipality	0	0	0	0	0	0	0	0	0
13.	Gunupur Municipality	0	0	0	0	0	0	0	0	0
14.	Gudari NAC	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0

Table : 3.11
Electrical Infrastructures and General Cyclone Affect

Sl. No.	Name of the Block/ ULB	No. of Grid Stations	No. of 33/11 KV Substations	No. of Distributing Transformers			Conductor/ Electrical lines-11 KV or less (length in Kms.)	No. of Poles	No. of High Tension Towers	High Tension lines above 11 KV (length in Kms.)
				11 KV or Less	11 KV < and <60KV	60 KV and above				
1.	Rayagada	1	3	416	-	-	650.94	9685	-	25.6
2.	Kalyansingpur	-	2	433	-	-	643.93	8607	-	37.0
3.	Kolnara	1	2	404	-	-	482.87	7076	-	9.2
4.	Kashipur	-	3	670	-	-	1325.86	25092	-	78.7
5.	Gunupur	-	-	-	-	-	-	-	-	-
6.	Padmapur	-	-	-	-	-	-	-	-	-
7.	Gudari	-	-	-	-	-	-	-	-	-
8.	Ramanaguda	-	-	-	-	-	-	-	-	-
9.	Bissam Cuttack	-	3	674	-	-	1378.8	23803	-	44.5
10.	Muniguda	-	3	904	-	-	744.64	11995	-	49.5
11.	Chandrapur	-	-	-	-	-	-	-	-	-
12.	Rayagada Municipality	-	-	-	-	-	-	-	-	-
13.	Gunupur Municipality	-	-	-	-	-	-	-	-	-
14.	Gudari NAC	-	-	-	-	-	-	-	-	-
	Total	2	16	3501	-	-	5227.04	86258	-	244.5

Table : 3.12
Drinking Water Facility in the General Cyclone Affect Area

Sl. No.	Name of the Block/ ULB	Total No. of Tube Wells	No. of Wells	PWS Schemes				Other Drinking Water Sources If any
				Total No.	Length in Mtrs.	No. of Over Head tanks	No. of Stand Points	
1.	Rayagada	1298	85	564	-	-	-	-
2.	Kalyansingpur	938	81	424	-	-	-	-
3.	Kolnara	976	46	472	-	-	-	-
4.	Kashipur	1292	446	1175	-	-	-	-
5.	Gunupur	1162	93	298	-	-	-	-
6.	Padmapur	929	26	0	-	-	-	-
7.	Gudari	693	56	87	-	-	-	-
8.	Ramanaguda	940	46	302	-	-	-	-
9.	Bissam Cuttack	1377	119	372	-	-	-	-
10.	Muniguda	1254	151	491	-	-	-	-
11.	Chandrapur	462	172	78	-	-	-	-
12.	Rayagada Municipality	-	-	-	-	-	-	-
13.	Gunupur Municipality	-	-	-	-	-	-	-
14.	Gudari NAC	-	-	-	-	-	-	-
	Total	11321	1321	4263	-	-	-	-

3.3.4 Events, Festivals and Functions Organized in the District where Mass Gathering Occurs

Table : 3.13

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 be mentioned)
1.	Republic Day	GCD Ground, Rayagada Block	1	January	5000	-
2.	Republic Day	Gunupur Block	1	January	5000	-
3.	Maha Shiv Ratri	PHED Colony, Rayagada Block	1	February	6000	-
4.	Maha Shiv Ratri	At: Devagiri, Block: K.Singpur	1	February	15000	-
5.	Maha Shiv Ratri	At: Paikapada, Block: Kolnara	1	February	10000	-
6.	Maha Shiv Ratri	At: Minajhola, Block: Gudari	1	February	8000	-
7.	Maha Shiv Ratri	At: Chatikona, Block: Bissam Cuttack	1	February	5000	-
8.	Chaitra Parva	Majhi Ghariani Temple	5	April	5000	-
9.	Ratha Yatra	Main Road, Rayagada Block	1	July	10000	-
10.	Ratha Yatra	Jagannath Temple Road, Block: Bissam Cuttack	1	July	10000	-
11.	Ratha Yatra	Jagannath Temple Road, Block: Gunupur	1	July	10000	-
12.	Bahuda Yatra	Main Road, Rayagada Block	1	July	10000	-
13.	Bahuda Yatra	Jagannath Temple Road, Block: Bissam Cuttack	1	July	10000	-
14.	Bahuda Yatra	Jagannath Temple Road, Block: Gunupur	1	July	10000	-
15.	Independence Day	GCD Ground, Rayagada Block	1	August	5000	-
16.	Independence Day	Gunupur Block	1	January	5000	-
17.	Dasahara	JK Pur Pooja Groud Rayagada Block	10	October	15000	-
18.	Dasahara Ravan Dahan	JK Pur Air Field Groud Rayagada Block	3	October	25000	-

19.	Kalipuja	Block Colony Rayagada Block	10	November	10000	-
20.	Chaiti	GCD Ground, Rayagada Block	3	November	10000	-

[Source: General Assessment an Indicative List]

3.3.5 Boat Operation Points

Table : 3.14

Sl. No.	Name of the Block	Name of the ghat/ boat operation point	Name of the water body	No. of Panchayats/ villages connected	Daily to and fro movement of people in Nos. (Approx.)	Type of boats operating in Nos.	
						Mechanised	Non-Mechanised
1.	Gudari	Naira Ghat	River Vansadhara	1	-	1	0
2.	Ramanaguda	Gumuda Ghat	River Vansadhara	2	-	1	1
			Total	3	-	2	1

[Source: DDMP-2019, Vol-I]

3.3.6 Land Slide Vulnerability

Table : 3.15

Sl. No.	Land Slide Zone/ Area/ Location	Area in Sq. Km	No. of susceptible Villages/ Wards	Vulnerable Population in Nos.	Houses	Vulnerable Infrastructure			
						School/ AWC Buildings	Hospitals	Roads (in Km)	Other Critical Infrastructure
1.	0	0	0	0	0	0	0	0	0
2.	0	0	0	0	0	0	0	0	0
3.	0	0	0	0	0	0	0	0	0
4.	0	0	0	0	0	0	0	0	0
5.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0

3.3.7 Lightning

90% of the casualties due to lightning and thunderbolt were reported during the period April to October in this district. Losses to human lives, livestock and critical equipments are being reported extensively. Due to much more outside exposure of the working class the lightning and thunderbolt affected the lives in general due to this natural disaster. In Rayagada district, highest lightning events with high casualties were reported in Kashipur, Bissam Cuttack and Rayagada Blocks during last 11 years and focuses on vulnerability of those areas.

Table : 3.16

Sl. No.	Name of the Block/ ULB	Identifiable incidents of lightning hit during 2008 to 2018		No. of Lightning Events	No. Fatality/ Deaths	Injured Persons
		No. GPs	No. of Villages/ Wards			
1.	Rayagada	8	11	12	10	0
2.	Kalyansingpur	7	9	8	6	6
3.	Kolnara	8	8	10	6	0
4.	Kashipur	14	19	25	19	6
5.	Gunupur	5	7	9	8	0
6.	Padmapur	2	2	4	4	0
7.	Gudari	3	3	6	6	2
8.	Ramanaguda	3	3	3	3	0
9.	Bissam Cuttack	8	10	16	9	0
10.	Muniguda	3	3	3	4	0
11.	Chandrapur	2	2	6	9	0
12.	Rayagada Municipality	0	0	0	0	0
13.	Gunupur Municipality	0	0	0	0	0
14.	Gudari NAC	0	0	0	0	0
	Total	63	77	102	84	14

[Source: Emergency Section. List of Village is at 3.2 of Volume -II of the DDMP]

3.3.8 Major Industrial Establishments/Chemical & Other Hazardous Material Storage Points

Table : 3.17

Sl. No.	Name & location of the Industry/ Storage point	Department/ Ownership	Name of hazardous materials stored	Quantity	Total no. of workers in the establishment	No. of adjacent Villages/ Habitations within 2 km radius	Susceptible Population	House	Vulnerable Infrastructure		
									School Buildings & AWC	Hospitals	Other Critical Infra.
1.	M/s. J.K. Paper Mills, At/P.O.: Jaykaypur, Dist. Rayagada, Odisha	Private	Chlorine (Cl ₂)	120 Tonners	3022	8	33957	8471	37	9	-
			Hydrogen Peroxide (H ₂ O ₂)	126 MT							
			Sulphur Dioxide (SO ₂)	18 Tonners							
			Caustic Soda Lye (NaOH)	804 MT							
			Hydrochloric Acid (HCl)	153 MT							
			Chlorine Dioxide (ClO ₂) OwnMfg	6.8 MT							
			Furnace Oil (FO)	120 KL							
			High Speed Diesel (HSD)	18 KL							
			Sulphuric Acid(H ₂ SO ₄)	103 MT							
			Pet Coke	400 MT							
			Transformer Oil	13105 Ltr							
			Methanol	10 MT							

2.	M/s. Indian Metals & Ferro Alloys Ltd., At/P.O.: Therubali, Dist. Rayagada	Private	LDO (A Ground)	21 KL	1417	4	8178	1905	17	5	-
			LDO (U Ground)	20 KL							
			LDO (U Ground)	20 KL							
			HSD (U Ground)	18 KL							
			Petrol (MS U Ground)	0.27 KL							
			Liq. Oxygen	10.5 KL							
			Transformer oil	1881 Ltrs.							
3.	M/s. Utkal Alumina International Limited, At: Doraguda, P.O.: Tikiri, Dist. Rayagada	Private	HFO	10800 KL	5000	4	5964	1447	15	9	-
			LDO	81 KL							
			Caustic Lye	6750 T (dry basis)							
			Sulphuric Acid	109 T							
			Hydrochloric Acid	30 T							
			Total	9439	16	48099	11823	69	23	-	

[Source: F&B/ CDM&PHO, List of Institutions DEO/ DSWO]

3.3.9 Fire

Around 440 incidents of fire accident occurred during previous 10 years and damaged at least 1255 houses and household properties and severely affected the live and livelihoods of the people due to poor socio-economic conditions.

3.2.10 Heat Wave

Almost all parts of the district experiences Sever Heat Wave condition due to high humidity in the month of April to June every year. The Average temperature exceeds 44 degree Celsius during the peak hours of May each year affecting life and productivity of the people and brings substance decrease in income of the working class.

3.2.11 Whirlwind

During previous 3 years, 29 Whirlwind incidents were reported affecting 4075 people with a damage of 815 houses. An average around 270 houses were damaged in this natural disaster per annum.

3.2.12 Drowning (Other than during Flood)

In the last 3 years, incidents of 31 casualties were reported due to drowning in various water bodies with an average casualties around 10 human lives per annum in this disaster.

3.2.13 Other Incidents

In addition, the district is also affected by Heavy Rain, Pest Attack, Snake Bite, Epidemics, COVID-19 Pandemic, Road Accidents, Communal Riots, etc and affected the life and properties in manifold of people of this district.

3.3 Drinking Water Crisis

Table : 3.18

Sl. No.	Name of the Block/ ULB	Villages/ Wards without proper source of drinking water		Villages/ Wards having crisis of drinking water during summer season		Fluoride Contamination		Others Arsenic/ Saline/ Iron If any
		No. of Villages/ Wards	Population	No. of Villages/ Wards	Population	No. of Villages/ Wards	Population	
1.	Rayagada	-	-	1	286	-	-	126
2.	Kalyansingpur	-	-	-	-	-	-	34
3.	Kolnara	-	-	-	-	-	-	129
4.	Kashipur	-	-	4	787	-	-	225
5.	Gunupur	-	-	1	420	1	50	14
6.	Padmapur	-	-	-	-	1	247	16
7.	Gudari	-	-	-	-	-	-	9
8.	Ramanaguda	-	-	-	-	-	-	13
9.	Bissam Cuttack	-	-	3	260	-	-	46
10.	Muniguda	-	-	-	-	-	-	52
11.	Chandrapur	-	-	-	-	-	-	36
12.	Rayagada Municipality	-	-	5	385	-	-	0
13.	Gunupur Municipality	-	-	3	425	-	-	0
14.	Gudari NAC	-	-	3	145	-	-	0
	Total	-	-	20	2708	2	297	700

[Source: RWS&S/ PHED, Rayagada

3.4 Railway Line Exposed Different Hazards

The Railway network in this district is established since 1931. Recently the Division of the East Coast Railway is headquartered at Rayagada. Over the years Rayagada Railway network is grown as an important and commercial means of transportation.

Rayagada Station from where direct trains are available to Mumbai, Chennai, Kolkata, Hyderabad, Bhubaneswar, Raipur, New Delhi, Bangalore, Ahmedabad, Puri, Visakhapatnam, Vizianagaram and other cities. More than 60 up and down passenger trains are commuting in Rayagada. Everyday lots of Goods Trains are also commuting through this route connecting Visakhapatnam, Villai, Raipur, Damanjodi, Tikiri, etc resulting in heavy railway trafficking in this route and there is every possibilities of Rail related hazards and incidents in the district.

Table : 3.19

Sl. No.	Hazard	Length of Railway line exposed (in Km.)	Location
1.	Flood	0	0
2.	Land Slide	0	0
3.	Others	0	0
	Total	0	0

3.5 Road Accidents

In an assessment road accidents are occurring frequently and leading to increasing note of human fatality and casualties. Accident Prone Areas were identified and necessary steps are integrated in the Black Spot areas to minimise this disaster.

Table : 3.20

Sl. No.	Stretch of Road (From - To)	Length in Kms.	No. of Traffic Congestion Areas	No. of Accident Prone Areas	No. of villages/ habitations adjacent to accident prone Areas
1.	-	-	-	-	-
2.	-	-	-	-	-
	Total	-	-	-	-

3.6 Population Requiring Special Care

Table : 3.21

Sl. No.	Name of the Block/ ULB	No. of HHs headed by Women	No. of HHs headed by PwD	No. of Person's with Disability	No. of Widow	No. of Children		No. of Orphans		No. of Aged Persons (60 and above)	No. of Pregnant and lactating mothers
						0-5 Years	6-14 Years	B	G		
1.	Rayagada	2290	-	1529	6196	7145	7181	72	71	9935	2523
2.	Kalyansingpur	852	-	939	4192	385	594	5	4	3543	1519
3.	Kolnara	3142	-	915	4181	7530	7775	32	38	6161	1393
4.	Kashipur	5828	-	962	6111	45	150	4	5	12705	4002
5.	Gunupur	2994	-	1258	3570	7524	5462	11	12	6023	1552
6.	Padmapur	1070	-	826	2542	6273	1243	2	3	5581	1275
7.	Gudari	8025	-	623	2116	5900	6524	1	3	4121	1140
8.	Ramanaguda	1261	-	536	2793	4987	6672	0	0	5743	1031
9.	Bissam Cuttack	1034	-	1204	4280	10347	11687	30	34	9453	2086
10.	Muniguda	1848	-	1074	3618	11602	5029	17	13	8992	2435
11.	Chandrapur	753	-	417	1291	5557	973	0	0	4731	1200
12.	Rayagada Municipality	482	-	274	3204	102	232	18	16	4201	822
13.	Gunupur Municipality	286	-	420	1478	1464	2830	2	3	1866	126
14.	Gudari NAC	1650	-	87	145	737	515	1	0	772	114
	Total	31515	-	11064	45717	69598	56867	195	202	83827	21218

[Source: DSSO/ DSWO, Rayagada]

3.7 Earthquake Vulnerability

As per Earthquake Hazard Zoning Atlas-2016 published by the National Disaster Management Authority (NDMA), Government of India and Building Materials and Technology Promotion Council (BMTPC), Ministry of Housing, Urban Poverty Alleviation, Government of India.

- Rayagada District is coming under Zone-II : Low Damage Risk Zone (MSK VI or Less).
- All the Blocks of the district is coming under Zone-II : Low Damage Risk Zone (MSK VI or Less).
- As per the Wikipedia, the IS code assigns zone factor of 0.10 (maximum horizontal acceleration that can be experienced by a structure in this zone is 10% of gravitational acceleration) for Zone-II.

(For Reference: The Earthquake Vulnerability Map is in Volume-II of the DDMP)

3.8 Identified Old and depleted Buildings in the District (if any)

Sl. No.	Block/ ULB	No. of Vulnerable Buildings	Population at Risk (inhabitants and the neighbouring)	Remarks
1.	Rayagada Municipality	3	-	-
2.	-	-	-	-
	Total	3	-	-

[Source: EE, R&B-I, Rayagada]

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

Table : 3.22

Sl. No.	Name of the ULB/ Block	No. of High Rise Buildings	No. of High Rise Buildings where Fire & Life Safety Audit has been carried out in last 2 years.	Remarks
1.	Rayagada Municipality	8	-	-

Table : 3.23

Sl. No.	Name of the High Rise Building	Location/ Area	Name, Address, Contact Details of the Owner	Whether Fire & Life Safety Audit Under Taken (Yes/ No.)	If Yes then the Year and the Name of the Agency	Vulnerable Population
1.	Sabitri Complex	-	-	-	-	-
2.	Sri Homes	-	-	-	-	-
3.	Acharyalu Complex	-	-	-	-	-
4.	Laxmi Kalyanni	-	-	-	-	-
5.	Srinivas Denizen	-	-	-	-	-
6.	Ashish Bhaban	-	-	-	-	-
7.	Chinnari Plaza	-	-	-	-	-
8.	Gita Plaza	-	-	-	-	-

[Source: Fire Officer, Rayagada]

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

3.10 Embankments

Table : 3.24

Irrigation Division Wise Embankments in the District

Sl. No.	Division	Name of the Embankment	Type (Capital Embankment/ Other Agricultural/ Test Relief/ Saline)	Length (in Km.)
1.	Paralakhemundi Irrigation Division	Bansadhara Left	Capital Embankment	10.581
2.	Paralakhemundi Irrigation Division	Bansadhara Right	Capital Embankment	5.880
3.	Paralakhemundi Irrigation Division	Nagavali Right	Capital Embankment	1.87

4.	Paralakhemundi Irrigation Division	Nala (Bansadhara Basin)	Other Agricultural	80.658
5.	Paralakhemundi Irrigation Division	Nala (Nagavali Basin)	Other Agricultural	2.380
6.	M.I. Division, Rayagada	Siltiguda	Canal Embankment	25.48
7.	M.I. Division, Rayagada	Bishnuguda	Canal Embankment	11.20
8.	M.I. Division, Rayagada	Kasili	Canal Embankment	3.00
9.	M.I. Division, Rayagada	Bagrijhola	Canal Embankment	4.75
10.	M.I. Division, Rayagada	Maikanch	Canal Embankment	4.60
11.	M.I. Division, Rayagada	Revelkona	Canal Embankment	1.37
12.	M.I. Division, Rayagada	Pujariguda	Canal Embankment	1.38
13.	M.I. Division, Rayagada	Bainabasa	Canal Embankment	7.38
14.	M.I. Division, Rayagada	Bhaluguda	Canal Embankment	5.63
15.	M.I. Division, Rayagada	Kundanpadar	Canal Embankment	5.885
16.	M.I. Division, Rayagada	Puvalguda	Canal Embankment	0.96
17.	M.I. Division, Rayagada	Kankubadi	Canal Embankment	13.97
18.	M.I. Division, Rayagada	Sanamuligaon	Canal Embankment	16.65
19.	M.I. Division, Rayagada	Chakunda	Canal Embankment	0.85
20.	M.I. Division, Rayagada	G.Laxmipur	Canal Embankment	0.45
21.	M.I. Division, Rayagada	Gumuda	Canal Embankment	0.40
22.	M.I. Division, Rayagada	Parikiti	Canal Embankment	0.21

23.	M.I. Division, Rayagada	Patraguda	Canal Embankment	0.18
24.	M.I. Division, Rayagada	Ramanaguda	Canal Embankment	0.33
25.	M.I. Division, Rayagada	Janakipeta	Canal Embankment	0.08
26.	M.I. Division, Rayagada	Dambosora	Canal Embankment	1.30
27.	M.I. Division, Rayagada	Gadiakhola	Canal Embankment	0.20
28.	M.I. Division, Rayagada	Narasinghmunda	Canal Embankment	0.32
29.	M.I. Division, Rayagada	Raktaputi	Canal Embankment	0.12
30.	M.I. Division, Rayagada	Dangakota	Canal Embankment	0.165
31.	M.I. Division, Rayagada	Derigamguda	Canal Embankment	0.10
32.	M.I. Division, Rayagada	Nairaguda	Canal Embankment	0.786
33.	M.I. Division, Rayagada	Sardhapur	Canal Embankment	1.05

[Source: Paralakhemundi Irrigation Division/ M.I. Division, Rayagada]

Table : 3.25

Division wise list of Vulnerable 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.	Paralakhemundi Irrigation Division	0	0	0	0	0
2.	M.I.Division, Rayagada	0	0	0	0	0

3.11 Dam- Burst Scenario (For large Dams)

Table : 3.26

i.

Sl. No.	Name of the Dam	Location & Water body	Type (Major/ Medium/ Minor)	Storage Capacity	Full Reservoir Level (FRL)	Maximum Water Level (MWL)	Dam Break Model / Risk Map for Dam break developed? (Yes/No)	Pre and Post Monsoon Inspection of Structural Measures done? (Yes/ No)	No. of Villages to be affected/ needs to be evacuated in case of a possible scenario (District & Block Wise)	Remarks
1.	Badanala	Padmapur (Kenduguda)	Medium	6714 Ha.M	176 Mtr	176 Mtr	No	Yes	-	Safe
2.	Siltiguda	Siltiguda	Minor	1.48 M.cum	264 Mtr	264 Mtr	-	Yes	10	Safe
3.	Bishnuguda	Chintaliguda	Minor	1.23 M.cum	210 Mtr	210 Mtr	-	Yes	6	Safe
4.	Sanamuligaon	Dhepaguda	Minor	2.67 M.cum	167.5 Mtr	167.5 Mtr	-	Yes	12	Safe
5.	Bhaluguda	Jodingi	Minor	1.44 M.cum	252 Mtr	252 Mtr	-	Yes	3	Safe
6.	Bagrijhola	Bagrijhola	Minor	0.432 M.cum	826 Mtr	826 Mtr	-	Yes	3	Safe

Table : 3.27**Contingency Planning for Dam Bursts Scenario**

1. For Dam –I

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

ii. Formation and Subsequent Bursting of Landslide Dams**Table : 3.28**

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

3.12 Cultural Heritage Sites and Precincts**Table : 3.29**

Sl. No.	Cultural Heritage Site/ Precinct	Address/Location	Category (Centrally Protected Monument/State Protected/ UNESCO World Heritage Site/ Unprotected Monument)	Name & Contact details of the Controlling/ Supervising Authority at the District level	Hazards & Vulnerability of the Place	Remarks (Avg. Foot Fall & Days/ Period during which the place receives highest Foot Fall)
1.	Maa Majhgharini Temple	At/P.O.: Rayagada, Dist. Rayagada	State Protected Monument	Endowment, Rayagada	-	(March-April) & (Tuesday & Friday)
2.	Sri Jagannath Temple	At/P.O.: Rayagada, Dist. Rayagada	State Protected Monument	Endowment, Rayagada	-	July
3.	Hill Top-Prem Pahada	At: Checkaguda P.O./Dist. Rayagada	-	Endowment, Rayagada	-	-

4.	Jhula Bidge	At: Checkaguda P.O./Dist. Rayagada	-	-	-	-
5.	Laxminarayana Temple	At: Therubali, Block: Kolnara, Dist. Rayagada	State Protected Monument	Endowment, Kolnara	-	-
6.	Shiv Temple	At: Paikapada, P.O.:Therubali, Dist. Rayagada	State Protected Monument	Endowment, Kolnara	-	February
7.	Shiv Temple	At: Chatikona, P.O.:Bissam Cuttack Dist. Rayagada	State Protected Monument	Endowment, Bissam Cuttack	-	February
8.	Shiv Temple	At: Minajhola, P.O./Block:Gudari Dist. Rayagada	State Protected Monument	Endowment, Gudari	-	February
9.	Shiv Temple	At: Devagiri, Block:K.Singpur Dist. Rayagada	State Protected Monument	Endowment, Kalyansingpur	-	February
10.	Sri Jagannath Temple	At/P.O.: Bissam Cuttack, Dist. Rayagada	State Protected Monument	Endowment, Bissam Cuttack	-	July
11.	Balunkeswar Temple	At: Kumudabali, Block:Muniguda Dist. Rayagada	State Protected Monument	Endowment, Miniguda	-	February
12.	Manikeswari Shiv Temple	At/Block:Padmapur Dist. Rayagada	State Protected Monument	Endowment, Padmapur	-	February

3.13 Museums

Table : 3.30

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

3.14 Human Animal Conflict

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

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

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

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



Management of Forest Fires

4.1 Forest Fire Incidences in the District

A large number of incidences of forest fire have been reported in the State of Odisha. The recent incident of forest fire in ‘Shimilipal Bio Spehere Reserve Area’ and other forest areas of the State caused widespread destruction of precious flora and fauna. The communities residing in the forest fringe villages are also badly affected by forest fire as they largely dependent on forest for their livelihoods. Many endangered species residing in the core forest areas are also likely to be affected.

Map : 4.1
Rayagada Division Forest Forest Coverage

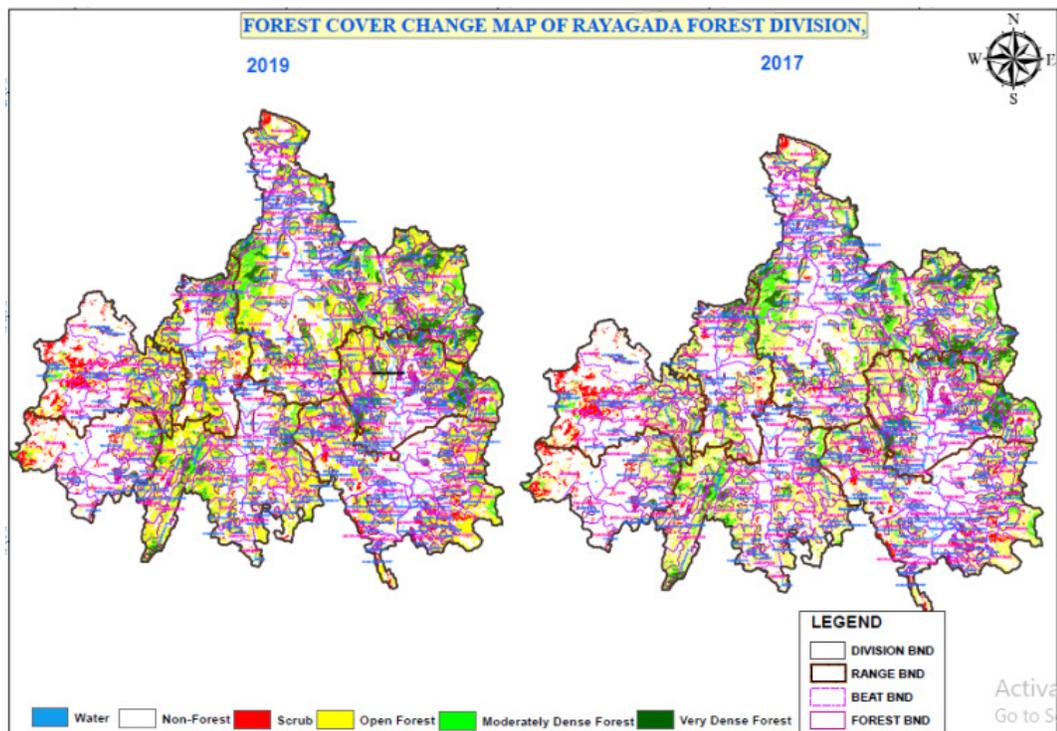


Table : 4.1
Forest Fire Incidents

Sl. No.	Name of the Division	Range	No. of Fire Incidents Reported during last 5 years (2012-17)	Area Affected in Ha.	Loss of life/ property if any
1.	Rayagada	7	903	269.59	-
	Total	7	903	269.59	-

[Source: DDMP-2019, Vol.-I/ Web]

Table : 4.2
Forest Fire Vulnerability

Sl. No.	Name of the Division	Range	Area (in Sq Km)	Total Notified Forest Area (in Sq. Km)	High Risk Zone (Area in Sq Km)	No. of Villages/ habitations inside/ adjacent to the High Risk Zone	Medium Risk Zone (Area in Sq. Km)	No. of Villages/ habitations inside/ adjacent to the Medium Risk Zone	Low Risk Zones (Area in Sq. Km)	No. of Villages/ habitations inside/ adjacent to the Low Risk Zone
-	-	-	-	-	-	-	-	-	-	-

4.2 Name of the Division

Rayagada Forest Division

4.3 Name of the Range

7 Ranges namely Rayagada, K.Singpur, Tikiri, Kashipur, Muniguda, Gunupur and Gudari.

4.4 Total Notified Forest Areas (Area in Sq Km) in the District

Distribution of Forest Cover Report for 2020 of Rayagada District Dense Forest 1272.96 Sq.Km., Mangroves 0.00 Sq.Km. & Open Forest 1873.55 Sq.Km.

(Source: ENVIS Centre of Odisha's State of Environment Web)

4.5 Zonation of Forest Area (Red, Green and Orange Zones in Sq.Km.)

Forest Area Red Zone, Green Zone and Orange Zone in Sq.Km.

4.6 No. of Villages inside and Population of Different Zones

Population of Red Zone, Green Zone and Orange Zone.

4.7 Detail Action Plans for Management of Forest Fire in the District

A three tier mechanism is in operation for the control of forest fire. The first information received at State Control Room is transmitted to field units and division control room regularly on a daily basis. Then, the action taken by the dedicated firesquads and other support staff on the extent of damage is collected from divisions regularly for effective monitoring. The three levels mechanism is as detailed below:

Sl No.	Level	Head of the IRT	Roles / Responsibilities
1.	State	Protection & Sustainable Management Wing of Principal CCF, Odisha	<ul style="list-style-type: none"> • Coordinate with State Government and other line Departments. • Ensure Reporting of the affected area and assess damage thereof. • Plan and arrange necessary inputs for response measures. • Manage the fund and maintain financial records • Maintain an inventory of all related guidelines, procedures, action plans, district maps and Contact numbers.
2.	District/ Division	RCCFs & DFOs	<ul style="list-style-type: none"> • To coordinate with Directorate, District Authorities and line departments at District level. • To prepare and activate division plan • To manage the overall response activities in the field • To mobilise resources for response measures • To collect and record information for post incident analysis. • Capacity Building
3.	Block/ Range	DFOs	<ul style="list-style-type: none"> • To supervise collection of information and report to the higher authority. • To prepare and activate plan at Range level • To implement the plan • To ensure availability of resources for response measures • Capacity Building

Present System on Forest Fire Control

On Receiving Warning	Response Time	Loss Analysis
<ul style="list-style-type: none"> • Disseminate the alert to all concerned as per reports received from Forest Survey of India by State Control Room • At District level transmission of information to different Ranges through 	<ul style="list-style-type: none"> • Within an hour of occurrence through satellite data and communicated to mobile telephones. • Within one hour of transmission of message to different field units by different Ranges. 	<ul style="list-style-type: none"> • Assessment of damages on regeneration. • Assessment of damages on wildlife • Assessment of damages on timber and other MFPs. • Investigation on the offences resulting to forest fire.

<p>telephones/ VHF network/ SMS alert by Division Control Room</p> <ul style="list-style-type: none"> Transmission of message to different field units for immediate action to extinguish the fire by Range officer/Fire Fighting Squad 	<ul style="list-style-type: none"> Immediate action by field units to extinguish forest fire. 	
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4.8 Roles & Responsibilities of Different Stakeholders

Division Level

The Divisional Forest Officer/ In-charge of the Forest Division will be responsible as per the SoP at 4.9.4.

Range Level

The Range Officer/ Incharge of the Range will be responsible as per the SoP at 4.9.4.

Section Level

The Section Forester/ Section in charge will be responsible as per the SoP at 4.9.4.

Beat Level

Beat Forest Guard/ In charge of the Beat will be responsible as per the SoP at 4.9.4.

4.9 Standard Operating Procedure (SoP) for Management of Forest Fire

4.9.1 Introduction:

Forest fire, whatever be the source & affected area, causes extensive damage to flora and fauna side by side generate heat and smoke causing pollution to local environment. In Odisha, forest fire occurs starting from the month of February to June. But number of incidence increases during the month of March & April. Though there are working plan prescriptions as well as several executive instructions on the subject, no systematic approach and effective management practices with accountability has been devised for prevention of forest fire so far. Hence a comprehensive Standard Operating Procedure (SOP) to prevent forest fire is required for field level officers to resolve the problem at source.

4.9.2 Objectives

The main objective of SOP is to deal with the problem of forest fire step by step at different level with coordination of government institutions and community participation. Besides, it is a management practice tool which is helpful for field staff to reduce the occurrence and

minimise the impact of fire thereby reducing threat to forest resource and micro eco-system. It will also ensure precise planning and implementation of forest fire control measures.

4.9.3 Strategies

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

This Standard Operating Procedure (SOP) endows with the basic steps which needs to be taken at field level for dealing with fire preventive measures, information collection & maintenance of records, tackling ablaze area, and post fire operations. Applicability of this SOP covers the forest area under management of Forest Department.

4.9.4 Responsibilities

AT DIVISION LEVEL

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

- Organising Coordination meetings with District level fire officers, DFO Kenduleaves, DM, OFDC and other concerned departments.
- Preparation of fire prevention & reclamation Plan and supervise the implementation of the approved plan.
- Action for filling of vacant positions in fire risk forest Beats & Sections before onset of fire season.
- Procurement of fire fighting equipments and tools required for strengthening the base level.
- Notification of prohibited activities and display on conspicuous place for public as per section 3(2) of Orissa Forest (Fire Protection) Rules, 1979.
- 24x7 fire prevention control room at division headquarters in charge of an officer of Deputy Ranger/ Forester rank with staffs and equipments. Ensure Registration of official Mobile no with FSI website (<http://www.fsi.org.in>) for getting fire alert message and set up effective two way communication network. Contact number of control room should be displayed at Beat, Section and Range offices.
- Make Incentive provision for VSS & public informants.
- Monitor & review fire control operation on weekly basis in the Division.
- Ensure timely submission of fire occurrence report.

AT RANGE LEVEL

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

- Monitor and supervise the works like maintenance of fire line, selection of fire fighting squads members well in advance of the fire season.
- Repair to forest roads, maintenance of boundary & compartment lines, select site to set up camps, construction of Machans and decide on fire fighting squad members well in advance of fire season
- Organising monthly meetings of VSS during fire season, organise public awareness programmes, proper display of sign boards / banners on proper places. He must have regular interaction with VSSs.
- Deploy staff and squad members on strategic points with specific duty and chalk out their movement to cover fire sensitive forest areas.
- Organising mock drill training for Forester, Forest Guard , Squad and VSS members with assistance of fire service personnel for effective fire control. Maintain Duty Register and log Book for fire squads and staff.
- Conduct enquiry into each fire affected forest area, assess the loss, verify the action taken by the staff to control fire and submit report
- Recommend names of VSS, informants and squad members for incentives and awards.

AT SECTION LEVEL

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

- Prepare detail map showing fire prone area, route chart to those sites and available water sources
- Execution and supervision of fire control measure works (maintenance and creation of Fire Line, compartment and boundary line) in fire prone areas well in advance.
- Organising VSS meetings on regular basis and encourage members to take appropriate steps for control of fire as a Convenor.
- Safe custody of fire fighting equipments and kits from range office.
- Receiving fire alert messages from VSS, range office & division control room on a day to day basis, ensure entry into a register and pass on to Beat Guard.
- Arrange labour, hire of vehicle and provide logistic support to fire fighting squads.
- Action taken report with details of area fire affected with GPS survey and damage to flora and fauna (photographs) to be submitted within 48 hours.
- Keeping close contact with local Fire Service Station for information and technical guidance.
- Expeditious steps to initiate legal action against culprits with due procedure and

adequate evidence.

- Ensure all equipments required for fire fighting have been supplied to all Forest Guards, VSS members, fire fighting squads and are in working condition.

AT BEAT LEVEL

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

- Well acquainted with area, map, topography, routes and fire risk areas of his jurisdiction.
- Make regular patrolling in forest areas and interaction with locals. He will provide his mobile no. to local ward member/ Sarpanch/ Important local villagers and request them for providing the information about forest fire promptly.
- Receive messages from control room, range office, section forester and VSS on fire occurrence, record in log book / register.
- Submit weekly report ensuring forest area not affected by fire due to his effort.
- Submit the area affected by forest fire on daily basis to Section Forester and Range Officer.
- Make frequent night halts in interior pockets of his jurisdiction.

4.9.5 Preparedness before the onset of the fire season

- (a) Range Officer will ensure clearance of the fire lines in all the vulnerable forests in the range. DFO will ensure the completion of the fire line maintenance and will report to the RCCF/PCCF before onset of fire seasons.
 - Supply of the fire maps clearly showing the fire prone sites to all beat guards, section foresters and range officers will be ensured by the DFO.
 - Range Officer will ensure proper deployment of fire fighting squad and its members in strategic vulnerable locations within and outside forest area in such a way that they reach the fire spot within minimum time gap.
 - Before onset of fire season, Range Officer will convene a meeting of all the VSS in his jurisdiction and analyse and discuss the success and failure of efforts in previous years to extinguish forest fire. He will decide the strategy after due consultation with VSS members, Foresters, Forest Guards and squad members for current year. Range Officer will also apprise the VSS members about incentive scheme for checking forest fire by villagers.
 - Updation of Phone/ mobile nos. and email IDs of all Range officers, section foresters, beat guards, Fire fighting squads and VSS presidents etc. will be done by the control room of the DFO and a copy will be supplied to each Range officer who will supply a copy to each Forester and Forest Guard.
 - Procurement and supply of Fire fighting equipments, safety kits, communication devices, transportation and other logistic supports.
- (b) The Divisional Forest Officer shall procure required quantity of fire fighting

equipments and safety kits for each range. Safety kits will include first aid medicines, mask, hat, water bottle, torch with batteries besides other necessary items.

- (c) DFO will organize necessary training programme on use and maintenance of equipments at the site and also ensure mock drills are conducted. After stock entry, required equipments and safety kits would be supplied to each Range Officer who will further supply to the section Foresters and beat Guards.
- (d) Specific Use of Blowers- It is observed that fire lines maintained to obstruct spread of fire, get covered by fallen dry leaves and it is of no use in fire season. Besides maintaining the fire lines on a regular basis, blower can also be used for regular clearing of fire lines. This is a machine operated device and is a very effective equipment for making fire line by blowing out the fallen leaves on forest floor thereby creating a barrier to the ground fire. Blower is also helpful at the time of fire suppression operation.
- (e) Equipments for communication such as VHF sets, walkie talkie, mobile phones would be procured / repaired and supplied to all concerned well before the onset of the fire season. A set of mobile would also be provided to the leader of each fire fighting squad / VSS president and to the team leaders of the local youths for making quick communication without loss of time.
- (f) It will be the duty of each section forester to ensure that all equipments provided to fire fighting squad, VSS members and Forest Guard are in working condition.

4.9.6 Operation after occurrence of the forest fire

- The DFO & RO after receiving the information on occurrence of forest fire from various sources (Modis satellite data, own staff local informer, TV news Print Medias etc), will record the same in the Log Register through control room of the division and will ensure its immediate transmission to the concerned Range officers, Section Foresters and beat Guards who will also record the same in their Log Registers and start action without loss of time.
- The concerned Section Forester and Beat Guards who are key persons in controlling and suppressing a forest fire, will rush to the spot fully equipped with team of manpower, fire fighting squads / VSS members/ villagers whatever will be necessary.
- Local fire stations will also be informed by Range Officer and ensure that they reach with water tanker in accessible forest areas. Their services will be properly utilized to extinguish fire.
- Range officers have to ensure that prior arrangement for providing mode of transportation to vulnerable fire sites has been made and will review at Range,

Section and Beat level. Necessary emergency fund should also be made as per provision particularly at Forest Guard level to tackle the problems in an effective manner.

- For every two persons in fire fighting team, one blower has to be made available. Blower would be used to make fire line at least 1.5 mt. away from the periphery of fire area. Second team will join with the team and take up additional works as per requirements on the site.
- In case of multiple fire sites at the same time in a beat, section or Range area, the local man power would be utilised along with the divisional squads deputed in other Section and Ranges.
- In case of burning of dry trees, solid logs, branches, where fire usually last for long period, local fire station may be called with water tank to extinguish the fire.
- At all the sites, arrangement of sufficient drinking water & first-Aid would be made available.
- The Section Forester / Forest Guard will personally ensure complete suppression of fire at site. They will assess the damage on the spot with GPS reading, enquire the cause of fire and furnish detail report to Range officer within 24 hour of the occurrence. But, message on fire and action taken information would be passed to Range office and control room at the end of the operation through VHF/ mobile phone.
- Information on Fire in VSS forest area would also be responded promptly. The section forester will lead the team with assistance of VSS members.

4.9.7 Evaluation and Reporting

- On complete suppression of fire, the section forester will make a detail report on the incidence within 48 hours.
- The Range Officer, if feels necessary, may conduct further enquiry otherwise send the report with his comment to the Divisional Forest Officer within 48 hours.
- At Division level, after scrutiny the consolidated report will be sent forward (to RCCF and PCCF level) within 3 days.
- Compiled information from DFO would reach to Forest Head quarters (PCCF Office) fortnightly for each Division without fail.
- Complete information of a fire season would compiled and analysed. Site wise source of fire and frequency of occurrence would be kept on record. The period for highest and lowest number of occurrence can be evaluated.
- Such field level basic information would be taken into consideration while preparing division fire prevention management plan.

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

[Source: Combating Forest Fire in Odisha, Publication of PCCF, Odisha, Bhubaneswar]

4.10 Other Important Information Pertaining to the Subject

Month Wise Work Programme for Prevention of Forest Fire

Month	Work items	Action at			
		Beat Level	Section Level	Range Level	Division Level
August-September	Coordination meeting with Deputy Fire Officer, DM, OFDC, DFO KL and VSS representatives			Y	Y
	Preparation of Fire prevention and reclamation Plan	Y	Y	Y	Y
	Finalisation and Submission of Plan			Y	Y
October	Discussion and recommendation of Plan by RCCF				Y
	Approval of the Plan by PCCF				Y
November-December	Analysis and rationalisation to requirement of VHF, fire control equipments and procurement.		Y	Y	Y
	Fire line creation , maintenance and completion of field works	Y	Y	Y	Y
	Construction of Machhans and selection of camp sites		Y	Y	
	Awareness & Training		Y	Y	Y
January	Selection of Fire fighting squads drawing youths from fire risk forest villages		Y	Y	
	Maintenance of Forest roads and verification of approach routes to vulnerable forest areas and villages	Y	Y	Y	Y
	Locating Labour potential	Y	Y		
	Fire Prevention Control Room				Y
February - June	Foot patrolling to vulnerable areas	Y	Y	Y	Y
	Maintenance and creation of Fire line by blower	Y	Y		
	Collection of information of forest fire and action thereof	Y	Y	Y	Y
	Receive fire alert information, Registration and action taken thereof	Y	Y	Y	Y
	Implementation of reclamation works in burned areas (S&MC)	Y	Y	Y	Y
	Monitoring fire fighting works		Y	Y	Y
July	Analysis and submission of final report on forestfire		Y	Y	Y
	Suggestive measures for improvement in practices	Y	Y	Y	Y



Institutional Arrangement

5.1 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.

5.2 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, defence, drinking water supply, environment and forests, finance (expenditure), health, power, rural development, science and technology, space, telecommunication, urban development, water resources and Chief of the Integrated Defence Staff of the Chiefs of Staff Committee are the *ex-officio* members of NEC.

(Please refer Figure 7.1 of Volume-II, Page No. 228 for Central Government Notification on constitution of NEC)

5.3 State Disaster Management Authority (SDMA)

The State Disaster Management Authorities (SDMA) has to be constituted by ever state government under the Sub-section (1) & (2) of Section 14 of Disaster Management Act

2005. The Hon'ble Chief Ministers of the state are the Chairpersons (*ex-officio*) of SDMA and other members not exceeding than eight may be nominated by the Chairpersons. The Chairman of the State Executive Committee (SEC), Chief Secretary of the State is a member and Chief Executive Officer (*ex-officio*) of SDMA.

The State Disaster Management Authority shall:

- a) Lays down policies and plans for disaster management in 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 7.2 of Volume-II, Page No. 229 for Odisha Government Notification on reconstitution of SDMA)

5.4 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 *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 7.3 of Volume-II, Page No. 230 for Odisha Government Notification on constitution of SEC)

5.5 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.

5.6 Special Relief Organization

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

“Quick response in the natural calamities is the hall-mark of the Special Relief Organisation, Odisha”.

5.7 Odisha State Disaster Management Authority (OSDMA)

Odisha State Disaster Mitigation Authority (OSDMA) was established by the Government of Odisha as an Autonomous Organisation vide Finance Department Resolution No. IFC-74/99-51779/F, Dated 28th December 1999 (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.

5.8 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 7.4 of Volume-II, Page No. 231 for Odisha Government Notification on reconstitution of SLCNC)

5.9.1 District Disaster Management Authority (DDMA)

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

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

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

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

The State Government 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.

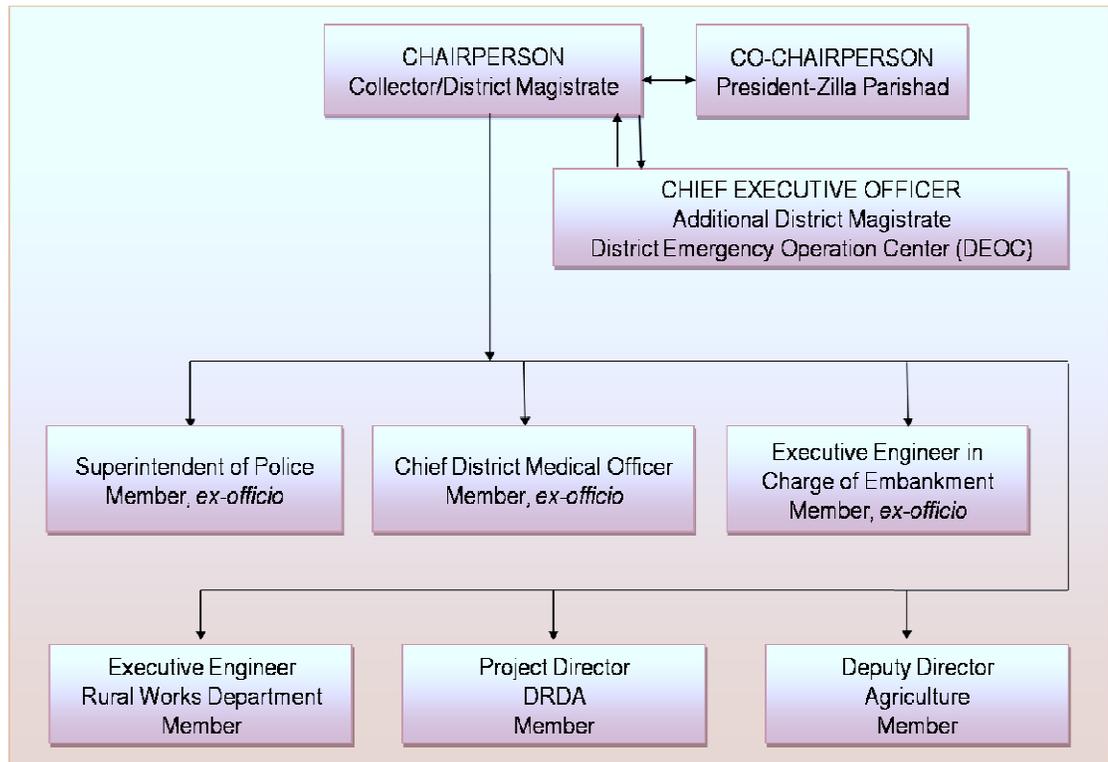
(Please refer Figure 7.5 of Volume-II, Page No. 234 for Odisha Government Notification on constitution of DDMA, Rayagada)

Table : 5.1
Structure of Rayagada District Disaster Management Authority

Sl. No.	Name of the Officer	Designation	Position in DDMA	Contact No.
1.	Sri Saroj Kumar Mishra, OAS (SAG)	Collector, Rayagada	Chairperson	9438763133
2.	Sri Gangadhar Puala	President, Zilla Parishad, Rayagada	Co-Chairperson, ex-officio	9439836374 8917565263
3.	Sri Vivekananda Sharma, IPS	Superintendent of Police, Rayagada	Member, ex-officio	9437297600
4.	Dr. Artabandhu Nayak	Chief District Medical Officer, Rayagada	Member, ex-officio	9439983501
5.	Er. Pradeep Kumar Senapati	Executive Engineer in charge of Embankments, Irrigation Division, Paralakhemundi	Member, ex-officio	9437339663
6.	Sri Sarat Chandra Panda, OAS (SAG)	Additional District Magistrate, Rayagada In charge of Emergency	Chief Executive Officer, ex-officio	9437276455

7.	Sri Maheswar Naik, OAS (S)	Project Director, DRDA, Rayagada	Member	9437643166
8.	Er. Saroj Kumar Padhy	Executive Engineer, Rural Dev. Division, Rayagada	Member	9437100764
9.	Sri Dushasan Praharaj	Chief District Agriculture Officer, Rayagada	Member	9437158148

Figure : 5.1
Organogram of District Disaster Management Authority



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

The District Disaster Management Authority (DDMA) shall:

- a) Prepare Disaster Management Plan including District Response Plan of 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 therefore.
- g) Review the state of capability for responding to any disaster or threatening disaster like situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation.
- h) Review the preparedness measures and give directions to the concerned departments at the district level for bringing the preparedness measures to the levels required for responding effectively to any disaster.
- i) Organize, coordinate and facilitate specialized training programmes and awareness programmes for different level of officers, employees, voluntary rescue workers and community members for prevention and mitigation of disaster with support of governmental and non-governmental organization and local authorities.
- j) Set-up, maintain, review and upgrade mechanism for early warning and dissemination of proper information to public.
- k) Review development plans prepared by the departments of the government at the district level, statutory authorities with a view to make necessary provisions therein for prevention of disaster or mitigation.
- l) Examine construction in any area in the district an ensure standards for prevention of disaster or mitigation laid down for such construction to be followed by the concerned departments and authorities.

- m) Identify buildings and places which could be used as relief centers or camps in the event of any disaster or disaster like situation and make arrangements for water supply and sanitation in such buildings and places.
- n) Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at short notice;
- o) Encourage the involvement of non-government organization and voluntary social welfare institutions working at the grass root level in the district for disaster management.
- p) Ensure communication systems are in order and disaster management drills are carried out periodically.
- q) Perform such other functions as the State Government or State Authority may assign to.

5.10 Specific Task Assigned to the Members of DDMA

5.10.1 Superintendent of Police, Rayagada, Member, Ex-Officio

- Regulate the flow of traffic/people to the disaster affected areas as and when such situation arises with the help of local police.
- Maintain law and order in the affected area.

5.10.2 Executive Engineer, Irrigation Division, Parakhemundi, Member, Ex-Officio

- To identify the weak points in the river banks and take appropriate action by 1st June, of each year.
- Identification of flood circles in the district and assign the Charge of Flood Circles to Responsible Officers.

5.10.3 CDM & PHO, Rayagada, Member, Ex-Officio

- Special arrangement will make to provide causality services 24x7 at all health institutions.
- Medical Relief Center (MRC) at strategic places are chosen to render health services for affected person in the identified schools and declared shelters.
- Mobile Medical Team (MMT) will render the services regularly to the displaced persons at their place of shelter (MRC) and affected areas.
- Continuous IEC activities to be taken up to aware the public about the availability of services of 108 and 102 Ambulance including the services of all vehicles exiting in the health department.

5.10.4 DDA, Rayagada, Member

- Take appropriate steps for availing flood/drought resistance seeds to farmers in the rainy season.
- Team shall be in readiness to support to face any stress situation of the farmers of the District in terms of seeds, saplings, fertilisers.
- Take appropriate steps for availability of seeds and pesticides at different points of the district for smooth distribution to the farmers for the ensuing Khariff season.

5.10.5 Executive Engineer, RWD, Rayagada, Member

- Take appropriate steps wherever necessary to close the bridges and roads submerged or over topped with flood/rain water by constructing the temporary barricades on both sides and erect hoardings.
- Respective authorities in charge of the roads will responsible for taking such actions.
- An action taken report on the above shall be submitted by the 1st week of June every year.

5.11 District Level Committee on Natural Calamities (DLCNC)

The Codal provision of Odisha Relief Code envisages the constitution of District Level Committee on Natural Calamities (DLCNC) which is the apex committee at the district to monitor preparedness and suggests improvement in the response mechanism and in all the phases of disaster management in the district. The Collector is the District Relief Officer and Disaster Manager at the district level and the structure of DLCNC, Rayagada is as follows:

Table : 4.2
Structure of District Level Committee on Natural Calamities

Sl. No.	Name of the Member	Position in DLCNC	Contact No.
1.	Sj. Saroj Kumar Mishra, OAS (SAG) Collector, Rayagada	Chairperson	9438763133
2.	Sj. Jagannatha Saraka Hon'ble Minister, ST&SCD, Minorities & Backward Classes Welfare, Govt. of Odisha	Member	9437869313
3.	Sj. Saptagiri Sankar Ulaka Hon'ble MP, LS, Koraput	Member	9778195222
4.	Sj. N. Bhaskar Rao Hon'ble MP, RS, Odisha	Member	9437001111
5.	Sj. Makaranda Muduli Hon'ble MLA, Rayagada	Member	9437458754 9437062277
6.	Sj. Raghunath Gomango Hon'ble MLA, Gunupur	Member	9437234021

7.	Sj. Gangadhar Puala President, Zilla Parishad, Rayagada	Member	9439836374 8917565263
8.	Chairperson of ULBs	Member	-
9.	Sri Sarat Chandra Panda, OAS (SAG) Additional District Magistrate	Member	9437276455
10.	Dr. Artabandhu Nayak Chief District Medical & Public Health Officer, Rayagada	Member	9439983501
11.	Er. Pradeep Kumar Senapati Executive Engineer in charge of Embankments, Irrigation Division, Paralakhemundi	Member	9437339663
12.	Dr. Bharat Chandra Garnaik Chief District Veterinary Officer, Rayagada	Member	9437414616
13.	Sri Pratap Chandra Pradhan, OAS Sub-Collector, Rayagada	Member	9437207500
14.	Sri J. Sonal, IAS Sub-Collector, Gunupur	Member	8249935895
15.	Sri Sukanta Pradhan, ORS District Emergency Officer, Rayagada	Member Secretary	7008284648
17.	Chairperson of Panchayat Samitis	Invitees	-

5.12 Other Disaster Management Groups

District Crisis Group (DCG) will function for updation of Off-Site Emergency Plan, Capacity Building and Awareness programmes near the location of the hazardous factories and also conduct First-Aid training programs for the volunteers of such localities. The Tahasildars shall remain in charge of overall relief operation of their respective Tahasils. The BDO and Executive Officers will work as Circle Officers within their jurisdictions. A quick response team at block level and GP level will constitute to tackle the disaster situation in the district. All the Tahasildars and Block Development Officers should form the Quick Response Team at Block and Panchayat Level. The suggested structures of Team to be formed in the flood/disaster prone areas as follows.

Table : 5.3
Structure of Block Level Quick Response Teams

1.	Chairperson of the Block or Municipality	Chairman
2.	Tahasildar & BDO of the Area	Co-Chairpersons
3.	IIC of the PS & AE, RWS & S	Members
4.	MO, CHC/PHC & VAS	Members
5.	CDPO & Marketing Inspector	Members
6.	Executive Officer (in case of Urban)	Member

Table : 5.4
Structure of Gram Panchayat Level Quick Response Teams

1.	Sarpanch of the Gram Panchayat	Chairman
2.	ASI/ Hawlidar/ Constable	Member
3.	PEO of the Gram Panchayat	Member
4.	Revenue Inspector	Member
5.	President & Secretary of Local Club	Members
6.	All the Ward Members	Member

5.13 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 Tippet 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 : 5.5
Location of National Disaster Response Forces

Sl. No.	Battalion, Location	State	Man power drawn from	Contact Person	Contact No.
1.	1 st Bn, NDRF, Guwahati-781017	Assam	BSF	Sh. R.S. Gill Officiating Commandant	0361-2840284 09401048790 09435117246
2.	2 nd Bn, NDRF, Nadia-741246	West Bengal	BSF	Sh. Nishit Upadhyay Commandant	033-25875032 09474061104 09474116775

3.	3 rd Bn, NDRF, Munduli, Cuttack-754013	Odisha	CISF	Sh. Jacob Kispotta Commandant	0671-2879711 09437581614
4.	4 th Bn, NDRF, Arakkonam- 631152	Tamil Nadu	CISF	Ms. Rekha Nambiyar Commandant	04177-246594 09442140269
5.	5 th Bn, NDRF, Pune-412109	Maharashtra	CRPF	Sh. Anupam Srivastava Commandant	02114-247000 09422315628
6.	6 th Bn, NDRF, Gandhinagar- 382042	Gujrat	CRPF	Sh. R.S. Joon Commandant	02668-274245 09723632166
7.	7 th Bn, NDRF, Bhatinda- 151001	Uttar Pradesh	ITBP	Sh. P.K. Srivastava Commandant	0120-2766618 09412221035
8.	8 th Bn, NDRF, Ghaziabad- 201002	Punjab	ITBP	Sh. Ravi Kumar Pandita Commandant	0164-2246193 0164-2246570
9.	9 th Bn, NDRF, Patna-801103	Bihar	BSF	Sh. Vijay Sinha Commandant	06115-253939 08544415050 09525752125
10.	10 th Bn, NDRF, Guntur-522510	Andhra Pradesh	CRPF	Mr. Zahid Khan Commandant	0863-2293050 08333068559
11.	11 th Bn, NDRF, Varanasi- 221002	Uttar Pradesh	SSB	Sh. A.K. Singh Commandant	0542-2501101 08004931410
12.	12 th Bn, NDRF, Itanagar-791112	Arunachal Pradesh	SSB	Sh. U.K. Thapliyal Commandant	0360-2277104 09485235464

5.14 Odisha Disaster Rapid Action Force (ODRAF)

The Government of Odisha formed Odisha Disaster Rapid Action Force (ODRAF) vide Notification No.939/CD,Dated07-06-2001. 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.

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.

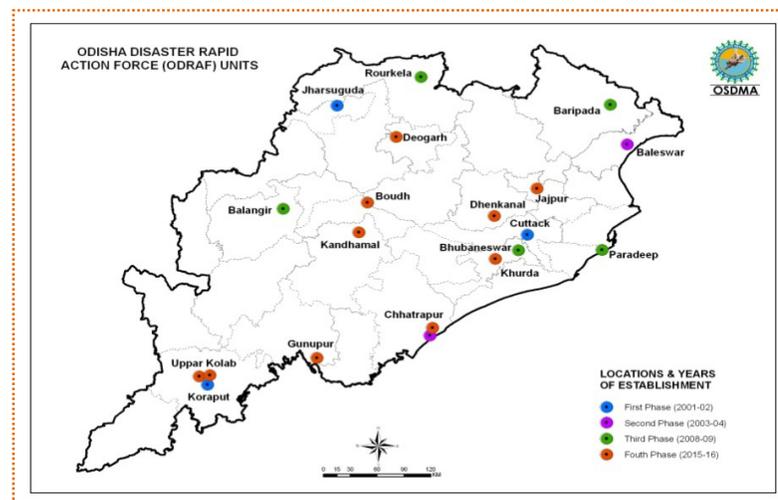
Table : 5.6

Location of Odisha Disaster Rapid Action Force with Contact Details

Sl. No.	ODRAF Bn.	Raised in the Year	Location (District)	No. of Persons in each BN.	Contact Details (Commandant)
1.	OSAP 6th Battalion, Cuttack	2001-2002	Cuttack	49	Phone: 0671-2442148 (O), 2442442 (R) Fax: 0671- 2442148 comdt6thbn.odpol@nic.in
2.	OSAP 2nd Battalion, Jharsuguda	2001-2002	Jharsuguda	48	Phone: 06645-270096 (O), 270038 (R) Fax: 06654 -220370 comdt2ndbn.odpol@nic.in
3.	OSAP 3rd Bn. Koraput	2001-2002	Koraput	38	Phone: 06852-251344 (O), 151335(R) Fax: 06852- 251344 comdt3rdbn.odpol@nic.in
4.	APR Balasore District	2003-2004	Balasore	41	Phone: 06782-262004 (O), 262005 (R) Fax: 06782 -262584 spbls.odpol@nic.in
5.	OSAP 8th Battalion, Chhatrapur	2003-2004	Ganjam	40	Phone: 06811-260375 (O), Fax: 06811 -254011 comdt8thbn.odpol@nic.in
6.	APR Jagatsinghpur District	2008-2009	Jagatsinghpur	48	Phone: 06724-220115 (O), 220015 (R), Fax: 06724- 220370, spjsp.odpol@nic.in
7.	OSAP 7th Battalion, Bhubaneswar	2008-2009	Khurdha	44	Phone: 0674-2301055 (O), 2303426 (R), Fax: 0674 -2301055 comdt7thbn.odpol@nic.in
8.	OSAP 5th Battalion, Baripada	2008-2009	Mayurbhanj	40	Phone: 06792-278232 (O), 254402 (R) Fax: 06792- 278232 comdt5thbn.odpol@nic.in
9.	APR Bolangir District	2008-2009	Balangir	43	Phone: 06652-232020 (O) -133063 (R) Fax: 06652- 232375 spbgr.odpol@nic.in
10.	OSAP 4th Battalion, Rourkela	2008-2009	Sundergarh	46	Phone: 0661-2600980(O), 2600434 (R) Fax: 0661-2600980 comdt4thbn.odpol@nic.in

11.	IR Battalion, Boudh	2015- 2016	Boudh	47	Phone: 06841-222238 7684872156 (M) 9437232275 (M) comdt5thirbn.odpol@nic.in
12.	4th IR Battalion, Deogarh	2015- 2016	Deogarh	52	Phone: 0664-3242130 (O), comdt4thirbn.odpol@nic.in
13.	OSAP 1st Battalion, Dhenkanal	2015- 2016	Dhenkanal	46	Phone: 06762- 226229 (O), 06762-226291 (CR) Fax: 06762-226291 comdt1stbn.odpol@nic.in
14.	OSAP 8th Battalion, Chhatrapur	2015- 2016	Ganjam	48	Phone: 06811-260375 (O), Fax: 06811-254011 comdt8thbn.odpol@nic.in
15.	3rd IR Battalion, Kalinganagar	2015- 2016	Jajpur	49	Phone: 0672-6244602 (O), 0672- 6244610 (CR) Fax: 0672- 6244610 comdt3rdirbn.odpol@nic.in
16.	8th Special IR Battalion, Kandhamal	2015- 2016	Kandhamal	43	Phone: 06842-2533017 (O),8763616282 (M) comdt8thsplrbrbn.odpol@nic.in
17.	6th IR Battalion, Khurda	2015- 2016	Khurda	50	Phone: 8895856633 (M) comdt6thirbn.odpol@nic.in
18.	1st IR Battalion, Upper Kolab, Koraput	2015- 2016	Koraput	43	Phone: 06852-252167 (O), 06852-211320 (CR) comdt1stirbn.odpol@nic.in
19.	7th Special IR Battalion, Upper Kolab, Koraput	2015- 2016	Koraput	44	Phone: 06852-251067(O), 06852-229007 (CR) comdt7thsplrbrbn.odpol@nic.in
20.	2nd IR Battalion, Bhamini, Rayagada	2015- 2016	Rayagada	28	Phone: 0658-725110 (O), Fax: 0685- 725110 (CR), comdt2ndirbn.odpol@nic.in

Location Map of ODRAF Units



5.15 Other Disaster Response Teams in the District

Table : 5.7
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 HR/ Volunteers
1.	District Police	Sri Vivekananda Sharma, IPS	S.P., Rayagada	06856222304	06856224504	629
2.	Home Guards	Sri Vivekananda Sharma, IPS	S.P., Rayagada	06856222304	06856224504	316
3.	ODRAF	Sri Dillip Kumar Mahapatra, OAPS-I2 nd	Commandant, IRB, Bhamini	9437101001	06857251110	28
4.	Fire Service	Sri Sagram Hansda	Asst. Fire Officer Rayagada	7978826986	06856222222	30
5.	National Cadet Crops	Sri Sunil Bhatt	Commanding Officer	7381009808	-	175
6.	Nehru Yuva Kendra	Sri Marianus Bilung	District Youth Coordinator	9437992855	06856224379	-
7.	Youth Red Cross	Sri Prasanta Kumar Panda	YRC District Coordinator	9124409291	-	100

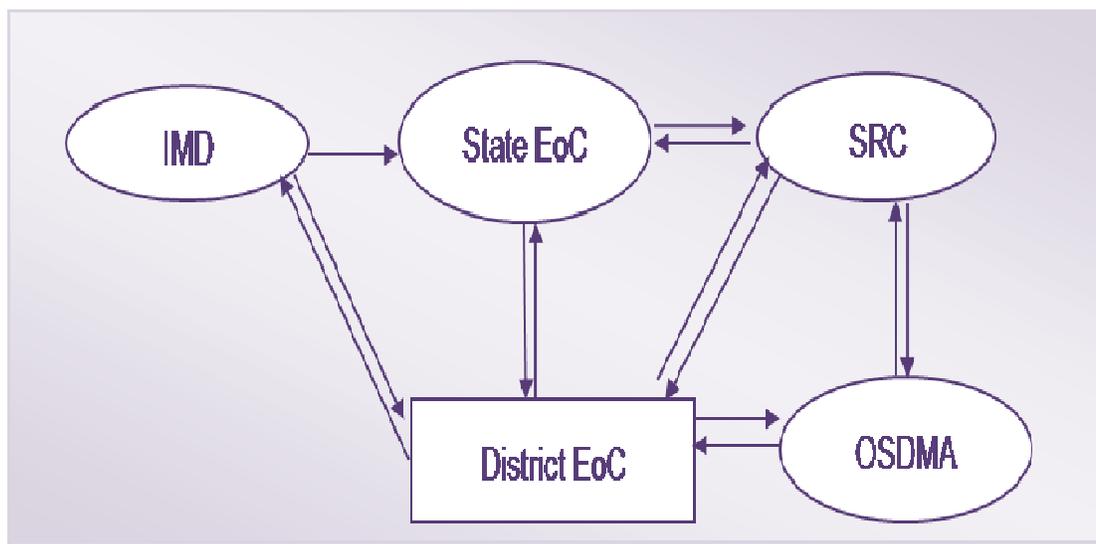
5.16 Emergency Communication System

5.16.1 State Emergency Operation Center (SEOC)

The State Emergency Operation Centre has been made operational at Rajiv Bhawan, Bhubaneswar with state of art communication network. 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 : 5.2
Information Flow Chart from SEOC to Districts



5.16.2 District Emergency Operation Center (DEOC)

The DEOC is functional at the Collectorate to provide first and immediate response to any disaster. Specially designated Emergency Officer is the Officer in Charge of the DEOC. The District Emergency Operation Centre strengthened and constructed with state of the art emergency communication equipment to communicate with State EOC as well as other local level functionaries.

In DEOC a Control Room is functioning with round the clock manned during 15th June to 30th November and during any peak period of emergency till the relief operations are over to collect and transmit information regarding the flood and other natural calamities and relief operations undertaken, if any, and for processing and communicating all such data to concerned quarters.

Table : 5.8
Equipments Provided to DEOC and their Operational Status

Sl. No.	Equipments	Unit	Status		Remarks
			Operational	Non-Operational	
1.	Desktop Computer	3	1	2	-
2.	Laser Printer	2	1	1	-
3.	UPS	3	0	3	-

4.	Scanner	1	0	1	-
5.	Fax	1	0	1	-
6.	Ink Jet Printer	0	0	0	-
7.	Multi Utility Machine (Printer/Scanner/Copy)	0	0	0	-
8.	Laptop	0	0	0	-
10.	LCD Projector	1	0	1	-
11.	Photo Copier	0	0	0	-
12.	GPS Unit	1	1	0	-
13.	Satellite Phone	1	1	0	-
14.	VHF Sets	1	0	1	-
15.	VHF Mobile Station	0	0	0	-
16.	Walkie-Talkie (VHF hand Set)	2	2	0	-
17.	Portable Diesel Generator	0	0	0	-
18.	Inverter with Battery	1	1	0	-
19.	Inflatable Tower Light	2	2	0	-
20.	Power Saw	2	2	0	-
21.	Life Jacket	2	0	2	-
22.	Life Buoy	0	0	0	-
23.	Aluminium Ladder	1	0	1	-
24.	Fire Extinguisher	2	0	2	-
25.	Siren	1	0	1	-
26.	Megaphone	0	0	0	-
27.	Colour TV/Stand	1	1	0	-
28.	Mobile Phone	0	0	0	-
29.	Display Board	1	0	1	-
30.	White Broad	1	0	1	-
31.	Computer Table/Chair	1	1	0	-
32.	Rack	0	0	0	-
33.	Book Case	0	0	0	-
34.	GI Trunk	2	2	0	-
35.	Commando Search Light	1	1	0	-
36.	Steel Almirah	1	1	0	-

Figure : 5.3
Information Flow Chart from District Emergency Operation Center (DEOC) to Villages with Early Warning

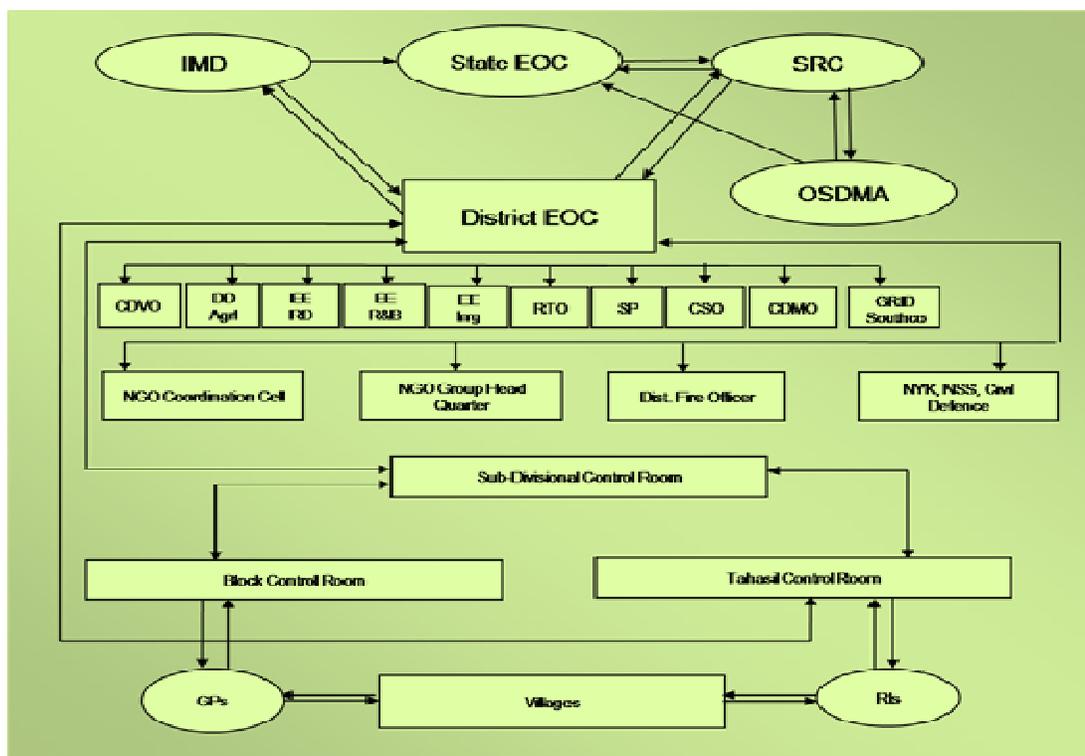
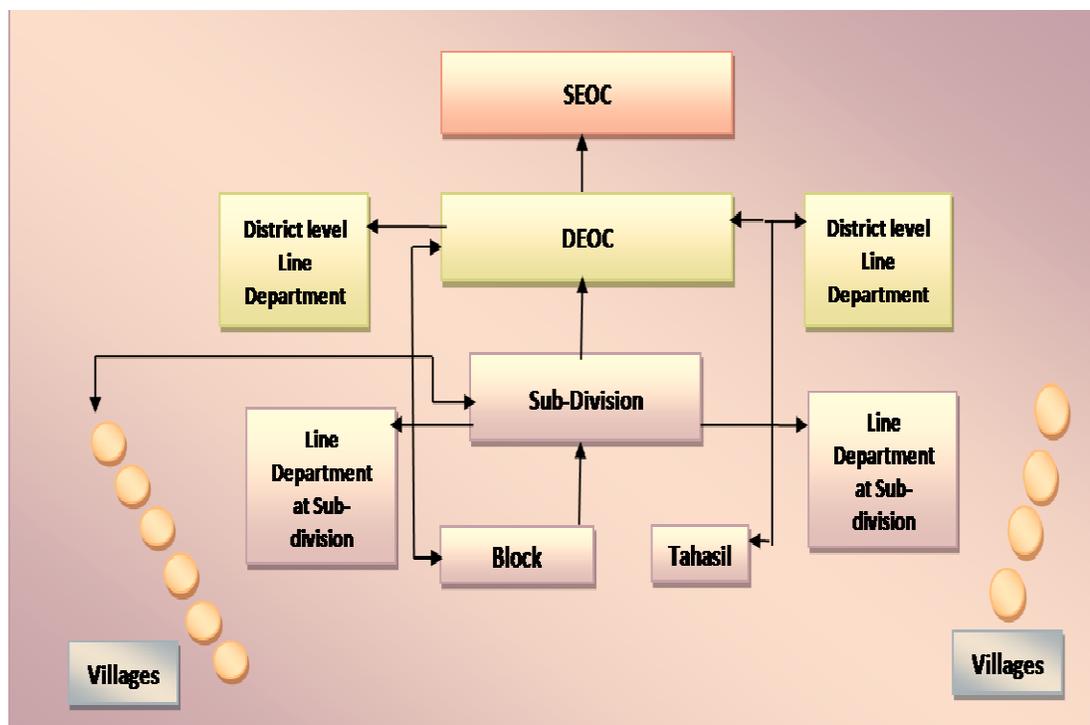


Table : 5.9
Key Line Departments at the District

Sl. No.	Department	Head of the Department at District	Name of the Nodal Officer	Contact No.
1.	R&DM	Collector & DM	Sri Sukanta Pradhan, ORS District Emergency Officer	7008284648
2.	Home - ODRAF	Commandant	Shri DillipKumar Mahapatra, OAPS-I	9437101001
3.	Home - Fire Service	Asst. Fire Officer	Sri Sagram Hansada Asst. Fire Officer	7978826986
4.	Health & FW	CDM& PHO	Dr. V. Lokanath Raju DPHO	9439984968
5.	A&FE	CDAO	Sri Suman Singh Patnaik Asst. Director of Agriculture	8249834800
6.	ARD	CDVO	Dr. Prafulla Kumar Sahoo ADVO (LP)	9439674565
7.	L&ESI	Dy. Director, F&B	Sri Ranjit Kumar Nayak Asst. Director, F&B	9437416283

Figure : 5.4
Information Flow Chart from Villages to District Emergency Operation Center (DEOC) without Early Warning



5.16.3 Block Emergency Operation Center (BEOC)

During the time of disaster the Block Development Officer and Tahasildars are jointly manage relief administration at their respective jurisdictions. To combat heat wave situation, and for the flood management during the monsoon, Control Room is functioning round the clock in all Blocks/Tahasil from 15th June and shall be in operation till 30th November.

Table : 5.10
Key Line Departments at the Block

Sl. No.	Department	Head of the Department at Block	Name of the Nodal Officer	Contact No.
1.	PR&DW	BDO, Rayagada	Sri Laxmi Narayana Sabat, OAS Block Development Officer	9437776555
2.	PR&DW	BDO, Kalyansingpur	Sri Kalu Charana Nayak, OAS Block Development Officer	9178050345
3.	PR&DW	BDO, Kolnara	Sri Tapas Kumar Bhoi, OAS Block Development Officer	9439303998

4.	PR&DW	BDO, Kashipur	Sri Sarat Sabaro, OAS Block Development Officer	7991026230
5.	PR&DW	BDO, Gunupur	Ms. Shantiprabha Pradhan, OAS Block Development Officer	7978993171
6.	PR&DW	BDO, Padmapur	Sri Dayamaya Pradhan, OAS Block Development Officer	8249117584
7.	PR&DW	BDO, Gudari	Sri Nursingh Ch.Sethi, OAS Block Development Officer	9937147529
8.	PR&DW	BDO, Ramanaguda	Sri Benudhar Sabar, OAS Block Development Officer	8280405236
9.	PR&DW	BDO, Bissam Cuttack	Sri Albert Lakra, OAS Block Development Officer	9668754453
10.	PR&DW	BDO, Muniguda	Sri Dilip Ku. Behera, OAS Block Development Officer	9438734936
11.	PR&DW	BDO, Chandrapur	Sri George Dung Dung, OAS Block Development Officer	8280405316

Table : 5.11

Key Line Departments at the Tahasil

Sl. No.	Department	Head of the Department at Tahasil	Name of the Nodal Officer	Contact No.
1.	Revenue & DM	Tahasil, Rayagada	Sri Uma Sankar Behera, OAS Tahasildar	7838327915
2.	Revenue & DM	Tahasil, Kalyansingpur	Sri Debasish Kar, OAS Tahasildar	9861552803
3.	Revenue & DM	Tahasil, Kolnara	Ms. Manasi Nayak, OAS Tahasildar	9437836949
4.	Revenue & DM	Tahasil, Kashipur	Sri Sarat Sabora, OAS Tahasildar	7991026230
5.	Revenue & DM	Tahasil, Gunupur	Sri Sarat Chandra Nayak, OAS Tahasildar	9938709886
6.	Revenue & DM	Tahasil, Padmapur	Sri Nila Madhaba Majhi, OAS Tahasildar	8895565651
7.	Revenue & DM	Tahasil, Gudari	Ms. Bharatee Devi, OAS Tahasildar	7205575337
8.	Revenue & DM	Tahasil, Ramanaguda	Ms. Jayshree Mallik, OAS Tahasildar	9438523742
9.	Revenue & DM	Tahasil, Bissam Cuttack	Sri Suwendu Kumar Jena, OAS Tahasildar	8847843015
10.	Revenue & DM	Tahasil, Muniguda	Dr. Debasis Gouda, OAS Tahasildar	9090499102
11.	Revenue & DM	Tahasil, Chandrapur	Sri Chinmaya Das, OAS Tahasildar	7048923363

5.17 State Crisis Group (SCG)

The State Government has constituted a State Crisis Group for management of chemical accidents as provision of the Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996 on 1st August 1996.

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

5.17.1 Composition of the State Crisis Group

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

Table : 5.12
Composition of State Crisis Group

Sl. No.	Members	Designation
1.	Chief Secretary, Odisha	Chairman
2.	DC-cum-ACS & Chairman, SPCB	Member
3.	Secretary to Government, Labour & ESI Department	Member Secretary
4.	Secretary to Government, Home Department	Member
5.	Secretary to Government, Forest & Environment Department	Member
6.	Secretary to Government, Health & FW Department	Member
7.	Secretary to Government, Industries Department	Member
8.	Secretary to Government, H&UD Department (PH Engineering)	Member
9.	Special Relief Commissioner, Odisha	Member
10.	Secretary to Government, Transport Department	Member
11.	Labour Commissioner	Member
12.	D.G. of Police, Odisha	Member
13.	D.G., Fire Services	Member
14.	Director of Factories and Boilers	Member
15.	Head, NDRF, Odisha, Bhubaneswar	Member
16.	Head, Tata Steel Ltd. Kalinga Nagar	Member
17.	Head (Safety), IOCL, Paradeep	Member
18.	Prof. G.K.Roy, Ex-Director and HOD (Chemical Engg.), NIT, Rourkela	Member
19.	Director, RLI, (Directorate General of Factory Advice, Kolkata, GoI)	Member
20.	Regional Director, Mines Safety (DGMS, Bhubaneswar, GoI)	Member

5.17.2 Functions of the State Crisis Group

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

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

5.18 District Crisis Group

As prescribed in the Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996, the District Crisis Group has to be constituted.

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

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

5.18.1 Composition of the District Crisis Group

Date of Constitution of District Crisis Group (dd/mm/yyyy): 20.06.2000

Table : 5.13
Composition of District Crisis Group

Sl. No.	Member	Designation
1.	Collector & District Magistrate, Rayagada	Chairperson
2.	Asst. Director of Factories & Boilers, Rayagada	Member Secretary
3.	Superintendent of Police, Rayagada	Invited Member
4.	Additional District Magistrate, Rayagada	Member
5.	Sub- Collector, Rayagada	Member
6.	District Emergency Officer, Rayagada	Member
7.	RTO, Rayagada	Member
8.	Tahsildar, Rayagada	Invited Member
9.	General Manager, DIC, Rayagada	Member
10.	Fire Officer, Rayagada	Member
11.	Chief District Medical Officer, Rayagada	Member
12.	Regional Officer, OSPCB, Rayagada	Member
13.	Sub-Collector, Gunupur	Member
14.	DLO, Rayagada	Invited Member
15.	Block Development Officer, Rayagada	Invited Member
16.	Block Development Officer, Kolonara	Invited Member
17.	CSO, Rayagada	Member
18.	Executive Engineer, SOUTHCO, Rayagada	Member
19.	DPO, DDMA, OSDMA, Rayagada	Member
20.	District Information & Public Relation Officer, Rayagada	Member
21.	Controller of Explosive, Rourkela	Member
22.	Chief, Civil Defence	Member
23.	Working President, JK Paper Mills Workers Union	Member
24.	Dy. Superintendent of Police, Rayagada	Member

25.	Executive Officer, Rayagada Municipality	Member
26.	Sub-Divisional Officer, PHD, Rayagada	Member
27.	District Agricultural Officer	Member
28.	Chief Executive (Works), J K Paper Mills	Member
29.	Chief Safety Officer, JK Paper Mills	Member
30.	Chief Medical Officer, JK Paper Mills	Member
31.	Sr. General Manager, IMFA Ltd., Therubali	Member
32.	Chief Safety Officer, IMFA Ltd., Therubali	Member
33.	Sr. General Manager, Utkal Alumina International Ltd., Tikiri	Member
34.	Chief Safety Officer, Utkal Alumina International Ltd., Tikiri	Member
35.	Chief Executive (Works), Utkal Alumina International Ltd., Tikiri	Member
36.	Factory Manager, M/s. JAYSCO, Rayagada	Member
37.	Factory Manager, M/s. IOCL, Rayagada	Member
38.	Safety Officer, M/s. IOCL, Rayagada	Member
39.	Representative of DRM, Visakhapatnam	Invited Member
40.	Dy. Director of Factories & Boilers, Rayagada Division	Invited Member
41.	Site Head/Factory Manager, M/s. LPG Bottling Plant, HPCL, Rayagada	Member

5.19 Local Crisis Group

The Local Crisis Group shall be the body in the industrial pocket to deal with chemical accidents and coordinate efforts in planning, preparedness and mitigation of a chemical accident. Without prejudice to the functions specified under sub-rule (1), the Local Crisis Group shall,

1. Prepare local emergency plan for the industrial pocket;
2. Train personnel involved in chemical accident management;
3. Ensure dovetailing of the local emergency plan with the district off-site emergency plan;
4. Educate the population likely to be affected in a chemical accident about the remedies and existing preparedness in the area;
5. Conduct at least one full scale mock-drill of a chemical accident at a site every six months forward a report to the District Crisis Group;
6. Respond to all public inquiries on the subject.

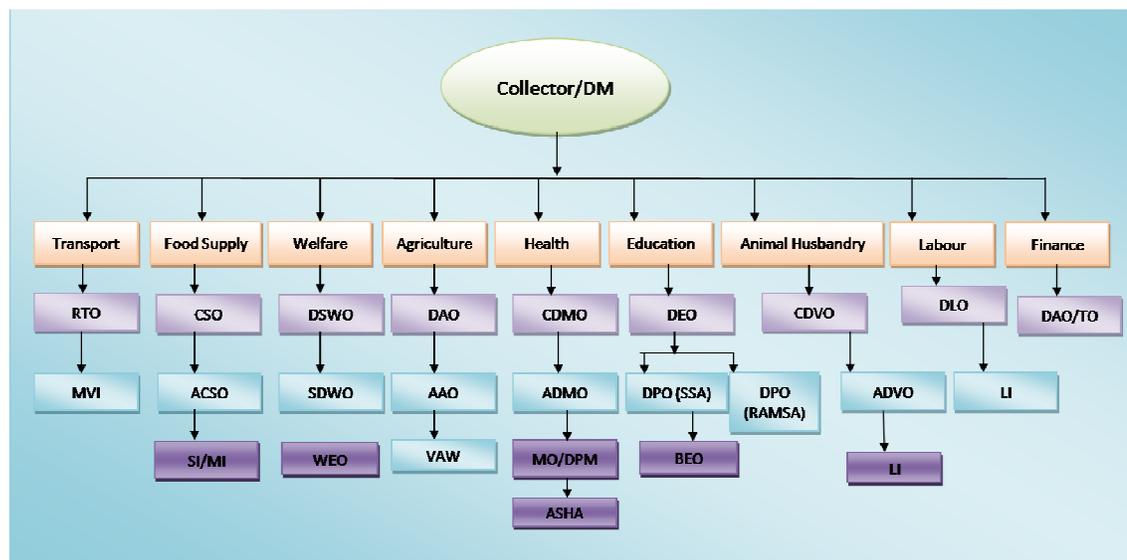
5.19.1 Composition of the Local Crisis Group

Date of Constitution of District Crisis Group (dd/mm/yyyy) : 08.07.2019

Table : 5.14
Composition of Local Crisis Group

Sl. No.	Member	Designation
1.	Sub-Collector, Rayagada	Chairperson
2.	Asst. Director of Factories & Boilers, Rayagada Zone	Member Secretary
3.	District Emergency Officer, Rayagada	Member
4.	Fire Officer, Rayagada	Member
5.	Sub-Divisional Police Officer, Rayagada	Member
6.	Civil Defence Officer	Member
7.	Regional Transport Officer, Rayagada	Member
8.	Asst. Divisional Medical Officer, Rayagada	Member
9.	Block Development Officer, Rayagada, Kashipur, Kolnara	Member
10.	Tahasildar of Concerned Tahasil	Member
11.	Sarpancha of concerned GP	Member
12.	President of Print Media	Member
13.	District Project Officer, OSDMA	Member
14.	The Occupier, M/s. Vardhaman Chemical Industries At: B-7 to B-12, Pitamahal Industrial Estate, Dist: Rayagada	Member
15.	Factory Manager, M/s. JK Paper Ltd., J K Pur, Rayagada	Member
16.	Factory Manager, M/s. Indian Metal & Ferro Alloys Ltd., Therubali, Rayagada	Member
17.	Factory Manager, M/s. Utkal Alumina International Ltd., Doraguda, Dist. Rayagada	Member
18.	President of Truck Owners Association	Member
19.	Two Doctors eminent in the Local area, to be nominated by the Chairperson (Chief Medical Officer of M/s. JK Paper Mills, JK Pur & Chief Medical Officer of M/s. Utkal Alumina International Ltd., Tikiri)	Member
20.	One Representative of Non-Government Organisation to be nominated by the Chairperson	Member
21.	Two Social Workers to be nominated by the Chairperson	Member

Figure : 5.5
Coordination Structure at the District Level and Down the Line



5.20 GO-NGO Coordination Before and After Disaster in the District

The Section 35 (2) of DM Act 2005 says, In particular and without prejudice to the generality of the provisions of sub-section (I), the measures which the Central Government may take under that sub-section include measures with respect to all or any of the following matters, namely- (a) Coordination of actions of Ministries or Departments of the Government of India, State Governments, National Authority, Governmental and non-governmental organizations in relation to disaster management.

Odisha State Disaster Management Policy 2005, the Resolution dated 4th March, 2005 states that, active participation of NGOs, community based organizations (CBOs) and other civil society institutions are essential for effective disaster management. Therefore, their help and cooperation will be solicited. The NGOs will be encouraged to carry out sustained developmental work with disaster resilience as the central theme, especially in remote, inaccessible and vulnerable areas of the State.

The district has been able to achieve partnership with various social organizations like NCC, NYK, St. John Ambulance, Sathy Sai Seva Group, Lions Club, Junior, Youth Red Cross, etc are the important organizations who are working dedicatedly in providing their services for disaster management to the mankind. Youth Red Cross and NCC are playing instrumental role in generating awareness and facilitating community planning in the district. The District Magistrate (Central) Office is taking special initiatives to encourage NGOs/ VOs/ Youth Clubs to participate in various awareness generation activities and community planning exercises.

In the Year 2017, Rayagada has crossed over severe Railway Accident near Kunderu. During this disaster various NGOs, Youth Clubs, Registered Social Organisations, NCC, Red Cross has supported and played an important role in rescue and evacuation mechanism. The Lions Club, Marwadi Yuva Manch, Sathya Sai Seva Samiti, any many others have provided both food and clothes to the people suffered during the Train Accident.

So, the whole process of GO-NGO Coordination is as follows:

- Line listing of NGOs/VOs with their area and subject of operation.
- In District Planning process the sharing of ideas may be incorporated.
- While approaching community centric approach the NGOs can play a better role.
- To ensure community Participation in every developmental activity of the GO.
- In mainstreaming of the vulnerable community.
- Sharing of responsibility and hands on support in case of emergencies.
- Exchange of Resources.

5.21 Role of Corporate Sector in the District Relating to Disaster Management

Disaster affects development and all aspect of human life and its management involves actions by all departments, organization and agencies. It is a multi-agency function of government non-government and corporate sectors. Therefore it is important that roles and responsibilities of each stakeholder are laid down during normal time and coordination mechanism worked out so that the same works during emergencies. Therefore, all the stakeholders, government, private and business houses in the district should participate in the DRR strategy in the district.

The Corporate sector are a major partner in the DDMA organogram. They are members of Red Cross as well as members of Crisis Management Group. We have 3 nos of major corporate houses at Rayagada district. They are JK Papers Ltd., IMFA & Utkal Alumina. JK Papers Ltd. is working in JK Pur just 10 kms away from head quarters as IMFA is situated around 20 kms and Utkal Alumina is the farthest around 90 kms but very close to two of the most vulnerable epidemic prone blocks of Rayagada district i.e. Kashipur and K.Singpur. Since, they are belong to the industrial sector, have well established health units which is generally also used for the local people. While they have their own safety and security measures, also have good and upgraded source of human resources and equipments too. In recent past during the train accident, all the three CSR partners have supported in relief operations, in evacuation and in transportation of injured and diseased persons. They are also actively participating through CSR activities in development of local areas.

The CSR partners contributes in several ways to disaster management:

- Awareness Generation.
- Training.

- Mock Drills.
- Development of On-Site and Off-Site DM Plans.
- Preparation of Inventory of Resources.
- Sensitization Programme.
- Organisation of Annual Event.
- Preparation of Inventory Resource.

5.22 Public Private Partnership: Public & Private Emergency Service Facilities Available in the District

To provide emergency services in the critical areas, partnership with the private agencies established in the district. Ambulance service, patient transport and connectivity to remote areas as well as stocking of food materials in the pre-flood situation managed through public private partnerships by the health, transportation and civil supplies departments respectively.

5.23 Multipurpose Flood Shelters (MFS) in the District

- There are 3 Nos. of Multipurpose Flood Shelters constructed under the Chief Minister's Relief Fund (CMRF) in 3 different flood prone locations of the district to meet the infrastructure gap as well to be used for shelter purposes to save human lives during disasters. The ground floor of the building can be used as shelter for livestock during emergencies. Relief materials and medicines can be stocked for emergency situation.
- To ensure sustainable maintenance of the shelter buildings, community based Flood Shelter Management and Maintenance Committee (FSMMC) is formed at each MFS level. Different Task forces are responsible different tasks to manage the disaster more effectively at community level.

Table : 5.16
Details of FSMMC

Sl. No.	Name of the FS	Location	Name of President	Contact No.	Name of Secretary	Contact No.
1.	MFS	Vill/GP Hat Seskhal, Block: Rayagada	Sri Basanta Ku. Bidika, Sarpanch, Hat Seskhal	-	Sri Sudhir Kumar Panli	9439680432
2.	MFS	Bikrampur, Block: Gunupur	Sri Bhabagrahi Sahoo Executive Officer Municipality, Gunupur	7735537724	Sri Debiprasad Bauri	9861875579
3.	MFS	Vill/GP Kutragada, Block: Bissam Cuttack	Sri Narendra Pidikaka Sarpanch, Kutragada	-	Sri Ajit Martha	8280030759 9777261758

- c) A number of equipments including basic equipment for search and rescue have been provided to each shelter to use at shelter level during disasters.

Table : 5.17
Details of Equipments Provided to FS

Sl. No.	Name of the MFS	Location	Equipments Provided	Status		Remarks
				Operational	Non Operational	
1.	MFS	Vill/GP Hat Seskhal, Rayagada Block	Telescopic Tower Light with Generator, Portable Inflatable Towerlight, Life Buoy, Life Jacket, Foldable Stretcher, Fire Extingusher, Wheel Chair, Hansheld Searchlight, Chain Saw, BAR with Safety Cover RSN, Spare Chain, Helmet, Gum Boot, Safety Goggles, Tool Kits, Free Kitchen Utensil Items, etc.	Yes	-	-
2.	MFS	Bikrampur, Gunupur				
3.	MFS	Vill/GP Kutragada, Bissam Cuttack Block				

5.24 Other Identified Safe Temporary Shelters in the District

Table : 5.18
Identified Safe Temporary Shelters

Sl. No.	Block	GP	Village	Name of the Institutions/Buildings	Type of Roof	No. of Rooms (Size)	No. of Toilets (M/F)	Availability of Kitchen	Total useable area
1.	Rayagada	Pitamahal	Lada Jagannathpur Beheraguda Pujaribambu Umarballi	Lada School Building Jagannathpur School Building Jurudi School Building Bairagihalua School	Concrete	-	-	-	-
2.	Rayagada	Jemadeipentho	Sanakantua Badaraising Turihansa	School Building School Building Badahansa School Building	Concrete	-	-	-	-
3.	Rayagada	Kerada	Boiruhlua Anija Gangannapeta	B.Halua School Building School Building Khilimisiguda School Building	Concrete	-	-	-	-

4.	Rayagada	K.Malligam	Gurumguda	School Building	Concrete	-	-	-	-
5.	Rayagada	Kottapetta	Kotapetta	School Building	Concrete	-	-	-	-
6.	Rayagada	K.Malligam	K.Malligam Kondhao Malligan Dukhinaikguda Kadaliguda	School Building School Building Kadaliguda School Building School Building	Concrete	-	-	-	-
7.	Rayagada	Hat Seshkhal	Hat Seshkhal	MCS, Hatasheskhal	Concrete	-	-	-	-
8.	Gunpur	Gadiakhala	Turukaniguda Pradhaniguda Gadiakhala	Turukaniguda High School Pradhaniguda High School Gadiakhola Temple	Concrete	-	-	-	-
9.	Gunpur ULB	Gunpur ULB	Gunpur ULB	Sub-Collector Office Gunpur College Govt. Boys' High School Housing Board Colony Marathiguda Old-Sub Treasury Office MCS at Municipality	Concrete	-	-	-	-
10.	Gunpur	Dombosora	Dombosora	Dombosora High School	Concrete	-	-	-	-
11.	Gunpur	Jagannathpur	Jagannathpur Machhakhunti	Jagannath High School & ME School Machhakhunti U.P. School	Concrete	-	-	-	-
12.	Gunpur	Sirijholi	Sirijholi	Sirijholi U.P. School	Concrete	-	-	-	-
13.	Gunpur	Chalakamba	Chalakamba	Housing Board Colony Chalakamba High School	Concrete	-	-	-	-
14.	Gunpur	Baghsala	Bharisingi	Bharisingi U.P. school	Concrete	-	-	-	-
15.	Gunpur	Ompera	Ompera	Low Cost Hostel, Ompera	Concrete	-	-	-	-
16.	Gudari NAC	Gudari NAC	Gudari NAC	Govt. High School College Hostel Gudari Girls' U.P. School Veterinary Office Boys' U.P.School Goudasahi U.P.School Bahmindonger & Bhurukudi School	Concrete	-	-	-	-

17.	Gudari	Asada	Asada	Bahminidonger and Bhurukudi School	Concrete	-	-	-	-
18	Gudari	Khariguda	Gunangbali Ponkobadi Khetaguda Sanagorotha Badagorotha Baghamari	Pimary School, Sanagorotha	Concrete	-	-	-	-
19.	Chandrapur	Bijapur	Bijapur Gundriguda Hanumanthapur Dangodoroda Ramona Bada Pandarakhala Bedabaju	PSME School, UP School, Gudarigunda PSME School	Concrete	-	-	-	-
20.	Ramanuguda	Bhamini	Limpadar K.Gumuda Serma Bhamini Gumuda Dhepagumuda Antrajholi Gulumunda Gutulidong Kaithapadar Achava Pandrajholli Srirampur	ME& UP School of Ukkamba and Limapadar Khalagumuda School Dhepaguda School Nirmola Sevasharma Dhepaguda PS Linapadar PS Birod Nagar PS Gumuda PS Khalla Gumuda PS	Concrete	-	-	-	-
21.	Bissam Cuttaack	Kutraguda	Kutraguda Hukumtola Kusumgudi Kutraguda Metragudi	MFS Kutragada	Concrete	3 (300 Sqft)	3	Yes	2500 Sqft
				Restshed Kutragada		-	-	-	-
		Bethiapada	Gumudi Khalamunda	TRW School, Bethiapada		26 (600 sqft)	20	Yes	2 Ac.
		Bethiapada	Gangarapadu Kapapadar	TRW School, Kapapadar		43 (800 sqft)	48	Yes	3 Ac.
22.	Muniguda	Raghubari Ambadala Patraguda Ambadala Patraguda Amlabhata Kumudabali	Silkudi Ghamataguda Gumudi Jhigidi Kumudabali Singari Kinam Koramohan Janabali Ankurbali Dhobagudi Deokupuli	PS Silkudi PS Ghamataguda PS Gumudi PSJhigidi PSH, Agula PSH, Singari PS Podimoska PS Tulaipadar PS Janabali PS Khilamunda PS Dhobagudi PS Deokupuli	Concrete	-	-	-	-
23.	Padampur	Bichikote Dharapur Radu Jeera	Bichikote Dharapur Radu Jeera	LP School, Dharapur	Concrete	-	-	-	-

24.	Padampur	Derigan Kadamguda Karnapadu	Derigan Kadamguda Karnapadu	Dispensary Building, Derigan Primary School Building, Karnapadu	Concrete	-	-	-	-
25.	Padampur	Naira	Naira	ME School, Naira	Concrete	-	-	-	-
26.	Padampur	Khamapada	Khamapadar and attached area	Boys' UP School, Padampur	Concrete	-	-	-	-
27.	Kalyansingpur	K.Singhpur	K. Singhpur Andharitola	School Building	Concrete	-	-	-	-
28.	Kalyansingpur	Dhamanipanga	Adabadi	School Building	Concrete	-	-	-	-
29.	Kalyansingpur	Pujariguda	Pujariguda Mahariguda	School Building	Concrete	-	-	-	-
30.	Kalyansingpur	Badaguda	Kumbharguda	School Building	Concrete	-	-	-	-
31.	Kalyansingpur	Sikarpai	Belkona Dhamalima Bheja	School Building	Concrete	-	-	-	-
32.	Kalyansingpur	Majhiguda	Jilunda Kothaguda G.K.Paddu Kuradi	School Building	Concrete	-	-	-	-

5.25 Other Safe Sites for Temporary Shelter for Flood, etc.

Sl. No.	Block Name	GP Name	No. of Mounts	No. of High Bridges
1.	-	-	-	-



Prevention & Mitigation Measures

6.1 Ways & Means to Prevent or Reduce the Impact of Various Disasters

A better disaster management is possible only by means of prevention and mitigation activities. Now a day there is a paradigm shift in the approach to disaster management from a culture of relief and rehabilitation to that of prevention and mitigation. Structural prevention and mitigation measures generally refer to physical construction which includes engineering measures, construction of hazard resistant and protective infrastructures. Non-structural measures refer to awareness and education, practice, training and capacity development.

The preventive measures must be hazard specific. It must in structural and non-structural. The district must consider to be prepared by cross checking these following preventive measures.

Hazard	Structural Measures	Non-Structural Measures
Flood	<ul style="list-style-type: none"> • Construction, maintenance and protection of flood control structures like embankments, bunds, etc. • Dams and embankments can also be constructed which can be used as temporarily storing space which reduced the chances of lower plains getting flooded. • Critical buildings as well as private houses in flood prone areas should be constructed on an elevated area & if necessary on stilts and platform. • Construction of tube wells on raised platforms. 	<ul style="list-style-type: none"> • Awareness on flood proof habitat planning with long term goal. • Crops that can be harvested before the onset of monsoon/flood season and crops that are flood friendly should be grown in the region.
Drought	<ul style="list-style-type: none"> • Construction of irrigation channels. 	<ul style="list-style-type: none"> • Promotion and support for rainwater

	<ul style="list-style-type: none"> Existing ponds to be cleaned and more ponds to be dug as part of MNREGA activities in village. Sluice gates to be linked with ponds. Tubewells and Bore wells to be built in villages. Construction and maintenance of grain banks on safer locations. Massive Plantations to be taken up. 	<p>harvesting.</p> <ul style="list-style-type: none"> Awareness on government subsidy on bore wells for irrigation purposes.
Epidemic	<ul style="list-style-type: none"> Health units to be updated. Ready stock of emergency medicines. PWS/ Tube wells/ Sanitary wells to be chlorinated. 	<ul style="list-style-type: none"> Awareness generation on different epidemics.
Fire	<ul style="list-style-type: none"> Establishment of fire stations as per Fire Safety Bye laws. Updated inventory system and fire fighting equipment. Alert communication system. 	<ul style="list-style-type: none"> Promotion of usage of fuel blocks during summers to minimize cases of fire during summer. Awareness campaign on fire hazard and strategies to prevent fire incidents and promotion of usages.
Road / Rail Accident	<ul style="list-style-type: none"> Possible vulnerable routs / tracks to be identified. Strong monitoring of the maintenance to avoid human fault. 	<ul style="list-style-type: none"> Time being meetings between administration and railway board. Emergency contacts to be establish. Sharing of disaster management plan.
Earthquake	<ul style="list-style-type: none"> All Building have earthquake resilient features. Building bye laws applicable for Zone-5 region should be followed all buildings & public buildings must. 	<ul style="list-style-type: none"> Awareness and mock drill in buildings to demonstrate fire rescue methods and fire fighting methods.
Industrial Hazards	<ul style="list-style-type: none"> Existing systems upgradation in a phase wise emphasizing on risk reduction and to avoid disaster. 	<ul style="list-style-type: none"> Training programmes to be conducted regularly among the employees to create awareness on the prevailing hazards and the mitigation measures. Several audits and inspections to be carried out to identify and eliminate the hazards. Trained and experienced employees equipped with appropriate PPEs to be engaged in critical activities. Safe Operating Procedures and Safe Maintenance Practices are to be followed in all activities. On Site Emergency Preparedness Plan to be prepared and implementation of the same is being

		<p>ensured.</p> <ul style="list-style-type: none"> • Mock Drills are to be conducted as per schedule. • Use of PPE's are to be ensured. • Risk associated in all the activities is being assessed and necessary control measures are to be adopted to eliminate the risk.
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6.2 Structural Measures

Table : 6.1

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting Date	Date of Completion	Cost (Rs. in lakh)	Funding Source
1.	Paralakhemundi Irrigation Division	Flood Protection Work in Right Flood Bank of River Vansadhara near Pujariguda in Ramanaguda	Current FY	Current FY	497.23	Deptt.
2.	Paralakhemundi Irrigation Division	Flood Protection Work on Right Flood Bank of River Vansadhara near Serma in Ramanaguda	Current FY	Current FY	442.45	Deptt.
3.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Nagavali near Taja in K.Singpur Block	Current FY	Current FY	118.72	Deptt.
4.	Paralakhemundi Irrigation Division	Flood Protection Work on Right Flood Bank of River Nagavali near G. Seshkhal in Kolnara Block	Current FY	Current FY	141.89	Deptt.
5.	Paralakhemundi Irrigation Division	Flood Protection Work to Right Flood Bank of Jhanjabati Nalla near Halua	Current FY	Current FY	123.03	Deptt.
6.	Paralakhemundi Irrigation Division	Flood Protection Work to Left Bank of Jhanjabati Nalla Right near Jagannath Temple to Majhighariani Temple	Current FY	Current FY	370.37	Deptt.
7.	Paralakhemundi Irrigation Division	Flood Protection Work on Right Flood Bank of River Vansadhara near Bainaguda	Current FY	Current FY	387.70	Deptt.

8.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Vansadhara near Pradhaniguda	Current FY	Current FY	386.88	Deptt.
9.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Vansadhara near Chalakamba	Current FY	Current FY	201.60	Deptt.
10.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Vansadhara near Gadiakhalla	Current FY	Current FY	374.80	Deptt.
11.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of Sirijholli Nalla near Gulumunda to Panasaguda of River Vansadhara Right	Current FY	Current FY	238.30	Deptt.
12.	Paralakhemundi Irrigation Division	Construction of Right Bank & Protection Work on River Vansadhara near Gumuda Bridge in Ramanaguda Block	Current FY	Current FY	4127.30	Deptt.
13.	Paralakhemundi Irrigation Division	Flood Protection Work on Right Flood Bank of River Vansadhara near Limapadar in Gunupur	Current FY	Current FY	442.85	Deptt.
14.	Paralakhemundi Irrigation Division	Flood Protection Work to Right Bank of River Nagavali near Ambaguda	Current FY	Current FY	459.40	Deptt.
15.	Paralakhemundi Irrigation Division	Flood Protection Work on both Flood Banks of River Nagavali near Kotapeta & Malligaon	Current FY	Current FY	658.80	Deptt.
16.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Vansadhara near Gunupur Town	Current FY	Current FY	364.22	Deptt.
17.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank of River Vansadhara near Gudari PWD IB	Current FY	Current FY	337.85	Deptt.
18.	Paralakhemundi Irrigation Division	Flood Protection Work on Left Flood Bank near Mariguda and Right Flood Bank at Antariguda of Rayagada Municipality	Current FY	Current FY	493.55	Deptt.
19.	Paralakhemundi Irrigation Division	Flood Protection Works to Right Flood Bank near Rebatiguda & Biribadi in Kolnara Block	Current FY	Current FY	359.98	Deptt.

20.	Paralakhemundi Irrigation Division	Flood Protection Works to Right Flood Bank near Budaguda in K.Singpur Block	Current FY	Current FY	282.50	Deptt.
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[Source: Irrigation Division/ DDH/ RWS&S/ RMC, Gunupur]

6.3 Non-Structural Measures

Table : 6.2

Sl. No.	Name of the Department/ Office	Activity/ Project	Starting Date	Date of Completion	Cost (Rs. in lakh)	Funding Source
1.	CDAO	DCP (Low Remunerative crops to High Remunerative crops)	April	September	-	Deptt.
2.	DDH	Rejuvenation of Old Orchards	Current FY	3 Months	Subsidy 0.20/Ha.	MIDH Scheme
3.	DDH	Plantation (Perennial Crops)	Current FY	3 Months	50% Subsidy on cost of planation	MIDH Scheme
4.	RMC (R)	Awareness for Paddy Procurement	November & April	November & April	1.50	Deptt.
5.	RMC (R)	Awareness for Cotton Procurement	November	November	1.00	Deptt.
6.	PHED	Deployment of Tanker	Current FY	Current FY	0.0117 per day	Deptt.
7.	PHED	Hiring of DG Set	Current FY	Current FY	0.8000 per day	Deptt.
8.	RWS&S	Supply of Drinking Water through Tankers	Current FY	Current FY	0.5600 for 5 days	Govt.
9.	RWS&S	Deployment of DG Sets for supply of drinking water through PWS	Current FY	Current FY	2.8448 for 5 days	Govt.
10.	RWS&S	Purchase of Bleaching powder	Current FY	Current FY	1.2355	Govt.
11.	RWS&S	Procurement of HDPE Pipes for PWS to S.Dhamuni & Gulumunda	Current FY	Current FY	5.69913	Govt.

[Source:CDAO/ DDH/ PHED/ RWS&S/ RMC, Rayagada]

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

Sl. No.	Scheme	Possible Activities for DRR
1.	Biju Krushak Kalyan Yojana (BKKY)	<ul style="list-style-type: none"> To provide health security to the farmers and their families. To provide financial support through health and accident insurance.

2.	Gopabandhu Gramin Yojana (Bijli, Sadak & Pani)	<ul style="list-style-type: none"> • Road connectivity. • Water supply. • Installation of critical infrastructures.
3.	Biju Setu Yojana (Rural Bridges)	<ul style="list-style-type: none"> • All weather road connectivity in remote areas. • Infrastructure development.
4.	Mission Shakti	<ul style="list-style-type: none"> • Institution building. • Capacity building for risk reduction.
5.	Integrated Child Protection Scheme (ICPS)	<ul style="list-style-type: none"> • To provide a safe and secure environment for overall development of the children. • Protection of child rights.
6.	Odisha PVTGs Empowerment & Livelihood Improvement Programme (OPELIP)	<ul style="list-style-type: none"> • PVTGs/PTGs Capacity Building. • Institution Building. • Livelihood Improvement & Empowerment.
7.	Odisha Tribal Empowerment & Livelihood Programme Plus (OTELP Plus)	<ul style="list-style-type: none"> • Livelihood support to tribal and vulnerable community. • Creation of durable structures.
8.	DAMAN (Durgama Anchalare Malaria Nirakaran)	<ul style="list-style-type: none"> • Malaria control. • Health safety.
9.	Pradhan Mantri Fasal Bima Yojana (PMFBY)	<ul style="list-style-type: none"> • Crop insurance. • Firming risk coverage in natural calamities.
10.	Pradhan Mantri Gram Sinchai Yojana (PMGSY)	<ul style="list-style-type: none"> • Irrigating the field of farmers and improving water use efficiency. • Enhance crop per drop by implementing water-saving technologies and precision irrigation.
11.	Sansad Adarsh Gram Yojana (SAGY)	<ul style="list-style-type: none"> • Development of model villages. • Social, cultural, economic and infrastructure developments in the villages.
12.	Janashree Vima Yojna	<ul style="list-style-type: none"> • Insurance protection. • Risk transfer.
13.	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	<ul style="list-style-type: none"> • Insurance protection. • Risk transfer.
14.	Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	<ul style="list-style-type: none"> • Insurance protection. • Risk transfer.
15.	Pradhan Mantri Awas Yojana (PMAY) - Housing for all by 2022	<ul style="list-style-type: none"> • Construct disaster resilient houses. • Vulnerable infrastructure risk reduction.
16.	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	<ul style="list-style-type: none"> • Construction of roads in remote areas. • Construction of multi-hazard shelters. • Plantation Activities. • Permanent Livelihood Activities.
17.	National Health Mission (NHM)	<ul style="list-style-type: none"> • Emergency Medical Response. • Ambulances Service. • Mobile Health Facility in Remote Areas.
18.	Pradhan Mantri Gram Sadak Yojana (PMGSY)	<ul style="list-style-type: none"> • Rural Road connectivity to remote and unconnected villages.

19.	Sarva Shiksha Abhiyan (SSA)	<ul style="list-style-type: none"> • Construction of new disaster resilient school buildings. • Retrofitting in existing school buildings. • Disaster preparedness and planning at school.
20.	Swachh Bharat Mission (SBM)	<ul style="list-style-type: none"> • For clean and hygienic environment. • Protection health.
21.	Soil Health Card Scheme	<ul style="list-style-type: none"> • Complete evaluation of the quality of soil. • Corrective measures to improve productivity.
22.	Pradhan Mantri Ujjwala Yojana (PMUY)	<ul style="list-style-type: none"> • Smoke and pollution free environment. • Protection of women health by smoke free cooking.
23.	Disease Control Programme	<ul style="list-style-type: none"> • Routine vaccination of livestock and birds to prevent contagious disease.
24.	Animal Health Camps	<ul style="list-style-type: none"> • Routine animal health camps to increase the health status and immunity of livestock and birds.
25.	Livestock Insurance	<ul style="list-style-type: none"> • To manage the risk and uncertainties by providing protection mechanism to the farmers against any eventual loss of their animals due to death. • To demonstrate the benefit of insurance of livestock to the people.
26.	BGREI-STV (Stress Tolerant Variety)	<ul style="list-style-type: none"> • Paddy-Sahabhazi.
27.	State Plan	<ul style="list-style-type: none"> • Supply of hybrid vegetable mini-kits to farmers. • Implementation of single line trellies in vegetable crops. • Supplying of mango grafts, papaya, drumstick & K. Lime seedlings.
28.	MIDH	<ul style="list-style-type: none"> • Supplying of hybrid vegetable seedlings. • Supplying of loose flower seedlings. • Supplying of sprayers to the farmers in the subsidised rate.
29.	RMCLinkage	<ul style="list-style-type: none"> • Improve producers access and linkage to agriculture markets. • Training & development of marketing functionaries. • Alert farmers through announcement to safeguard agricultural produces. • Arrange trpouline, dories for covering of farmers agricultural produce at the market yard of RMC.
30.	Industrial Safety Projects	<ul style="list-style-type: none"> • Existing systems upgradation in a phase wise emphasizing on risk reduction and to avoid disaster.

[Source: Government Department/ Web Site/ CDVO/ CDAO/ DDH/ RMC]

6.5 Scheme for Legal Services to the victims of disasters through Legal Services Authorities

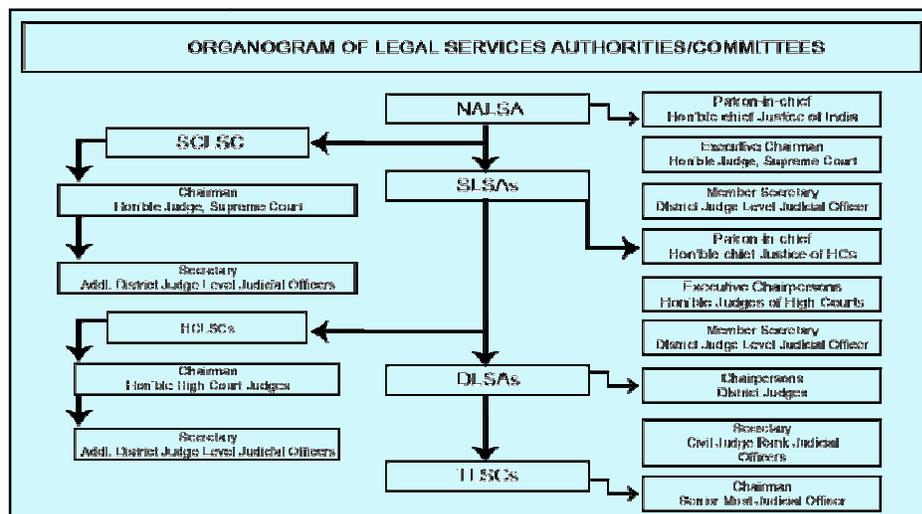
6.5.1 National Legal Services Authority (NALSA)

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.

Figure : 6.1



6.5.2 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 Orissa 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 Department 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, Odisha, 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.

[Source: NALSA & Odisha State Legal Service Web Portal]

(Please refer Figure 7.6 & 7.7 of Volume-II, Page No. 235 & 236 for NDMA and OSDMA directions for inclusion of NALSA & SLASA as Stakeholders in DRM Strategy)



Climate Change Adaptation & Mitigation

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

7.1 Important Greenhouse Gases

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

Table : 7.1

Greenhouse Gas	Global Warming Potential (GWP) over 100 years	% of Total Anthropogenic GHG Emissions (2010)
Carbon dioxide (CO ₂)	1	76%
Methane (CH ₄)	25	16%

Nitrous oxide (N ₂ O)	298	6%
Hydrofluorocarbons (HFCs)	124-14,800	< 2%
Perfluorocarbons (PFCs)	7,390-12,200	< 2%
Sulphur hexafluoride (SF ₆)	22,800	< 2%
Nitrogen trifluoride (NF ₃)	17,200	< 2%

7.2 Important Greenhouse Gases: Carbon Dioxide (CO₂)

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

The most important anthropogenic GHG is carbon dioxide (CO₂). It accounts for around 64% of total radiative forcing due to LLGHGs. Carbon dioxide does not have a specific lifetime because it is continuously cycled between the atmosphere, oceans and land biosphere and its net removal from the atmosphere involves a range of processes with different time scales. CO₂ is primarily emitted as a result of burning of fossil fuels, deforestation and forest degradation and iron and steel production. Oceans and forests are the main sequesters of carbon i.e. sinks that can absorb CO₂ from the atmosphere. Carbon dioxide is the gas to which all other gases are compared when speaking of Global Warming Potential. Emissions of other greenhouse gases can be converted into *CO₂ equivalent emissions*.

Table : 7.2

Sl. No.	Name of the Industry/Plant/Firm	Location	Quantity of CO ₂ emission (PPM)	Ranking as per CO ₂ Emission (in the district)	Other major pollutants emitted (PPM)	Action taken for cutting down emission
-	-	-	-	-	-	-

7.3 Important Greenhouse Gases: Methane (CH₄)

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

The second most significant anthropogenic GHG is methane (CH₄) which contributes to approximately 18% of total radiative forcing due to LLGHGs. Approximately 40% of methane is emitted into the atmosphere by natural sources (i.e. wetlands and termites). About

60% comes from human activities (i.e. cattle breeding, rice agriculture, fossil fuel exploitation, landfills and biomass burning). Methane is mostly removed from the atmosphere by chemical reactions, persisting for about 12 years. Thus, although methane is an important greenhouse gas, its effect is relatively short-lived.

Table : 7.3

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

7.4 Important Greenhouse Gases: Nitrous Oxide (N₂O)

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

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

Table : 7.4

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

7.5 Important Greenhouse Gases: Fluorinated Gases

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

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

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

Table : 7.5

Sl. No.	Name of the Industry/Firm/Plant	Location	Annual émission (In PPM)	Ranking as per flourinatedgas Emission (PPM)	Action taken for cutting down émission
-	-	-	-	-	-

7.6 Important Green House Gases: Chlorofluorocarbons (CFCs)

Chlorofluorocarbons (CFCs) an important Green House Gas contribute about 12% to radiative forcing by long-lived GHGs has not been included in the Kyoto Protocol because they are already regulated under the Montreal Protocol on Substances that Deplete the Ozone Layer which entered into force in 1989.

The Montreal Protocol includes, for example, CFCs which contribute about 12% to total radiative forcing by LLGHGs. CFCs can stay in the atmosphere for more than 1,000 years. CFCs have a Global Warming Potential (GWP) that ranges between 4,750 and 14,400 (over 100 years time span). CFCs are used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants.

Table : 7.6

Sl. No.	Name of the Industry/Firm/Plant	Location	Annual émission (In PPM)	Ranking as per flourinatedgas Emission (PPM)	Action taken for cutting down émission
-	-	-	-	-	-

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

7.7 Green House Gas Sequestration

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

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

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

Table : 7.7

Major Greenhouse Gases Contributors (Anthropogenic) to Climate Change

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

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

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

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

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

Table : 7.8
Details of forest as a major Carbon sink (District)

Reserved Forest / Protected Forest (in Sq. Km.)	Revenue / Village Forest (in Sq. Km.)	Private owned Forests (in Sq. Km.)	Others, if any (in Sq. Km.)	Total (in Sq. Km.)
-	-	-	-	-

7.8 Sectors with High Mitigation Potential

Table : 7.9

Sl. No.	Sectors	Mitigation Options
1.	Energy	<ul style="list-style-type: none"> • Use of renewable heat and power (hydropower, solar, wind, geothermal and bio-energy). • Improved supply and distribution efficiency. • Carbon capture storage (CCS). • Combined heat and power.
2.	Transport	<ul style="list-style-type: none"> • More fuel efficient vehicles. • Use of alternative energy sources (biofuels, cleaner diesel, etc.). • Better land-use and transport planning. • Shift from individual transport to public transport systems. • More efficient driving practices. • Non-motorized transport (cycling, walking).
3.	Industry	<ul style="list-style-type: none"> • Process-specific technologies that improve efficiency and reduce emissions. • Material recycling and substitution.

		<ul style="list-style-type: none"> • Heat and power recovery/cogeneration. • Control of greenhouse gas emissions.
4.	Agriculture	<ul style="list-style-type: none"> • Manure and livestock management to reduce CH₄ emissions. • Improved fertilizer application techniques to reduce N₂O emissions. • Improved crop and grazing land management to increase soil carbon storage. • Restoration of cultivated peaty soils and degraded lands. • Agro-forestry practices.
5.	Forestry	<ul style="list-style-type: none"> • Reduced deforestation. • Afforestation/reforestation. • Forest management. • Tree species improvement to increase biomass productivity and carbon sequestration.
6.	Waste	<ul style="list-style-type: none"> • Landfill methane recovery. • Waste incineration with energy recovery. • Composting of organic waste. • Controlled wastewater treatment. • Recycling and waste minimization. • Biocovers and biofilters to optimize CH₄ oxidation.

7.9 Sector Specific Climate Change Mitigation Projects

Table : 7.10

Sl. No.	Sector	Project Title	Period		Mitigation Targets
			From	To	
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-



Inclusive Disaster Risk Reduction

8.1 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.

8.2 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.

8.3 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.

8.4 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.

8.5 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 : 8.1
Information on PWD

Information on Population Requiring Special Care										
Sl. No.	Block	Gram Panchayat	Village / Wards	Total No. of HHs	Total Population	No. of HHs Having by PWD	No. of Persons with Physical Disability (PWD) per village		No of persons with Mental disability	
							M	F	M	F
1.	Rayagada	28	301	29115	127333	-	1529	-	-	
2.	Kalyansingpur	14	253	15000	63753	-	939	-	-	
3.	Kolnara	17	200	16734	73839	-	915	-	-	
4.	Kashipur	24	417	34580	140633	-	962	-	-	
5.	Gunupur	19	138	17000	76333	-	1258	-	-	
6.	Padmapur	13	124	13404	56459	-	826	-	-	
7.	Gudari	9	161	9773	42737	-	623	-	-	
8.	Ramanaguda	12	119	12876	52632	-	536	-	-	
9.	Bissam Cuttack	21	315	21759	92490	-	1204	-	-	
10.	Muniguda	17	412	22542	93564	-	1074	-	-	
11.	Chandrapur	8	217	8603	41129	-	417	-	-	
12.	Rayagada Municipality	-	24	16362	71208	-	274	-	-	
13.	Gunupur Municipality	-	17	6700	28870	-	420	-	-	
14.	Gudari NAC	-	11	1696	6931	-	87	-	-	
	Total	182	2709	226144	967911	-	11064	-	-	

Table : 8.2
Information on Vulnerable Women and Children

Sl. No.	Block	Gram Panchayat	No. of HHs headed by Women	Child Population per village		No. of Widow (per village)/ Block	No. of Orphans per village	
				0-5 Years	5-14 Years		B	G
1.	Rayagada	28	2290	7145	7181	6196	72	71
2.	Kalyansingpur	14	852	385	594	4192	5	4
3.	Kolnara	17	3142	7530	7775	4181	32	38
4.	Kashipur	24	5828	45	150	6111	4	5
5.	Gunupur	19	2994	7524	5462	3570	11	12
6.	Padmapur	13	1070	6273	1243	2542	2	3
7.	Gudari	9	8025	5900	6524	2116	1	3
8.	Ramanaguda	12	1261	4987	6672	2793	0	0
9.	Bissam Cuttack	21	1034	10347	11687	4280	30	34
10.	Muniguda	17	1848	11602	5029	3618	17	13
11.	Chandrapur	8	753	5557	973	1291	0	0
12.	Rayagada Municipality	-	482	102	232	3204	18	16
13.	Gunupur Municipality	-	286	1464	2830	1478	2	3
14.	Gudari NAC	-	1650	737	515	145	1	0
	Total	182	31515	69598	56867	45717	195	202

Table : 8.3
Information on people needing special care (Aged and Pregnant Women)

Information on Population Requiring Special Care								
Sl. No.	Block	Gram Panchayat	Village/ Wards	Total No. of HHs	Total Population	No. of Aged Persons (60 and above) per village		No. of Pregnant and lactating mothers per village during the information collection
						M	F	
1.	Rayagada	28	301	29115	127333	9935		2523
2.	Kalyansingpur	14	253	15000	63753	3543		1519
3.	Kolnara	17	200	16734	73839	6161		1393
4.	Kashipur	24	417	34580	140633	12705		4002
5.	Gunupur	19	138	17000	76333	6023		1552
6.	Padmapur	13	124	13404	56459	5581		1275
7.	Gudari	9	161	9773	42737	4121		1140
8.	Ramanaguda	12	119	12876	52632	5743		1031
9.	Bissam Cuttack	21	315	21759	92490	9453		2086
10.	Muniguda	17	412	22542	93564	8992		2435
11.	Chandrapur	8	217	8603	41129	4731		1200
12.	Rayagada Municipality	-	24	16362	71208	4201		822
13.	Gunupur Municipality	-	17	6700	28870	1866		126
14.	Gudari NAC	-	11	1696	6931	772		114
	Total	182	2709	226144	967911	83827		21218

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.



Safety of Schools & Child Care Institutions

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

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

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

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

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

State & District Level	School Level
<ul style="list-style-type: none"> • Policy for safety audits in all schools • 'Stability certificate' by Government-certified engineer. • Manual for fire safety procedures and other safety precautions. 	<ul style="list-style-type: none"> • Schools must take appropriate safety measures and an emergency response plan that delineates staff responsibilities, communication modes, and training and updating procedures for all members of the faculty, staff and students.

<ul style="list-style-type: none"> • The National Building Code of India, 2005, to construct fire-safe buildings. (Revised 2016). 	<ul style="list-style-type: none"> • Fire insurance coverage should be made mandatory for all schools. • Ensuring that the kitchen in the precincts of the school has adequate safety mechanisms.
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[Ref.: Fire Safety Measures in Schools (Section 3.1 p-23 / Training of School Teachers & Other Staff (Section 3.1 p-25)/School Building Specifications (Section 3.1 p-27) Clearance & Certificates (Section 3.1 p-29) SC. Judgement on WP(C) 483/2004]

9.2 Guidelines on School Safety Policy, 2016- NDMA

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

Vision

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

Approach and Objectives

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

Applicability

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

All hazard approach

- School Safety efforts needs to take cognizance of all kinds of hazards that may affect the wellbeing of children.

- Hazards include structural and non-structural factors.
- Structural factors include dilapidated buildings, poorly designed structures, faulty construction, poorly maintained infrastructures, loose building elements, etc.
- Non-Structural factors include loosely placed heavy objects such as almirahs, infestation of the campus by snakes and any other pests, broken or no boundary walls, uneven flooring, blocked evacuation routes, poorly designed and placed furniture that may cause accidents and injury, inadequate sanitation facilities, etc.

Right to Education Act, 2009

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

Key Action Areas

1. Institutional strengthening at the State & District levels

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

2. Planning for Safety

- Structural Measures (including siting, design and detailing for structural safety).
- Non-structural Measures.
- Preparation & implementation of School Disaster Management Plan.
- Leveraging existing flagship programmes to make school campus safer.

3. Capacity building for safe schools

- Training for students and school staff.
- Specialized training and skill building of Education officers, representatives of SCERT and DIET, SDMA, DDMA, etc on school safety.

- Mock Drills.
- Familiarization Exercise (FAMEX) Programmes.

4. Disaster Management in Core Curriculum

5. Regular monitoring of risk and revision of School Safety Plans (including Safety Audits & Availability of Emergency Equipment).

9.3 Category & Type of Schools

Name of the Block	Government Schools				Government Aided Schools		Private Schools	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				
Rayagada	219	0	24	0	0	3	8	6
Kalyansingpur	167	0	14	0	0	0	3	0
Kolnara	151	0	15	0	0	1	4	1
Kashipur	275	0	15	0	0	4	6	5
Gunupur	149	0	18	0	0	5	3	0
Padmapur	81	0	13	0	0	3	7	0
Gudari	107	0	9	0	0	3	0	0
Ramanaguda	108	0	14	0	0	1	5	0
Bissam Cuttack	197	0	20	0	0	2	9	3
Muniguda	194	0	14	0	0	4	10	0
Chandrapur	103	0	13	0	0	0	0	0
Rayagada Municipality	0	25	0	5	0	0	19	6

Gunupur Municipality	0	20	0	4	0	0	9	2
Gudari NAC	0	7	0	3	1	0	3	0
Total	1751	52	169	12	1	26	86	23

[Source: DEO, Rayagada]

9.4 Category & Type of Students

Name of the Block	Government Schools				Government Aided Schools		Private Schools	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				
Rayagada	11226	0	7943	0	0	849	577	1917
Kalyansingpur	7784	0	3842	0	0	0	127	0
Kolnara	8892	0	5518	0	0	157	250	354
Kashipur	17469	0	4717	0	0	587	271	922
Gunupur	6398	0	3527	0	0	432	278	0
Padmapur	6338	0	3475	0	0	689	1212	0
Gudari	4886	0	1016	0	0	445	0	0
Ramanaguda	6373	0	3747	0	0	128	428	0
Bissam Cuttack	9547	0	4336	0	0	390	529	1304
Muniguda	11200	0	2947	0	0	557	900	0
Chandrapur	4089	0	2229	0	0	0	0	0

Rayagada Municipality	0	2995	0	2634	0	0	3736	2096
Gunupur Municipality	0	961	0	1122	0	0	1544	1021
Gudari NAC	0	519	0	1058	83	0	353	0
Total	94202	4475	43297	4814	83	4234	10205	7614

[Source: DEO, Rayagada]

9.5 School Safety Advisory Committee of Rayagada District

1. Date of Formation : 27-11-2018
2. Institutional Architecture :

Sl. No.	Name & Designation	ContactNo.	Email ID	Remarks
1.	Collector & District Magistrate, Chairperson	-	-	-
2.	Superintendent of Police, Co-Chairperson	-	-	-
3.	District Fire Officer, Member	-	-	-
4.	District Welfare Officer, Member	-	-	-
5.	District Social Welfare Officer, Member	-	-	-
6.	Chief District Medical Officer, Member	-	-	-
7.	Executive Engineer, RWS&S/PWD, Member	-	-	-
8.	District Emergency Officer, Member	-	-	-
9.	Panchayat Raj Officer, Member	-	-	-

10.	Principal, DIET, Member	-	-	-
11.	BEO, District Headquarter, Member	-	-	-
12.	2 NGO Personnel (Having experience in Disaster Management to be nominated by the Collector), Member	-	-	-
13.	District Project Coordinator, SSA, Member	-	-	-
14.	Sri Purn Chandra Bariha, OES-I District Education Officer, Nodal Officer & Member Convener	9437354618	deorayagada27 @ gmail.com	-

9.6 Details of School Safety in the District

Sl. No.	Activity	Total School	Achieved												
			Rayagada	Kalyansingpur	Kolnara	Kashipur	Gunupur	Padmapur	Gudari	Ramanaguda	Bissam Cuttaek	Muniguda	Chandrapur	Total	
1.	Schools having School Safety Advisory Committee (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-	-
2.	Schools having School Disaster management Plan (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-	-
3.	Schools having conducted Safety Audits (Structural) (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-	-
b.	Safety Audits (Non-Structural) (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-	-

4.	Schools having conducted Annual Mock Drills (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
5.	Schools Having Fire Extinguisher (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
6.	Schools Adhering to safety norms in storing inflammable & Toxic Material (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
7.	Schools confirming safety standards as per local building bye-laws (Latest) (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
8.	Schools having issued Recognition certificate under sub Rule(4)-Rule 15 of RTE rules 2010 (only to schools that comply with Structural safety norms) (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
9.	Schools where students & teachers undergo regular training on School Safety & Disaster Preparedness (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
10.	Schools where disaster management is being taught as part of the curriculum (Number)	2120	-	-	-	-	-	-	-	-	-	-	-	-
11.	Awareness Programme on School Safety	2120	-	-	-	-	-	-	-	-	-	-	-	-

9.7 Disaster Management Education (School Safety and School Disaster Preparedness)

Sl. No.	Name of the Programme	No. of Schools, Colleges and Other Educational institutions to be covered during the year	Time Line	Remarks
1.	Awareness generation and Mock Drills on Fire/ Earth quake Rescue	100	March, 2022	Fire Service & ODRAF
2.	Preparation of School Disaster Management Plan	2120	March, 2022	BEO & HMs Concerned

9.8 Details of Child Care Institutions

Sl. No.	Block	Name and Address of the Organization	Boys	Girls	Total No of Children	Name and Contact no. of the Shift-in-Charge	Available Fire Safety Equipments (Fire Extinguisher, Alarm)	No. of Staff Trained on Fire Safety Equipments	Name the nearby open space for evacuation	Distance of Open space from the Centre in Meters	Alternative Shelter/s Identified
1.	Rayagada	Assist Children Home, Rayagada	0	44	44	T. Ramanjulu 9437432071 7008501181	Yes	2	Open space back to CCI	50	Govt. ITI, Rayagada
2.	Rayagada	Seva Samaj, Rayagada Branch	0	39	39	Rajeswari Dalai 9437373032 6371856932	Yes	5	GCD HS	300	GCD HS, Rayagada
3.	Padmapur	Seva Samaj, Jabarguda Branch	0	39	39				Open field in front of CCI	50	Educational Complex, Jabarguda

4.	Gunupur	Seva Samaj, Gunupur Branch	0	38	38				Open field in front of CCI	50	Govt. Girls HS, Gunupur
5.	Gunupur	Balniketan Children Home, Limamedda	46	0	46	Akshaya Ranjan Mohanty 9437201929 8917335703	Yes	2	Open space inside the campus	50	Primary School, Limamedda
		Total	46	160	206						

[Source: DCPO, Rayagada]



Chemical (Industrial), Nuclear & Radiological Disaster

A. Chemical (Industrial) Disaster

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

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

assess the potential of chemical emergencies and develop tools for emergency planning and response to minimise the damage in case of any eventuality.

Odisha is also an Industrial State and many Large, Medium and Small-Scale Industries are operating in the state. Many large industries are operating in the districts like Jagatsinghpur, Angul, Jhasrsuguda, Sambalpur and Rayagada and many medium and small industries are operating in other districts of the State. The District administration of the industrial district must be prepared to face any kind of Chemical (Industrial) disasters and always be prepared with the Off-site Emergency Plan of the District. The Off-site emergency plan needs to be updated on regular frequency.

Thus, it is highly essentials to take all the preparedness measures and minimize the risk of any Chemical (Industrial) disasters in the industrial districts of the State. The following information are required to be fulfilled and be updated every year in the District Disaster Management Plan of the District.

10.1 Factories or Storage Unit Details of the District

Table : 10.1

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
JKPM	Large	Paper & Pulp Production	Jaykaypur, Rayagada	-	-	-	-	-
HPCL	Large	LPG Bottling Plant	Pitamahal, Rayagada	-	-	-	-	-
IMFA	Large	Ferro Alloys	Therubali, Kolnara	-	-	-	-	-
UAIL	Large	Alumina Production	Doraguda Kashipur	-	-	-	-	-
Hanuman Oxygen	Midium	Oxygen Refilling	Rayagada	-	-	-	-	-
Vardhaman Chemical	Midium	Solvent Mrf.	Pitamahal, Rayagada	-	-	-	-	-
Raja Alum	Small	Alum	Rayagada	-	-	-	-	-
Konark Alum	Small	Alum	Kothapeta, Rayagada	-	-	-	-	-
Fire Water Distillery	Small	Fire Water Distillery Mrf.	Komtlapeta, Rayagada	-	-	-	-	-

10.2 Hazardous Chemical Storage Details

Table : 10.2

Hazardous Chemical Storage Points Details											
Organisation Name	Hazardous Chemicals/ Substances Name	Chemicals Type (Flammable/Reactive/ Explosive/)	Quantity (Volumetric Capacity/Max Qty can be Stored/	(Under Ground/ Submerged/ On the 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)	Downwind Distance	Total Number of People in the Vulnerability Zone
JKPM	-	-	-	-	-	-	-	YES/ NO	-	-	-
HPCL	-	-	-	-	-	-	-	YES/ NO	-	-	-
IMFA	-	-	-	-	-	-	-	YES/ NO	-	-	-
UAIL	-	-	-	-	-	-	-	YES/ NO	-	-	-
Hanuman Oxygen	-	-	-	-	-	-	-	YES/ NO	-	-	-
Vardhaman Chemical	-	-	-	-	-	-	-	YES/ NO	-	-	-
Raja Alum	-	-	-	-	-	-	-	YES/ NO	-	-	-
Konark Alum	-	-	-	-	-	-	-	YES/ NO	-	-	-
Fire Water Distillery	-	-	-	-	-	-	-	YES/ NO	-	-	-

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

Table : 10.3

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
JKPM	-	-	Jaykaypur, Rayagada	-	-	-	-	-

HPCL	-	-	Pitamahal, Rayagada	-	-	-	-	-
IMFA	-	-	Therubali, Kolnara	-	-	-	-	-
UAIL	-	-	Doraguda Kashipur	-	-	-	-	-
Hanuman Oxygen	-	-	Rayagada	-	-	-	-	-
Vardhaman Chemical	-	-	Pitamahal, Rayagada	-	-	-	-	-
Raja Alum	-	-	Rayagada	-	-	-	-	-
Konark Alum	-	-	Kothapeta, Rayagada	-	-	-	-	-
Fire Water Distillery	-	-	Komtlapeta, Rayagada	-	-	-	-	-

10.4 Statutory Compliance of the Factories/Industries

Table : 10.4

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

10.5 Nearest Hospital Details of the Factories/Industrial Units

Table : 10.5

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
JKPM	-	-	-	-	-	-	-	-	-	ICU
HPCL	-	-	-	-	-	-	-	-	-	BURN WARD
IMFA	-	-	-	-	-	-	-	-	-	VENTILATOR
UAIL	-	-	-	-	-	-	-	-	-	AMBULANCE
Hanuman Oxygen	-	-	-	-	-	-	-	-	-	-
Vardhaman Chemical	-	-	-	-	-	-	-	-	-	-
Raja Alum	-	-	-	-	-	-	-	-	-	-
Konark Alum	-	-	-	-	-	-	-	-	-	-
Fire Water Distillery	-	-	-	-	-	-	-	-	-	-

10.6 Nearest Fire Station of the Factories/Industries

Table : 10.6

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
JKPM	-	-	-	-	-	-	-	-	-	-	Fire Tender/ Capacity
HPCL	-	-	-	-	-	-	-	-	-	-	Foam Materials
IMFA	-	-	-	-	-	-	-	-	-	-	Hoods

UAIL	-	-	-	-	-	-	-	-	-	-	-
Hanuman Oxygen	-	-	-	-	-	-	-	-	-	-	-
Vardhaman Chemical	-	-	-	-	-	-	-	-	-	-	-
Raja Alum	-	-	-	-	-	-	-	-	-	-	-
Konark Alum	-	-	-	-	-	-	-	-	-	-	-
Fire Water Distillery	-	-	-	-	-	-	-	-	-	-	-

10.7 Stakeholders to be informed in case of an Industrial Accident

Table : 10.7

Designation	Organisation/ Department name	Name	Mobile Number	Office Phone	Email
Controlling Officer	SRC	-	-	-	-
Nodal Officer	OSDMA	-	-	-	-
Nodal Officer	District Administration (Collector, Emergency Officer, ADM)	-	-	-	-
Supervising Officer	Home Department	-	-	-	-
Nodal Officer	State Pollution Control Board	-	-	-	-
Nodal Officer	RTO	-	-	-	-
Nodal Officer	Department of Factories and Boiler	-	-	-	-
Nodal Officer	CSO	-	-	-	-
Nodal Officer	NDRF	-	-	-	-
Nodal Officer	ODRAF	-	-	-	-
Nodal Officer	NGO	-	-	-	-
Nodal Officer	FIRE	-	-	-	-
Nodal Officer	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.

10.8 Hospital Preparedness

Table : 10.7

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
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

10.9 Specialized Response Forces

Table : 10.8

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
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

10.10 Mock Exercises on Nuclear/ Radiological Disaster

Table : 10.9

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



Biological Disaster and Public Health in Emergencies

11.1 Biological Disaster Management & Medical Preparedness

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

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

Table : 11.1
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)	6856235603 9439983501
2.	Bio Terrorism/ War	Home Department	SP	6856222304 9437297600
3.	Animal Health Disaster	F&ARD Department	CDVO (District)	6856222125 9437414616
4.	Agro -Terrorism	A&FE Department	CDAO	6856222148 9861371357

11.2 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.

11.3 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 : 11.2
Crisis Management Committee

Sl.	Member	Dept./Instt.	Contact Details
-	-	-	-
-	-	-	-
-	-	-	-

Table : 11.3
Task Force

Sl.	Member	Dept./Instt.	Contact Details
-	-	-	-
-	-	-	-
-	-	-	-

Table : 11.4
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.

Table : 11.5
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
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

Table : 11.6
Collaborative Institutions

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

11.4 Preventive Measures

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

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

11.4.1 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 : 11.7
Important/Critical Infrastructure

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

11.4.2 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.

Table : 11.8
Infrastructure that can be used as quarantine centres

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

11.5 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.

11.6 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.

11.6.1 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.

11.7 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.

11.8 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.

11.9 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 eyeshields, 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 NHM by GoI are steps in the right direction to strengthen medical care facilities in rural areas. NHM initiatives will be expedited to reach every nook and corner of the country.

Table : 11.9

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. Stock 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 : 11.10
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 : 11.11
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 disaster 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.

11.10 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.

11.11 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 : 11.12
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 : 11.13
Collaborative Institutions

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

11.12 Community Based Disaster Psychosocial Care

The psychosocial aspects of disasters on human beings have been acknowledged as an international agenda (WHO, 1992). However, in India, the psychosocial aspects have never been emphasized until very recently after tsunami, 2004. The Bhopal gas tragedy (1984) was the most important disaster to draw the national attention due to its severe impact and the sensitivity of the politico-economic issues involved. The psychosocial impact was studied systematically although intervention programmes were more of psychiatric in nature. Marathwada 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 :11.14
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-11.15

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

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

Table : 11.16

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

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

Table : 11.17

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, heroism, Solidarity, Optimism
Honeymoon	2 weeks to 3 to 6 months	Great solidarity, Eagerness to rebuild, Sharing of common experience
Disillusionment	2 months 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

11.13 Coping with Loss & Circles of Support

It is very clear that the usual social support systems are eroded after a disaster. The family and the neighbourhood no more exist as a functional unit. The tertiary level of support system exists to some extent in terms of larger community, government and other

external agencies. So, it is essential to pull these external resources (out of the affected community) for rebuilding the social support system and normalize the life of the survivors. At the third level the government and external agencies take the main role to rebuild the entire support system. Apart from the government agencies a lot of other players also come to the forefront. These include:

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

11.14 Needs of More Vulnerable Groups

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

Table : 11.18

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

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

The following aspects and 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

11.15 Principles of Psychosocial Support

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

11.16 Basic Techniques of Disaster Psychosocial Care

- Ventilation: ventilation is a process to help the disaster survivors in expressing their thoughts, feelings and emotions related to the disaster and the resulting living conditions.
- Empathy: “looking at the event from the other person’s perspective and trying to realise the trauma of the other person by keeping himself/herself in that situation”. This skill of developing empathetic attitude towards survivors comes through regular habit of active listening of the survivor.
- Active listening Active listening is an important skill to facilitate ventilation and develop empathy, which in turn facilitates 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 turn 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.

11.17 Understanding of Stress Symptoms & Management

The concept of stress was first used by Selye (1956) in his biological stress theory. It was defined as a set of specific physiological responses to environmental stimuli, e.g. chronic fatigue, nervous breakdown, physical damage etc.

The important role of psychological factors remains in understanding the occurrence and modification of stress response.

Table : 11.19

Emotional	Interpersonal	Sensational	Biological	Behavioural	Cognitive
<ul style="list-style-type: none"> • Anxiety • Guilt • Embarrassment • Depression • Hurt • Jealousy • Feel like dying • Cry frequently • Moody 	<ul style="list-style-type: none"> • Cannot keep relationships • Suspicious • Gossip • Competitive • Withdraw • Fearful and unassertive • Aggressive 	<ul style="list-style-type: none"> • Heart rate • Headaches • Nausea • Aches and pain • Tremble • Fainting • Numbness • Dry mouth • Stomach cramps • Sweaty • Indigestion 	<ul style="list-style-type: none"> • Digestion problems • Blood pressure • Heart problems • Tiredness • Allergies • Low immunity • Mental problems 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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.

Table : 11.20
Diverse Stress Responses

Cognitive Responses	Emotional Responses	Self-image	Psychosomatic/ Physiological Responses
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Feelings of deprivation, guilt, anxiety, tension, aggression, irritation, worry, sadness, hopelessness and maladjustment. 	<ul style="list-style-type: none"> • Low self confidence • Identity problem • Depression & Helplessness 	<ul style="list-style-type: none"> • Headache & Body Ache • Muscular tension and pain • Gastrointestinal disorders/low appetite • Sleeplessness • Difficulty in breathing • High Blood Pressure (Source: Zimbardo, 1979) • Vague pain in

performance • Less ability to utilise relevant information			different parts of the body • Increased heart beat & palpitation • Sweating in palms and feet • Shaking of the body & Fatigue • Butterfly sensation in the stomach
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**Table : 11.21
Relaxation Exercises**

Abdominal Breathing	<ul style="list-style-type: none"> • Sit comfortably • Close your eyes • Put one hand on the abdomen • Focus on your breathing and try and see that you are breathing from your abdomen rather than your chest • Concentrate on the fact that your stomach is rising as you breath in and falling as you breath out
Count Breathing	<ul style="list-style-type: none"> • Sit comfortably • Close your eyes • Count 1-2 two as you inhale • Release your breath slowly counting 1-2-3-4 (double the count of your inhalation) • Practice this till you feel relaxed
Nostril Breathing	<ul style="list-style-type: none"> • Inhale naturally and then let out with a whooshing sound. Hold for some time and then let out again • Breathe through one nostril and breathe out through the other one • Combine breathing with visualization that you are getting energy and refreshment • Listening to some music while practicing these will enhance positive impact of the techniques
Free Meditation	<ul style="list-style-type: none"> • Sit comfortably or lie down and close your eyes • Put on some music and listen to the music • Do not try to think of anything, just concentrate on your breathing • If any thoughts come in do not try to control them or force them out, instead spend time on them and let them go as they come • Do it initially for about 5 minutes and slowly as you become better at it go on increasing the time period to about 20 –25 minutes and it would prove to be very relaxing
Candle Meditation	<ul style="list-style-type: none"> • Sit comfortably • Light a candle or a lamp in front of you • Concentrate on the flame • Spend time just looking at the flame glowing and flickering • If you feel after some time close your eyes and look at the image in your mind • Slowly open your eyes after you are completely at ease • Do it initially for about 5 minutes and slowly as you become better at it go on increasing the time period to about 20 –25 minutes. It would

	prove to be very relaxing
Relaxation	<ul style="list-style-type: none"> • Lie down on the ground • Slowly move from your feet to your head saying the following to yourself

Table: 11.22
Disaster Psychosocial Referrals

Within Caregiver's Control if the Survivor	Referral if the Survivor
<ul style="list-style-type: none"> • Is aware of who s/he is, where s/he is, and what has happened with him/her. • Is only slightly confused or dazed or show slight difficulty in thinking and decision making or finding difficulty in concentrating 	<ul style="list-style-type: none"> • Is unable to tell/recall his/her name, name of the place and what has happened to him/her in past 24 hours • Complains about what is happening with him/her
Behaviour	
Is restless, mildly agitated and excited	Is apathetic, immobile and unable to move around
<ul style="list-style-type: none"> • Has sleep difficulty and decreased appetite • Sad, rigid, clenches the fists 	<ul style="list-style-type: none"> • Is withdrawn and mutilates himself/herself, does not take care of self • Violent and causes harm to others • Uses alcohol or drugs • Repeats ritualistic acts as compulsions
Emotions	
Within Care giver's Control if the Survivor	Consider Referral if the Survivor
<ul style="list-style-type: none"> • Is crying and weeping consistently by reiterating about the incident • Has blunt emotions, is numb and hardly reacts correctly to his/her environment • Easily irritated and angered over trivial issues • Shows high spirits or laugh excessively • Very quiet with no emotions 	<ul style="list-style-type: none"> • Is unable to be aroused and is completely withdrawn • Is excessively emotional and shows inappropriate emotions • Is excessively happy, or sad and depressed
Perception	
Has all senses intact and has no perceptual disturbance	Hears voices in absence of the actual living organism
<ul style="list-style-type: none"> • Like seeing the ghosts of those expired 	<ul style="list-style-type: none"> • Sees things in absence of any living organisms' existence • Has complaints about vague bodily sensations • Takes a constant peculiar body position for days together
Within Care giver's Control if the Survivor	Consider Referral if the Survivor
<ul style="list-style-type: none"> • Talks excessively about the disaster 	<ul style="list-style-type: none"> • Is talking irrelevant

<ul style="list-style-type: none"> • Refuse to talk much • Has rapid or stammered speech 	<ul style="list-style-type: none"> • Shows overflowing of incoherent speech • Does not talk at all for days together
Thought	
<p>Has a feeling of despair and worthlessness</p> <ul style="list-style-type: none"> • 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 	<p>Is excessively preoccupied with one idea or thought</p> <ul style="list-style-type: none"> • 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

11.18 Ethics & Confidentiality

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



Capacity Building Measures

12.1 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.

12.2 Capacity Building of Stakeholders

A capacity building plan caters the functional responsibilities of the stakeholders in incidence management. Therefore, one of the most important tasks of the DDMA is to facilitate training and capacity building programmes of the Government Officials, PRI Members, Community Members, Volunteers and other stakeholders to make them more skilled and foster preparedness to combat any disaster. The list of training programmes to be organised for different stakeholders are as follows.

Table : 12.1
List of Training Programmes for the Stakeholders

Sl. No.	Name of the Course/ Training Programme	Participants	Duration of the Training Programme	Month of Organization	To be Organized by
1.	Orientation training programme on disaster management	ADM, Sub-Collector, All BDOs, Tahasildars, Head of line departments, Police & Fire Personnel.	1/2 Day	January	DDMA

2.	Hospital preparedness, mass causality management and hospital management plan	Doctors and Hospital Administrators	2 Days	February	CDM&PHO
3.	Training programme on heat wave preparedness	All BDOs/ EE, RWS&S, CDMO, CDVO, NGOs	1 Day	February	DDMA
4.	Training programme on treating heat wave related health issues	Doctors and Paramedical Staff/ ANMs	1 Day	February	CDM&PHO
5.	Mass Casualty Management.	Para Medics/Police/ RPF/Home Guard/Fire and Civil Defense/ Railway Officials	1 Day	March	DDMA
6.	Earth quake resistant construction	Asst. Engineers & JEs	1 Day	April	PWD/RWD
7.	Post disaster damage assessment	AEs of all Blocks and line departments	1 Day	April	DDMA
8.	GIS mapping of utilities	Block Computer Programmers, Line Department MIS officials	1 Day	May	DRDA
9.	Public health in emergencies, safe drinking water and sanitation	All BDOs, Block and district level officials of PHED/ RWS&S	1 Day	May	CDM&PHO
10.	Training of teachers on school safety including DM plan and conduct of Mock Drills	Principal/ Head Masters of all Govt. & Private Institutions	1 Day	June	DEO
11.	Role of PRIs and ULBs in disaster management.	Members of ZP and ULBs, Chairman & Vice- Chairman of PS.	1 Day	October	DDMA
12.	Block level training programmes on role of PRIs in disaster management	Sarpanchs & PS Members	1 Day	October	BDOs
13.	Role of NGOs/VOs/CBOs in disaster management.	District and block level NGOs/ VOs involved with administration in disaster management	1 Day	November	DDMA
14.	Training of ZKSS and BKSS members	ZKSS and BKSS Members	1 Day	November	District Culture

	on basics of disaster management and creating community level awareness for dos and don'ts related to common disasters.				Officer
15.	Search & rescue and safe evacuation.	Civil Defense Volunteers, NSS, NYK Volunteers, NCC	5 Days	December	Commandant of ODRAF unit
16.	Role of Media in Disaster Management	Media Personal	1 Day	December	DI&PRO

12.3 District/ Block level Mock Drills

Mock drills are to be organized at district and block locations involving different stakeholders and institutions to assess capacity and preparedness to face certain disaster. The recommendations and findings from the Mock Drill exercises will be incorporated in the next updation of DDMP. Proposed Mock Drills, CAP & FAMEX Programmes at the district and block locations are as follows:

Table : 12.2

Sl. No.	Type of Mock Drill	Officials/ Institutions to be involved	Month/ Date	Remarks
1.	Flood	DLOs, BLOs, High School, College Students, CSOs, NGOs, Fire Service, ODRAF, NCC, YRC Volunteers, etc	June, 19 th	Awareness and Capacity Building
2.	Fire/ Forest Fire	High School, College Students, Forest Service Personnel/ Fire Service Personnel/ VSSs/ VOs	November-January	Awareness and Capacity Building
3.	Industrial Accidents/ Industry Specific Mock drills	Industrial Units, F&B, DLO, Fire Service Personnel	Twice in a Year	Safety Check and Awareness
4.	Crowd Management	Police Personnel & Festival Organisation Committees, Govt. Officials, Volunteers, NGOs, CSOs	July, September, November	Awareness & Safety Check
5.	Educational Institution Safety	Teaching and Non-Teaching Staffs, Students, BEO, Fire Service Personnel, etc.	Throughout the Year	Awareness Building

6.	Hospital Safety	Doctors, Medical Staffs Fire Service Personnel, etc.	Twice in a Year	Awareness and Hospital Safety Check
7.	FAMEX/CAP	Community, Students, AWW, ASHA, Teachers, Institutions, etc of a Village	As per the Calendar	Awareness Generation for DRR

12.4 Preparation of Village Disaster Management Plans (VDMPs)

The State Executive Committee (SEC) in its meeting held on 05-01-2017 has been approved for preparation of VDMPs for Community Capacity Building (CCB) and Community Based Disaster Management (CBDM) in the disaster prone villages. The Village Disaster Management Committee (VDMC) and Task Forces at village level are to be formed and capacitate them to work for disaster management to minimise the loss of life and property of the target community.

**Table : 12.3
Preparation of Village Disaster Management Plans**

Sl. No.	Block Name	No. of GPs to be covered during 2021-22	No. of vulnerable villages to be covered during 2021-22	No. of VDMC and task force member to be oriented	No. NGOs to be involved in the process	Time Line
1.	Rayagada	18	120	1800	2	March, 2022
2.	Kalyansingpur	13	60	900	1	March, 2022
3.	Kolnara	8	50	750	1	March, 2022
4.	Kashipur	10	50	750	1	March, 2022
5.	Gunupur	17	100	1500	1	March, 2022
6.	Padmapur	8	70	1050	1	March, 2022

7.	Gudari	7	70	1050	1	March, 2022
8.	Ramanaguda	10	60	900	1	March, 2022
9.	Bissam Cuttack	8	45	675	1	March, 2022
10.	Muniguda	10	40	600	1	March, 2022
11.	Chandrapur	5	35	525	1	March, 2022
	Total	114	700	10500	12	March, 2022

12.5 Capacity Building of Flood Shelter Maintenance & Management Committee (FSMMC) and Task Force Members (TFM)

FSMMC and TFM members will be given training from time to time to update their knowledge and skills on shelter management, equipment management and disaster management.

Table : 12.4
Capacity building of FSMMC & TFM

Sl. No.	Name of the Training Programme	Total No. of Persons to be trained	No. of Training Programmes to be organized	Time Line
1.	Basic orientation of FSMMC	60	3	March, 2022
2.	Training of task force members on search & rescue and first aid	60	3	March, 2022
3.	Disaster and shelter management skills, record keeping procedures	60	3	March, 2022

12.6 Shelter Level Mock Drills

Mock drills and operations will be organized at shelter level at different locations involving community to aware them preparedness in disaster management.

Table : 12.5
Mock Drills at Shelter Level

Sl. No.	Type	No. of Flood Shelters to be covered	No. of villages to be covered.	Month/Date
1.	Flood Rescue	3	30	June, 19 th



Preparedness

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

13.1 Relief Lines: District to Blocks

Table : 13.1

Sl. No.	Name of the Road		Type of Road & Length	Vulnerability of the Route (Description of the Vulnerability)	Coverage (Blocks)
	From District	To Block			
1.	Rayagada Hqrs.	Kalyansingpur Hqrs.	SH, 48 Kms.	River Bridge near JK Pur	Rayagada
2.	Rayagada Hqrs.	Kolnara Hqrs.	NH, 15 Kms.	River Bridge near JK Pur	Rayagada
3.	Rayagada Hqrs.	Kashipur Hqrs.	SH, 80 Kms.	Ghat Road, River Bridges, Culverts, etc.	Rayagada
4.	Rayagada Hqrs.	Gunupur Hqrs.	SH, 80 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara, Ramanaguda
5.	Rayagada Hqrs.	Padmapur Hqrs.	NH, 72 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara, Ramanaguda
6.	Rayagada Hqrs.	Gudari Hqrs.	SH, 92 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara, Ramanaguda

7.	Rayagada Hqrs.	Ramanaguda Hqrs.	NH, 48 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara
8.	Rayagada Hqrs.	Bissam Cuttack Hqrs.	NH, 48 Kms.	2 No. of Bridges	Rayagada & Kolnara
9.	Rayagada Hqrs.	Muniguda Hqrs.	NH, 65 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara, Bissam Cuttack
10.	Rayagada Hqrs.	Chandrapur Hqrs.	SH, 120 Kms.	Ghat Road, River Bridges, Culverts, etc.	Kolnara, Bissam Cuttack, Muniguda

13.2 Relief Line Channels: Block to GPs & Villages

Table : 13.2

Sl. No.	Name of the Road		Type of Road & Length	Vulnerability of the Route (Description of Vulnerability)	Coverage (Villages)
	From Block	To GP			
1.	Rayagada Hqrs.	28	-	-	301
2.	Kalyansingpur Hqrs.	14	-	-	253
3.	Kolnara Hqrs.	17	-	-	200
4.	Kashipur Hqrs.	24	-	-	417
5.	Gunupur Hqrs.	19	-	-	138
6.	Padmapur Hqrs.	13	-	-	124
7.	Gudari Hqrs.	9	-	-	161
8.	Ramanaguda Hqrs.	12	-	-	119

9.	Bissam Cuttack Hqrs.	Kankubadi	SH (5 km)	-	10 (4861 People)
		Chatikona	SH (9 km)	-	17 (7950 People)
		Bhatapur	SH (21.2 km)	-	10 (3779 People)
		Kurli	SH & PMGSY (19.5 km)	-	15 (5451 People)
		Jhigidi	PMGSY (6 km)	-	11 (4878 People)
		Thuapadi	PMGSY (7 km)	-	8 (3385 People)
		Sahada	SH & PMGSY (16 km)	-	15 (3756 People)
		Raskola	SH & PMGSY (20 km)	-	21 (6101 People)
		Konabai	PMGSY (23 km)	-	15 (3420 People)
		K.Dhamuni	SH (15 km)	-	19 (5764 People)
		Durgi	SH (21 km)	-	20 (6030 People)
		Dumburuneli	PMGSY (22 km)	-	14 (3794 People)
		Chanchadaguda	SH (3 km)	-	19 (3374 People)
		Kiribiri	SH (7 km)	-	10 (2789 People)
		Dukum	PMGSY (12 km)	-	29 (5490 People)
		B.Cuttack	SH (1 km)	-	10 (7408 People)
		Hatamunuguda	SH (10 km)	-	14 (6211 People)
		Dalikuji	SH & PMGSY (15 km)	-	15 (3264 People)
		Kutragada	SH (12 km)	-	11 (5274 People)
		P.Dakuluguda	SH & PMGSY (7 km)	-	9 (3653 People)
Bethiapada	SH	-	23 (4998 People)		
10.	Muniguda Hqrs.	17	-	-	412
11.	Chandrapur Hqrs.	8	-	-	217

13.3 Resources Available: Response Force & Volunteers

Table : 13.3

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	0	0	0	0	0	0
2.	ODRAF, Rayagada	28	14	4	10	Sri Dilip Kumar Mahapatra, OAPS-I	9437101001 06857251110
3.	Fire Service	30	10	2	15	Sri Susanta Sethy	6370934400 06856222222
3.	Police Personnel	629	0	0	629	Dr. Saravana Vivek M., IPS	06856222304 06856224504
4.	Home Guards	316	0	0	0	Dr. Saravana Vivek M., IPS	06856222304 06856224504
5.	Civil Defence	0	0	0	0	0	0
6.	NCC	175	0	0	0	Mr. Sunil Bhatt	7381009808
7.	NYK	0	0	0	0	Mr. Satish	8653675921 6305944207 06856224379
8.	Youth Red Cross	100	0	0	0	Sri Prasanta Kumar Panda	9124409291
9.	Trained Taskforce	0	0	0	0	0	0
	Total	1278	48	40	682	-	-

13.4 Usefulness of Satellite Phone During Natural Disasters

Satellite Phone can be a life saver during natural disasters. A Satellite Phone on the premises is essential as it would be only means to communicate with others. It gives a communication access to local services, rescue operations and emergency services.

Procedure for Using INMARSAT ISAT PHONE 2

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

Note:

A delay in microseconds will be observed so the user is advised to listen to one end and then speak.

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

13.5 Allotted Important Satellite Phone Numbers of Odisha

Table : 13.4

Sl. No.	Details	Calling Numbers
1.	Collector, Angul	8991118454
2.	Collector, Balasore	8991118455
3.	Collector, Bargarh	8991118456
4.	Collector, Bhadrak	8991118457
5.	Collector, Bolangir	8991118458
6.	Collector, Boudh	8991118459
7.	Collector, Cuttack	8991118460
8.	Collector, Deogarh	8991118461
9.	Collector, Dhenkanal	8991118462
10.	Collector, Gajapati	8991118463
11.	Collector, Ganjam	8991118464
12.	Collector, Jagatsinghpur	8991118465
13.	Collector, Jajpur	8991118466
14.	Collector, Jharsuguda	8991118467
15.	Collector, Kalahandi	8991118468
16.	Collector, Kandhamal	8991118469
17.	Collector, Kendrapada	8991118470
18.	Collector, Keonjhar	8991118471
19.	Collector, Khorda	8991118472
20.	Collector, Koraput	8991118473
21.	Collector, Malkangiri	8991118474
22.	Collector, Mayurbhanj	8991118475
23.	Collector, Nabarangpur	8991118476
24.	Collector, Nayagarh	8991118477
25.	Collector, Nuapada	8991118478
26.	Collector, Puri	8991118479

27.	Collector, Rayagada	8991118480
28.	Collector, Sambalpur	8991118481
29.	Collector, Subarnapur	8991118482
30.	Collector, Sundargarh	8991118483
31.	ODRAF Cuttack, OASP 6 th Battalion	8991118484
32.		8991118485
33.	ODRAF Bhubaneswar, OSAP 7 th Battalion	8991118486
34.		8991118487
35.	ODRAF Baripada, OSAP 5 th Battalion	8991118488
36.		8991118489
37.	ODRAF Rourkela, OSAP 4 th Battalion	8991118490
38.		8991118491
39.	ODRAF Koraput, OSAP 3 rd Battalion	8991118492
40.		8991118493
41.	ODRAF Jharsuguda, OSAP 2 nd Battalion	8991118494
42.		8991118495
43.	ODRAF Chatrapur, OSAP 8 th Battalion	8991118496
44.		8991118497
45.	ODRAF, Balasore	8991118498
46.		8991118499
47.	ODRAF, Bolangir	8991118500
48.		8991118501
49.	ODRAF, Jagatsinghpur	8991118502
50.		8991118503
51.	State Fire Office	8991118504
52.	Commissioner of Police	8991118505
53.	Revenue & DM Department	8991118506
54.	Managing Director, OSDMA	8991118507
55.	Office of Chief Secretary	8991118508
56.	Office of Chief Minister	8991118509
57.	Special Relief Commissioner (SEOC)	8991118510
58.	Managing Director, OSDMA	8991118511

13.6 Preparedness at District Level

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

13.7 Preparedness at Community Level

Task	Activity
Early Warning Dissemination	<ul style="list-style-type: none"> • Build regular linkages with BEOC & DEOC. • Test Check of various Equipment at shelter level & repair of the defective ones. • Keep updates from BEOC/DEOC. • Monitor & Transmit updates to BEOC. • Supply required information to BEOC & DEOC.
Ensuring Preparedness	<ul style="list-style-type: none"> • Have a list of Nodal person deployed in the village with contact details. • Identification of safer routes & shelters. • Identify possible ways to reach persons like Farmers/ Fisherman/ NTFP collectors etc who ventures into fields, reservoir & forest respectively. • Build teams among the task force on Search & Rescue, First aid, Damage & Loss Assessment. • Assess preparedness at Family/ Individual level. • Test Check-up of equipments.
Capacity Building	<ul style="list-style-type: none"> • Understand local dynamics exposed & vulnerable to different disaster. • Local social economic & weather conditions. • Develop Village DM Plan. • List of Emergency Contact No. & display it in the central places. • Participate in the activities of Preparing village Disaster Management Plan, Developing Safety Plan, Capacity Building Programmes & Mock Drills.

13.8 Preparedness at Family Level

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

Capacity Building	<ul style="list-style-type: none"> • Participate & involve in the activities of Village Disaster Management Plan and Preparation of Safety Plans. • Participate in Capacity Building Programmes. • Involve in Mock Drills.
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13.9 Preparedness at Individual Level

Task	Activity
Early Warning Dissemination	<ul style="list-style-type: none"> • List & keep a ready to go minimum important requirements. • Record the safe & alternative routes to shelter. • Keep News update in Radio/TV.
Ensuring Preparedness	<ul style="list-style-type: none"> • Every individual children must have a Personal Identity information like a copy of Aadhar Card/ Voter ID/ School Identity Card & Contact Nos. preferably of two who can be contacted in time of emergency. • Family members especially kids must be sensitized about family gathering point during disaster & crowded places. • Assess preparedness on a regular basis by checking Radio/ Mobile/ Emergency Kit/ First Aid Kit/ Fuels, Kerosene, etc as per requirement.
Capacity Development	<ul style="list-style-type: none"> • Participate and involve in the activities of Disaster Management. • Safety Plans. • Capacity Building Programmes. • Mock Drills, CAP/ FAMEX Programmes.

13.10 Preparedness of Departments

Name of the Department	Normal Time SOP for the Department
Collector / ADM / Emergency Officer - R&DM	<ul style="list-style-type: none"> • Ensure regular meetings of District Disaster Management Authority. • Develop & update Disaster Management Plan, carry out Hazard analysis in the district. • Identify safe alternate routes to Flood Shelters. • Keep a list of Contacts of EOCs, Nodal Officer of different departments, Important Stakeholders, Village Leaders, Shelters • List of Relief lines & Storage places. • List & Maintenance of SAR equipment. • Capacity Building of Stakeholders & Volunteers. • Asses Preparedness through Mock Drills for different disasters at District Department, Block & Community level.

	<ul style="list-style-type: none"> • Adopt Sustainable Mitigation Measures. • Integrate DM & DRR features in Development Programmes.
CDM&PHO - H&FW	<ul style="list-style-type: none"> • Disaster Management Plans & Safety plans for Hospitals. • Capacity building of Medical & Para Medical Staffs. • Assess preparedness through Mock Drills & familiar exercises. • Integrate department plans with plans with Village & Block Plans and development programmes. • Develop media partnership. • Develop capacity of hospitals with advance equipment, proper manning & disaster resilient infrastructures. • Stock piling of Life saving drugs/ ORS packets/ Halogen tablets on receipt of warning from the Collector/ DCR. • Transmission of messages to all PHCs to stock medicines and keep the medical staff ready. • Disease surveillance and transmission of reports to the higher authorities on a daily basis. • Vaccination. • To obtain and transmit information on natural calamities from the DCR. • Advance inoculation programme in the flood/Cyclone prone areas. • Ensuring distribution of areas of operation among the mobile team. • Pre-distribution of basic medicines to the people who are likely to be affected. • Shifting the patients who are in critical situation to the District Hospital. • Awareness messages to stop the outbreak of epidemics. • Conducting mock drills.
Superintendent of Police - Home	<ul style="list-style-type: none"> • Reception of Warning from the DCR. • Communication establishment with District and Block/Tahasil Control rooms and departmental offices within the division. • Alerting the APR force for deployment at the time of calamity. • To issue directive to police field functionaries to co-operate with Revenue Personnel in management of Relief operation.
EE - RWS&S	<ul style="list-style-type: none"> • Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. • Within the affected block, all available personnel will be made available to the District Magistrate. If more personnel are required then out of station official or those on leave may be recalled. • Prepare plans for water distribution to all transit and relief camps, affected villages and cattle camps and ensure proper execution of these plans. • Inform people to store an emergency supply of drinking water

	<ul style="list-style-type: none"> • Investigation of alternate of water and its supply. • Standby diesel pumps or generators should be installed in damage-proof buildings. • A standby water supply should be available in the event of damage, saline intrusion or other pollution of the regular supply. • Establish procedures for the emergency distribution of water if existing supply is disrupted. • Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis. • Make provision to acquire containers and storage tanks, required for storing water on an emergency basis. • Protect pump stations from water logging. • Repair sewage lines where damage is detected. • Repair water pipelines wherever damaged.
EE - Irrigation Division - WR	<ul style="list-style-type: none"> • Check the wireless network and ensure that all the flood stations are connected. • Establish mechanisms for exchange of information with irrigation divisions. • Inspect all the Bundhs, and check their height and slope. • Check the top of the Bundhs, and if they have been cleared of encumbrances / encroachments and if they are motorable. • Check that all the Bundhs have been repaired/ reinforced, in particular those Bundhs which were damaged during the last floods. • Check the drainage system of the Bundhs and ensure that the seepage and rat holes, etc. have been closed. • Check that all the materials required for protecting Bundhs have been stored at different places, and a list of these places has been furnished to the district administration. • Check that the Junior engineers and other staffs have been assigned their beats. • Arrangements for continuous vigilance over these Bunds have been made. • Check that all rain gauge stations are functional, and arrangements have been made to report the readings. • Check the regulators and siphons. Check that they have been repaired and cleaned, increasing the flow of water. • Check all the anti-erosion works, necessary to maintain the Bunds.
CDAO - A&FE	<ul style="list-style-type: none"> • Preparation of Department Disaster Management Plan - A change in crop/ cropping system including variety and proper agronomic measures should be followed. • Adoption of coping strategies in drought and flood prone areas- Drought resistance variety Sahabhagi and flood tolerant variety Swarna Sab-1 adopted. • Arrangement of buffer seed stocks for the farmers - Prepositioning

	<p>at block/ PACS level to be made for supply of short duration paddy seeds/ Arhara/Maize/Blackgram by OSSC Ltd. or any other seed supply agency.</p> <ul style="list-style-type: none"> • Inspection of sub-ordinate offices, other centres and sub-centres which are damage prone- A team should be constituted and they should visit the sub-centres . • Repair and maintenance of agricultural production, extension, seed growth centres and training centres- Action will be taken for repair and maintenance of godowncentres. • Maintenance of departmental equipments to use during emergency- Provision has already been made for supply of departmental equipment likes Sprinklers/ Power Sprayer/ Hand Sprayer and Pesticides,etc during emergency. • Arrangement damage lessen measures for public properties related to agriculture in the damage prone areas- If harvested crop is heaped during cyclonic rain then the crop should be covered by polythene, staked properly and brine solution should be sprayed to prevent the harvest crop from germination .The farmers should be advised to cut the crop and bring back to their farm house to save the crop from damage by cyclonic rain . Advance SMS should be sent to the farming community regarding catastrophe.
DDH - A&FE	<ul style="list-style-type: none"> • Preparation of Department Disaster Management Plan. • Adoption of coping strategies in drought and flood prone areas. • Arrangement of buffer seed stocks for the farmers. • Inspection of sub-ordinate offices, other centers and sub-centers which are damageprone. • Repair and maintenance of horticulture production, extension, seedling growth centersand training centres. • Maintenance of horticultureequipments to use during emergency. • Arrangement damage lessen measures for public properties related to horticulture in the damage prone areas.
EE-RWD - RD	<ul style="list-style-type: none"> • Govt. buildings should be inspected and necessary repairs to be got executed to with standing hazards affected. • Script for slides, pamphlets, and cultural programmers should be got prepared immediately. • Arrangements should be made to obtain poster and films by addressing the Director through the Collectors. • Public addresses equipment should be obtain kept ready. • The community Radio sets available in the coastal villages should be ascertained • The names of Hamlets where they are not available to be reported. • The public should be fully educated regarding the precautionary measures & after cyclone through available media. • Specific duties should be assigned to the field staff. • The field staff should proceed to the place of work allotted and be

	<p>ready to attend to cyclone duty.</p> <ul style="list-style-type: none"> • All personnel required for disaster management should work under the overall supervision and guidance of DM. • Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. • Vehicles should be inspected, fuel tanks filled and batteries and electrical wiring covered as necessary. • Extra transport vehicles should be dispatched from headquarters and stationed at safe strategic spots along routes likely to be affected. • Heavy equipments, such as front-end loaders, should be moved to areas likely to be damaged and secured in a safe place. • Clean the area beneath bridges regularly for smooth flow of excess water • Maintain all the highways and access roads, which are critical from the point of view of supplying relief. • Inspect all buildings and structures of the state government (including hospital buildings.) by a senior engineer and identify structures which are endangered by the impending disaster. • The designation of routes strategic to evacuation and relief should be identified and marked, in close coordination with police and District Control Room • Establish a priority listing of roads which will be opened first. Among the most important are the roads to hospitals and main trunk routes • Work under construction should be secured with ropes, sandbags and covered with tarpaulins if necessary. • Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground. • Inspection of old buildings and suggesting retrofitting of weak buildings/ demolition of dangerous structures and evacuation of population. • Carry out route opening by removing debris on the road. • Begin clearing roads. Assemble casual labourers to work with experienced staff and divide them into work gangs.
EE-PWD- Works	
DTO - Telecom	<ul style="list-style-type: none"> • Assess the different disaster scenarios and match the communications needs with the available resources. • Ensure that TSPs (private and public) invest in preventive measures that will ensure maximum robustness and preparedness of the telecom networks during emergencies. • Ensure that TSPs (private and public) develop detailed emergency plans for management of resources under their responsibility. • Conduct annual reviews of the ETP/SOP - Organize annual

	<p>symposium on telecommunications availability during emergency.</p> <ul style="list-style-type: none"> • Update the communications plan according to development and innovations in emergency telecommunications systems. • Disseminate information among the Public and the district administration on the availability of telecom services and equipment's for use during emergencies.
CDVO - ARD	<ul style="list-style-type: none"> • Functioning of a District Control Room at O/o. CDVO, Rayagada. • Formation of Block level control room with Mobile Veterinary Units. • Disaster Management Plans & Safety plans for Veterinary Institution. • Capacity Building of Vet & Paravet Staffs. • Assess Preparedness through Mock Drill and Familiar Exercises. • Integrate Department Plans with Village & Block Plans and Development Projects. • Develop Media Partnership. • Develop Capacity of VDS with Advance Equipment, Proper Manning & Disaster Resilient Infrastructures. • Arrangement of necessary medicines, vaccines and other material, for treatment of animals.
RTO - T&C	<ul style="list-style-type: none"> • Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District Emergency Control Room. • Provide vans and ambulances for mobile health and animal husbandry teams. • Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management • Issue standing instructions to the State transport department for providing buses for evacuation and relief. • Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.
DFO - F&E	<ul style="list-style-type: none"> • Develop and quarterly 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 • Make personnel available to the District Magistrate, within the affected block,. If more personnel are required, recall those on leave. • Identify areas that could be opened or made available for grazing or fodder collection in case of disaster • Ensure that adequate supply of small poles or bamboo is available for reconstruction of houses of the affected people, as

	<p>well as wood for cremation of dead.</p> <ul style="list-style-type: none"> • Ensure plantation to the maximum possible extent.
Railways	<ul style="list-style-type: none"> • Identification of flood prone areas, RAT, RAW and information prone to erosion/breaches and marking them on railways system map. • Development of Flood Shelters for staff and passenger at suitable locations in the areas prone to repeated floods. • Study of changed water catchment area due to construction of highways, Dams. • Study of changed rainy season month on a particular region. • Action Plan for Alignment, Location, Design and Provision of Waterway on Railways Embankments. • Inspections of Railway Affecting Works – to be streamlined and timely ensured. • Review of waterways for adequacy and alignment and measures to modify, if needed. • Status Note on the lessons learnt from the previous flood situations in the past 5 years. • Bye-laws for buildings in flood plains. • Making existing and new buildings and infrastructure capable of withstanding fury of floods.
EE-Southco - Energy	<ul style="list-style-type: none"> • Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment. • Ensure that the Power Supply department to make alternate arrangements of emergency supply for the major offices from time of receipt of districts. • Check emergency tool kits, assembling any additional equipment needed. • After receiving alert warning, immediately undertake following inspection of High tension lines, Towers, Sub-stations, Transformers, Insulators, Poles and other equipments. • Instruct district staff to disconnect the main electricity supply for the affected area. • Protect Power Stations from disaster. Raise the height of compound walls. Arrange gunny bags. Install pump sets for draining water in case of Flood. • Provide information to the people about the state of power supply. It is one of the most important sources of information. Establish temporary electric supplies to other key public facilities, public water system etc. to support emergency relief. • Establish temporary electric supplies to transit camps feeding centres, relief camps and Site Operation Centre, District EOC and on access roads to the same. • Establish temporary electric supplies for staging area. • Compile an itemized assessment of damage, from reports made

	by various electrical receiving centres and sub-centres.
EE-PHED - H&UD	<ul style="list-style-type: none"> • Formation of Disaster Management Cell and manning with senior personnel drawn from key sections of the dept. • Formulation of Public Health Engineering related programme and activities by intonating them with hazard specific preventive and mitigation measures. • Creation of stocks of installation materials at the district level for use in emergencies. • Orientation and training of a team of technicians to do installation as quickly as possible. • Strategizing the installation of hand-pumps etc. with hazard profile of the area in mind. • In consultation with the Department of Education and DMD, provision of additional sanitation and drinking water facilities in schools and relief shelters where people take refuge during flood. • In consultation with the Department of Disaster Management making special arrangements for the supply of drinking water in drought prone areas. • Planning for repair and maintenance of the facilities created as a part of the programme and activities. • Keeping a track of groundwater level and having a fresh look at the facilities created accordingly. • Organizing interaction with Gram Panchayats for having proper sanitation facilities, and providing them support and guidance in planning, implementation and maintenance of the same. • Procurement, upkeep and maintenance of sanitation equipment for use in emergencies.
DEO -S&ME and DEO - HSE	<ul style="list-style-type: none"> • Formation of Disaster Management Cell and manning the same by senior personnel drawn from key Directorates. • Incorporating costs for preventive and mitigation measures for earthquake, flood, fire and cyclonic storm prone areas to construct disaster resistant school buildings. • In association with Fire Dept. getting fire extinguishers installed in schools and teachers identified and trained in operating them. • Awareness Generation Programmes about Hazard, the kind of preparedness required and how to act at the time of disaster shall be organized in schools on monthly basis. • Disaster Management shall be made a part of the school curriculum. • The Department shall get quality films made on hazard wise disaster preparedness and organize their viewing by children and their parents. • The Department shall in association with Nehru Yuva Kendra organize locality based youth clubs and get them groomed in escort services, relief work and taking care of children, women, old and sick.

	<ul style="list-style-type: none"> • Making adequate arrangements for getting hand pumps installed, storage facilities created, toilet and bathrooms built in those schools where communities do take shelter during flood. Concerned departments shall either make the arrangements or make funds available for the same.
BDOs/ Tahasildars	<ul style="list-style-type: none"> • Providing authentic information required by the DCR. • Preparing a record of previous disasters in the locality and analyzing the effects. • Preparing hazard maps of the Block./Tahasil& the GPs in minute details. • Mapping the cut off areas with alternate route map. • Identification of shelter places in the maps. • Keeping a List of storage Points & facilities available, dealers of foodstuffs. • Keeping a list of vulnerable people and area and weak points on embankments (if applicable). • Creating a Control Room at the respective level and assignment of duties to the staff. • Pre-positioning of staff for site operation centers. • Uninterrupted communication with the DCR. • Arrangement of alternative communication/generator sets, etc. • Formation of GP/village level disaster committees and task forces. • Arrangement of boats on hire available locally. • Deployment of Boat in the most vulnerable areas. • Organizing awareness camps at GP/village levels. • Dissemination of Warning. • Crosschecking with the DCR for the authenticity of the warnings. • Arrangement or requisition of vehicles to disseminate received warning information's to the population of vulnerable/ weak places. • Dissemination of warning/ coordination with District control room. • Warning the people about probable affected areas. • Mobilizing the people to leave for identified shelters with their domestic animals and personnel belongings.



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 timely 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. An effective response plan essentially outlines the strategy and resources necessary for search, rescue and evacuation activities.

Mechanism of Response Plan

- **Functioning of Emergency Operation Centre**

Normally it operates from district level and works as a coordinating agency between departments and stakeholders. It is the nodal agency headed that controls all movements of emergency situation or any disaster situation.

- **Functioning of Control Room**

It acts as the main center of information and communication from district/block level and established both at district as well as block level.

- **Establishment of Alert Alarm System**

The Alarm System is established as the quickest mode of communication. This may be telephonic/ mail or any shortest mode of communication based on the intensity of disaster or early detection of the magnitude of disaster. The alarm system will be stationed at the EOC. In order to check the functionality of all possible alert systems the EOC must check randomly all possible contact nos./ mail ids/ available VHF sets/ Satellite phones, etc.

- **Capacity Building**
 The main intention is to prepare a quick response team at district and block level. This may comprise of different level of stakeholders from root to top agencies including civilians, NGOs, NCC/ Police/ Students/Youth clubs/ PRIs/Public representatives/ Mass media/ CBOs/ Red Cross etc. They should be capacitated with different types of disaster response mechanisms. At the time of disasters, the quick response team can add value to address disaster. Hence, at all level the team must be identified and prepared much before focusing on type of disaster.
- **Food Security and Rest Rooms**
 The possible rest shades and community kitchen system must be identified primarily in every possible pocket depending upon type of disaster. So that, at the time of disaster strike food security and shelter can be ensured to each stakeholder. Primarily, these identified rescue infrastructures must be analyzed to ensure water, electricity and sanitation facilities. Local area grocery shops and list of petty and big business man should be enlisted.
- **Storing of Food Materials**
 Possible area of food storage godawn/ infrastructures need to be identified previously in order to stock sufficient amount of food stock in order to fight with emergency period, if necessary.
- **Effective Health Management Team**
 This is necessary to avoid any sorts of health disaster of any affected person or community. controlling spreading of epidemics, controlling casualties, addressing post-mortems, addressing traumatic condition of victims, distribution of medicine, addressing health of women and children with social vulnerable disable groups, etc are the prime responsibility of health mechanism. Stocking of sufficient quantity of medicines/ first aids/ updated blood bank information/ ready human resource/ ambulance system are the main focus.
- **Deployment of Active Task Force**
 With the above capacity building the active task force must be informed to address the magnitude of disaster.
- **Establishing Inventory/ Equipment Record Keeping Mechanism:**
 This is an important part in the Disaster Response System, mostly necessary to accomplish the task of evacuation. In case of emergency usually need different inventories/ technical/ mechanical equipments to quickly respond the evacuation process. In order to address this process, all Departments/ Organisation/ Contractors/ Engineering Sections/ ODRAF/ Fire Service and all Forces of the district must share their present list and status of all inventories lies with them. Also, they must share the details of operator/ human resources available for the same inventory.

- **Evacuation**

It is the most important phenomenon in the issue of Response Mechanism. Hence, with proper functioning of the above system the rate of affect can be lessen and the process of evacuation can be address properly.

The Disaster Response System, herewith puts focus upon different agencies for various response matters :

Agency	Response
District Authorities	Evacuation, Food through PDS, Water and Sanitation, Monetary Compensation, Medical AID, Construction Material, etc.
Defence/ Police & Fire Services	Evacuation, Air dropping in inaccessible areas, Crowed management, rescue operation, Controlling of disaster, Rumour and Panic Management, etc.
International Agencies	Medical Aid, Food Supplies, Financial Aids, etc.
NGO/ CBOs/ VOs/ Youth Clubs/ NCC, etc	Food, Utensils, Clothes, Water, Medicine, Psychological Support, etc.
Individuals	Voluntary help.

Disaster Response Mechanism Main Objectives:

- Saving and protecting human life.
- Relieving suffering.
- Containing the Emergency– Limiting its escalation or spread and mitigating its impacts.
- Providing the public and businesses with warnings, advice and information.
- Protecting the health and safety of responding personnel.
- Safeguarding the environment.
- As far as reasonably practicable and protecting property.
- Maintaining or restoring critical activities.
- Maintaining normal services at an appropriate level.
- Promoting and facilitating self-help in affected communities.
- Facilitating investigations and inquiries by preserving the scene and effective records management.
- Facilitating the recovery of the community including the humanitarian assistance, economic, infrastructure and environmental impacts.
- Evaluating the response and recovery effort.
- Identifying and taking action to implement lessons identified.

Figure : 14.1
Timeline of Response Phase

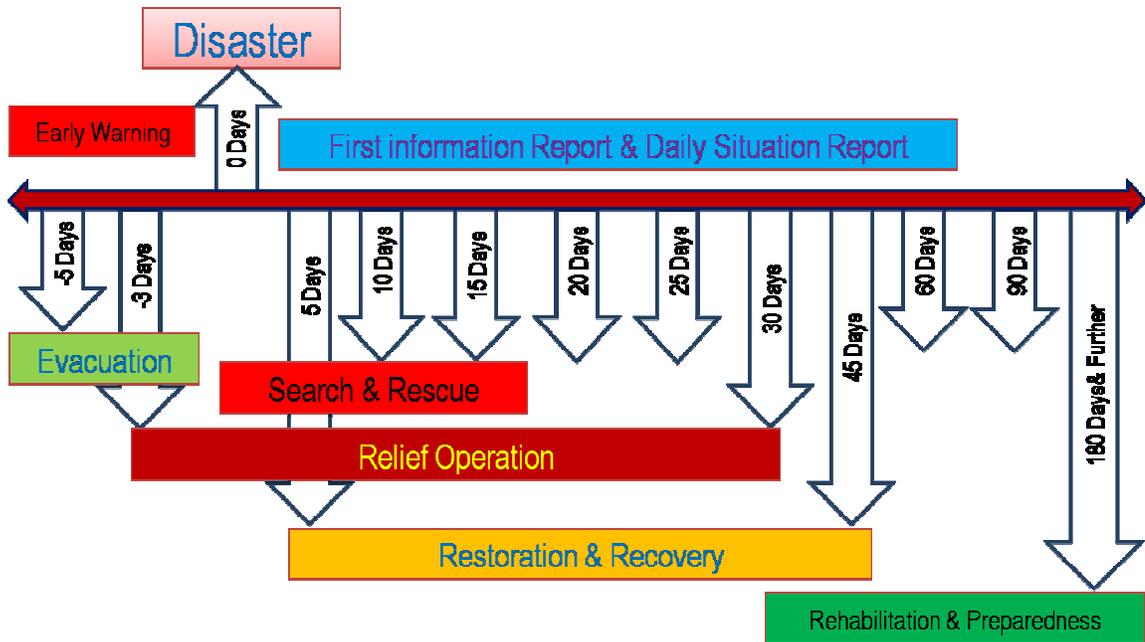
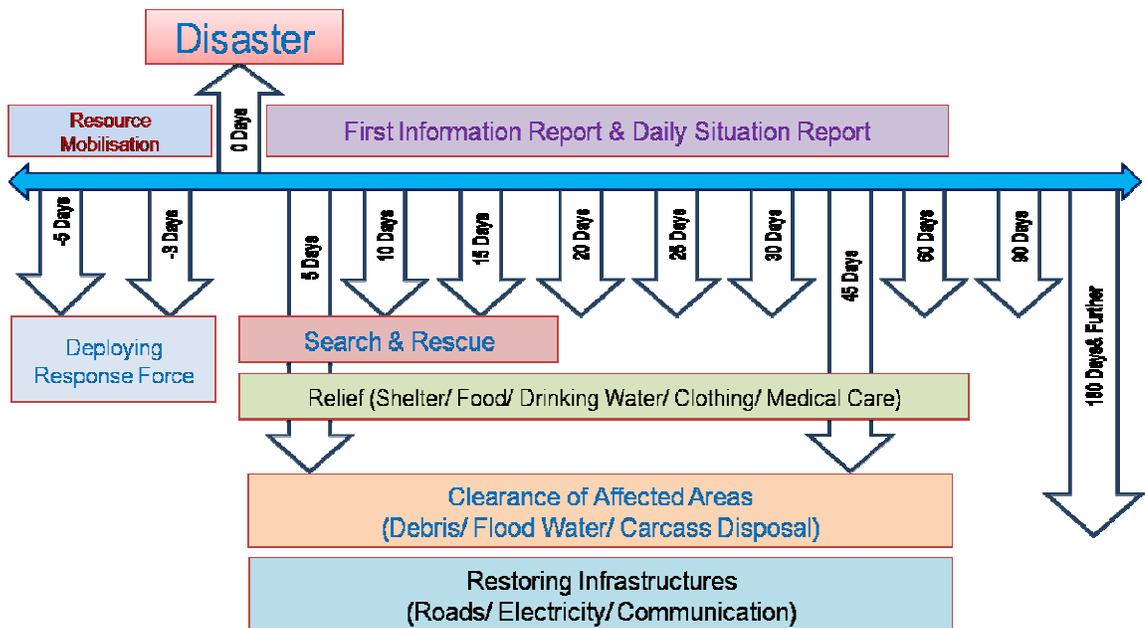


Figure : 14.2
Timeline of Relief Management



14.1 Response: District

Task	Activity
Warning Communication	<ul style="list-style-type: none"> • Warning dissemination to the list of Nodal person & concerned BDOs • Recording the receipt of information & regular status update. • Transmitting updates to SEOC in regular interval as instructed.
Meeting of DDMA (Heads of the department & stakeholder)	<ul style="list-style-type: none"> • Collector to take up a department coordination meeting & distribute works among all the departments. • Collector issues circular to keep government offices open cancelling all holidays. • A fixed time to be finalized every day for reporting at all level. • A nodal officer is identified for media management. • Circulate the minutes of the meeting with clear-cut role and responsibility.
Pre-positioning of staff, resources & Evacuation	<ul style="list-style-type: none"> • Identifying & designating Nodal Officer for different stages of disaster & affected areas. • Positioning of ODRAF/ NDRF/ Fire Services/ Police/ Home Guard in the affected areas. • Pooling Volunteer services (Civil Defence/ Task Force/ NCC/ NSS/ Scout & Guide). • Take stake of required materials for search & rescue, first aid, casualty management, evacuation, relief etc.
	<ul style="list-style-type: none"> • Make necessary arrangements of shelters for evacuation. • Constitute a special team for special care to vulnerable section like specially abled, senior citizen, pregnant & lactating women, Infants & children etc.
Response	<ul style="list-style-type: none"> • EOCs to ensure back up power/ fuel/ internet/ communication at Dist./ Dept. & Block levels. • Response force under guidance of Nodal officers ensure complete Evacuation (Human/ Animal), carry out search & rescue and clear relief lines. • Collector to submit requisition of vehicle/ boat/ helicopters & list of support from State & Centre to all concerned authorities. • CSO to store required relief materials, Chhuda, Gur and Dry Foods in the nearby storage points. • CDVO to store, transport & distribute required fodders for animals to the affected areas. • Flood shelter committee & Village Disaster Management Committee to organize free kitchen in the shelters with help of revenue department. • EE- RWSS & CDM&PHO to ensure supply of drinking water, disinfection of water & maintain health & hygiene in the shelters. • CDM&PHO to carry out first aid & casualty management. • Collector to collect & transmit First Information Report (FIR) & Daily Situation Report as per requirement.

14.2 Response: Community Level

Activity
<ul style="list-style-type: none"> • DEOC to disseminate warning communication to BEOC and community. • Response force to ensure power/ fuel/ internet/ communication at shelters back up. • Supply inspectors and marketing inspectors to distribute relief materials with response force, task force and volunteers. • Response force to carry out Search & Rescue measures, emergent relief operation, relief line clearance, distribution of relief. • Doctors to carry out first aid & casualty management, carcass disposal & sufficient mortuary facility in the affected areas.

14.3 Response: Family & Individual Level

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

14.4 Response: Standard Operating Procedures for Departments

Name of the Department	On Receiving Warning	Response Time	Post Disaster
Collector / ADM / Emergency Officer - R&DM	<ul style="list-style-type: none"> • Review the situation in DDMC. • Activate EOC & Early Warning. • Work distribution for operation. • Circular to keep offices open. • Arrange vehicle & activate Evacuation (Normal/Forceful). 	<ul style="list-style-type: none"> • Activate Search & Rescue. • Arrange temporary shelters. • Arrange logistics in shelters. • Workout financial estimates (evacuation / relief /recovery). 	<ul style="list-style-type: none"> • Activate relief line clearance. • Proper relief Distribution. • Start damage assessment. • Facilitate Ex-gratia & Compensation. • Start primary damage estimate. • Pool resources for SAR/ shifting of critical patients.
CDM & PHO - F&FW	<ul style="list-style-type: none"> • Disseminate the alert to all concerned (Staff list). • Arrangement of medicine, First aid kits 	<ul style="list-style-type: none"> • Mass Casualty Management units & Triage. • First Aid Centers • Medical surgical teams. 	<ul style="list-style-type: none"> • Psycho-Social Counselling. • Post Disaster Disease surveillance

	<ul style="list-style-type: none"> • & teams. • Mobile Health units for inaccessible pockets. • Identifying & shifting patients requiring intensive care to safer places. • Supply of medicines & pre-positioning of medical teams to vulnerable areas. • Vaccination for prevention of communicable diseases. • Measures to disinfect drinking water. • Availability of Blood Banks/Ambulance. 	<ul style="list-style-type: none"> • Adequate mortuary facility. • Measures to shift patients requiring intensive care. • Pool of Blood donors (Preferably each group). • Additional laboratories. • Carcass disposal team & units. 	<ul style="list-style-type: none"> • system. • Special attention to vulnerable section. • Networking with & promote treatment in Private Hospitals. • Carcass Management & Issuance of Death Certificate.
Superintendent of Police - Home	<ul style="list-style-type: none"> • Identify Disaster Prone area in the district. • Prepare a Deployment Plan for the Police force, based on the needs of the most vulnerable areas. • Ensure that a sufficient number of police force is available for responding to the disaster situation. • Establish coordination with the State Armed Police and Defence and Home Guards. • Check the wireless communication network, and secure additional wireless sets for deployment during a disaster. • Installation of radio communications at District Control Room, Control room at affected site, 	<ul style="list-style-type: none"> • Dispatch Police to systematically identify and assist people and communities in life threatening situation. • Designate an area, within Police Station to be used as help line centre for public. • With the assistance of health professional, help injured people and assist the community in organizing emergency transport of seriously injured to medical treatment centers. Ensure that the police stations with staff are functioning in disaster situation. • Assist and encourage the community in road-cleaning operation. 	<ul style="list-style-type: none"> • Provide guards wherever needed particularly for staging area of cooperative food etc stores and distribution centers. • Provide convoys for relief materials. • Evacuation will be ordered by Deputy Commissioner, Addl. Commissioner and Superintendent of Police. • Assist and encourage the community in road-cleaning operation. • Assess and Identify road for following conditions/facilities one Way, Blocked, Alternate

	<p>Departmental Offices within the District & Division.</p> <ul style="list-style-type: none"> • Keep the police vehicles and other modest transport in readiness for deployment of the police. • Call for emergency meeting to take stock of the situation. 		<p>route, Overall Traffic Management, Other access roads.</p> <ul style="list-style-type: none"> • Provide security arrangements for visiting VVIPs and VIPs. • Assist district authorities to take necessary action against Hoarders, Black Marketers and those found manipulating relief material.
EE-RWS&S - PR&DW	<ul style="list-style-type: none"> • When early signs of distress appear in any part of the district, EE RWS&S will submit a special situation update to DM indicating the position in respect of Water and Sanitation preparedness in the district. • Will inform all concerned RWS&S-JEs/ AEs of blocks and Panchayats to review essential emergency stocks and contingency plans to be able to respond in a timely manner. • Upon receipt of early warning signals from State, he must start the monitoring of all water and sanitation infrastructure in the affected parts of the District. • Will be in constant touch with the local IMD and other 	<ul style="list-style-type: none"> • Will ensure supply of clean drinking water to affected areas. Will ensure transportation of water with minimum wastage. • Will ensure supply of water purification installations, mobile systems, halogen tablets etc. for providing clean drinking water • Will ensure that special care is taken of women with infants and pregnant women. Will ensure that sewer pipes and drainage are kept separate from drinking water facilities. • Will ensure availability of adequate number of toilets to prevent further contamination of water sources. 	<ul style="list-style-type: none"> • Must launch necessary awareness campaigns on safe water handling practices, environmental sanitation and individual hygiene along with hardware provision. • Will visit as many areas as possible to have first-hand information of the situation. Will keep District Collector and E-in-C/ CE, RWS&S informed daily about the action taken by him in his area. • Local MLA, MP and other community leaders must be informed on measures taken by

	agencies in the district for information on impending disaster.		RWS&S / PHED for an effective disaster response.
EE-Irrigation Division - WR	<ul style="list-style-type: none"> • When early signs of distress appear in any part of the district, EE Irrigation will submit a special situation update to DM indicating the position in respect of Irrigation preparedness in the district. • Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to irrigation and also whether alternate source of H2O within the district. • Prepare a contingency plan for the maintenance and repairs of Bundhs and embankments. • Identify Bundhs, which are critical for disaster protection and control. • Review and update precautionary measures and procedures. 	<ul style="list-style-type: none"> • Will ensure availability of adequate number of tool kits to prevent any damage during disaster. • Provide special attention to those places where the Bundhs were breached and repaired during the last floods/disaster last year. These are the Bundhs, which will be threatened first during the disaster. • Deployed adequate team in the most vulnerable areas. 	<ul style="list-style-type: none"> • Undertake channel improvement for rivers and nalas to the extent possible. Undertake de-silting / cleaning of Nalas and canals to improve the flow of water. • Supply the essential tool kits and protection material at critical places for emergency repair and construction. • Organize round the clock inspection and repair of equipments.
CDAO - A&FE	<ul style="list-style-type: none"> • Depute one responsible officer to DEOC. • Inform the farmers regarding dos and don'ts. • Check and procure the materials which are required after the disaster. 	<ul style="list-style-type: none"> • Mobilize the resources as per the need to the affected areas. • Estimate the requirements of the seeds and material required to mitigate the loss. 	<ul style="list-style-type: none"> • Quantify the losses of the crops. • Take Measures to recoup the crop loss. • Assist farmers to sow the less time period crop to recover the loss.

			<ul style="list-style-type: none"> Execute the schemes to eliminate the drought effect.
DDH- A&FE	<ul style="list-style-type: none"> Depute one responsible officer to DEOC. Inform the farmers regarding disaster prevention and mitigation. Check and procure the materials which are required after the disaster. 	<ul style="list-style-type: none"> Mobilize the resources as per the need to the affected areas. Estimate the requirements of the seeds and material required to mitigate the loss. 	<ul style="list-style-type: none"> Quantify the losses of the crops. Take Measures to recoup the crop loss. Assist farmers to sow the less time period crop to recover the loss. Execute the schemes to eliminate the drought effect.
EE-RWD - RD	<ul style="list-style-type: none"> When early signs of distress appear in any part of the district, EE Rural Works will submit a special situation update to DM indicating the position in respect of rural works preparedness in the district. Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to rural areas. Ensure community involvement in disaster preparedness. 	<ul style="list-style-type: none"> Will ensure availability of adequate number of tool kits to prevent any damage during disaster. Provide special attention to those places which were most vulnerable areas during disaster last year. Deployed adequate team in the most vulnerable areas. Ensure the rural communication system and shelter management process during disaster. 	<ul style="list-style-type: none"> Carry out the detail technical assessment of the affected areas and prepare the recovery plan. Repair and reconstruction of the buildings and roads. Construct temporary shelters in the affected areas.
EE-PWD - Works	<ul style="list-style-type: none"> Conduct HRV analysis of PWD of the district. Based on HRV analysis, prepared Contingency Action Plan for the Department. 	<ul style="list-style-type: none"> Carry out route opening by removing debris on the road. Provide a work team carrying emergency tool kits, depending on the nature and extent of 	<ul style="list-style-type: none"> Undertake repair of all paved and unpaved road surfaces including edge metalling, pothole patching and any failure of

	<ul style="list-style-type: none"> • All personnel required for disaster management should work under the overall supervision and guidance of DEOC. • All officers (technical officers) should be notified and should meet the staff to review emergency procedures. • Review and update precautionary measures and procedures, and review with staff the precautions that have been taken to protect equipment. • Maintain all the highways and access roads, which are critical from the point of view of supplying relief. 	<p>the disaster, essential equipments to the disaster spot.</p> <ul style="list-style-type: none"> • If people are evacuating an area, the evacuation routes should be checked and people assisted. • Construct/ reinforce the connecting roads from villages to roads, canals and Bundhs and raise their level so that people can access the high ground during disaster. 	<p>surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions.</p> <ul style="list-style-type: none"> • Undertake construction of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for flood victims. • As per the decisions of the District Control Room, undertake construction of temporary structures required, for organizing relief work and construction of relief camps, feeding centres, medical facilities, cattle camps. • An up-to-date report of all damage and repairs should be kept in the district office report book and communicate the same to the District Control Room.
DTO-Telecom	<ul style="list-style-type: none"> • Communication establishment with District and Block/ Tahasil control room and departmental officers within the division. 	<ul style="list-style-type: none"> • Where Disaster strikes with/ without early warning signals, TSPs shall immediately assess damage to their network and deploy Rapid Damage 	<ul style="list-style-type: none"> • If required portable / vehicle mounted / air-transportable BTSs / BSCs with backhaul on satellite media may be installed by

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

	<p>places.</p> <ul style="list-style-type: none"> • Supply of medicines pre- positioning of veterinary teams to vulnerable areas. • Vaccination for prevention of communicable diseases. • Measures to disinfect drinking water. 		
RTO - T&C	<ul style="list-style-type: none"> • Disseminate the alert to all concerned staff. • Prepare a list of vehicles- trucks, buses, jeeps, tractors, etc of government and private agencies in the district and provide the list to the District control room. • Issue standing instructions to the State transport department for providing buses for evacuation and relief. • Recall important functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. 	<ul style="list-style-type: none"> • Provide requires vans and ambulances for mobile health and animal husbandry teams for immediate response during disaster. • Provide trucks, buses, jeeps, tractors, etc for evacuation and supply chain management. • Fill department vehicles with fuel and park them in a protected area. 	<ul style="list-style-type: none"> • Providing vehicles for communication and relief. • Provide ambulances to rural areas for bringing affected people to hospitals after disaster.
DFO - F&E	<ul style="list-style-type: none"> • Conduct HRV analysis of Forest of the district. • Based on HRV analysis, prepared Contingency Action Plan for the 	<ul style="list-style-type: none"> • Allow the transportation of fodder from forest areas, when the fodder is not freely available. • Evacuate the people and animal under the 	<ul style="list-style-type: none"> • Ensure Plantation to maximum possible extent. • Ensure supply of wood for disposal of dead bodies. • Recall important

	<p>Department.</p> <ul style="list-style-type: none"> • All personnel required for disaster management should work under the overall supervision and guidance of DFO. • All district level officials of the department would be asked to report to the DFO when disaster occurs. 	<p>forest areas to a safest place.</p> <ul style="list-style-type: none"> • Cut down the most vulnerable trees near the residential areas. • Provide wooden poles and bamboo for temporary shelter. 	<p>functionaries from leave; communicate to the staff to man their places of duties like the ward and divisional offices and respective departments.</p> <ul style="list-style-type: none"> • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives.
Railways	<ul style="list-style-type: none"> • Overall coordination with the district administration for disaster response. • Disseminate the alert to all concerned staff. • Call for emergency meeting to take stock of the situation. Develop a strategy and objectives. • Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to railway lines. 	<ul style="list-style-type: none"> • Activate Search & Rescue • Arrange temporary shelters • Mass Casualty Management units &Triage • First Aid Centers • Medical surgical teams • A control room will be setup at the district HQ / nearest to affected area, as the case may be, and made operational under control of TERM cell of affected area. 	<ul style="list-style-type: none"> • Providing necessary information to public. • Clearing the railway line blockages and restoration of the communication system. • Providing relief line to the vulnerable areas after disaster. • Special attention to vulnerable section.
EE-Southco - Energy	<ul style="list-style-type: none"> • Conduct HRV analysis for the department of the district. • Based on HRV analysis, prepare Contingency Action Plan of department of Power Supply. • All personnel required for disaster management with 	<ul style="list-style-type: none"> • Instruct district staff to disconnect the main electricity supply for the affected area. • Dispatch emergency repair groups equipped with food, bedding, tents, and tools. • Protect Power Stations from disaster. Raise the height of compound 	<ul style="list-style-type: none"> • Ensure that the Power Supply department to make alternate arrangements of emergency supply for the following offices from time of receipt of districts:Hospitals, Public Health

	<p>work under the overall supervision and guidance of responsible officer.</p> <ul style="list-style-type: none"> • Establish radio communications with State Emergency Operation Centre, Divisional Commissioner, District Control Room and departmental offices within District/Division. • After receiving alert warning, immediately undertake following inspection: High tension lines, Towers, Sub-stations, Transformers, Insulators, Poles and other equipments. 	<p>walls. Arrange gunny bags.</p> <ul style="list-style-type: none"> • Install pump sets for draining water in case of Flood/ Cyclone/ Tsunami, etc. • Provide information to the people about the state of power supply. It is one of the most important sources of information. 	<p>Departments, Dy. Commissioner Office, District EOC, Sub-Divisional EOC, site Operation Centres. Police Stations , Telecommunications buildings , Meteorological stations. Irrigation Office.</p> <ul style="list-style-type: none"> • Hire casual labourers on an emergency basis for clearing of damaged poles and salvage of conductors and insulators. • Begin immediate repair/ reconstruction.
EE-PHED - H&UD	<ul style="list-style-type: none"> • When early signs of distress appear in any part of the district, EE PHED will submit a special situation update to DM indicating the position in respect of water supply preparedness in the district. • Prepare and update the disaster risk map of the district. The map should show the vulnerability and risks of the critical infrastructure related to water supply and public health. • Prepare a contingency plan for the maintenance and 	<ul style="list-style-type: none"> • Will ensure availability of adequate number of tool kits to prevent any damage during disaster. • Provide special attention to those places where the water supply were breached and repaired during the last disaster last year. • Deployed adequate team in the most vulnerable areas. • Opening the blockage of sewerage and sewage system during disaster to control the disease and epidemics. 	<ul style="list-style-type: none"> • Supply the safe drinking water at the affected areas immediately after the disaster. • Maintenance of Water works immediately after the disaster. • Cleaning the sewerage system with adequate disinfection to prevent disease and epidemics.

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

14.5 Format for First Information Report (FIR)

ON OCCURRENCE OF NATURAL CALAMITY
(To be sent to the Special Relief Commissioner, Odisha
within/maximum 18 hours of occurrence of calamity)

From: District _____

Date of Report: _____

To

The Special Relief Commissioner, Odisha
State Emergency Operation Centre (SEOC)
Rajiv Bhawan, Ground Floor, Unit-5
Bhubaneswar
Fax No: 0674-2534176
E-mail: srcodishagov@gmail.com

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

Authorised Signatory
District Emergency Operation Centre
(DEOC)

District:.....

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

14.6 Daily Status Report on Relief/Restoration Measures Undertaken by Departments

1. Health & FW Department

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

2. RD Department

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

3. FS & CW Department

-Qtls. Chuda, Qtls. Gur supplied to Blocks

District	Chuda (Qty.in quintals)	Gur (Qty.in quintals)

- Qtls. of Rice has been allocated to the Districts mentioned below:

Blocks	Quantity allocated (in quintal)
Total	

4. Fisheries & ARD Department

- Animals vaccinated :
- Animals treated :

Damages to Roads/River Embankments

1. Rural Development 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. Water Resources Department
 - Breach occurred :
 - Breaches closed :
 - Breach closing work in progress :



Restoration & Rehabilitation

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

15.1 Standard Operating Procedure: Restoration & Rehabilitation

Name of the Department	Normal Time
Collector / ADM / Emergency Officer - R&DM	<ul style="list-style-type: none"> Restoration of Critical Infrastructures to bring situation to normalcy. Ensure Restoration of roads & channels, Communication network, Electricity & Energy. Ensure health in the affected areas. Adopt sustainable mitigation measures in the restoration activities.
CDM & PHO - F&FW	<ul style="list-style-type: none"> Carry out Disease surveillance measures to check epidemic prone diseases. Disinfection of drinking water & measures for health & hygiene. Rehabilitation of deprived & destitute. Carry out Trauma & Psycho-social counselling.
Superintendent of Police - Home	<ul style="list-style-type: none"> Security arrangements for relief materials in transit and in camps etc. Senior police officers to be deployed in control rooms at district levels. Deploy personnel to guard vulnerable embankments and at other risk points.

	<ul style="list-style-type: none"> • Arrangement for the safety and emergency traffic management. • Coordinate search, rescue and evacuation operations with the administration. • Maintenance of law and order in the affected areas. • Assist administration in taking necessary action against hoarders, black marketers etc.
EE - RWS&S	<ul style="list-style-type: none"> • Immediate restoration of the drinking water. • Monitoring of water quality and determination of the chlorine residual in public water supplies. • Damage assessment and take actions for long term safe water system in the vulnerable areas. • Repair and reconstruction of the drinking water supply, sanitation and sewerage systems.
EE - Irrigation Division - WR	<ul style="list-style-type: none"> • Assessment and restoration of the damaged infrastructures. • Safe guard agriculture by making temporary restoration arrangements to the affected irrigation sources. • Construction of dams, check dams and irrigation/drainage canals for long term irrigation purpose. • Suggest measures for strengthening the river banks and canal bunds to avoid breaches.
CDAO - A&FE	<ul style="list-style-type: none"> • Quantify the losses of the crops and the measures to be taken to recoup the same- Crop loss should be properly estimated with agriculture, Revenue and Statistical staff to quantify the loss. • Assist the farmers to sow the less time period crop to recover the loss- The field functionaries should be engaged to assess the area for taking contingent crop inteh input subsidy . • Execute the schemes to eliminate the drought effects- Short duration paddy/Maize/Biri/Arhar crop should be taken up to indemnify crop loss. • Provide suitable technical device to the vulnerable cropped area- CM Package and any other departmental schemes for flood and drought effected area should be taken up to mitigate the loss .
DDH - A&FE	<ul style="list-style-type: none"> • Quantify the losses of the crops and the measures to be taken to recoup the same. • Assist the farmers to sow the less time period crop to recover the loss. • Execute the schemes to eliminate the drought effects. • Provide suitable technicaladvice to the vulnerable cropped area and farmers.
EE - RWD	<ul style="list-style-type: none"> • Carry out the detail technical assessment of the affected areas and preparation of recovery plan • Construct the temporary shelters in the affected areas • Repair and reconstruction of the damaged roads and buildings. • Creation of alternate road network connects vulnerable areas and selected nodal centres.

EE - PWD	<ul style="list-style-type: none"> • Sanction and entrustment of temporary restoration works. • Install adequate road signs to guide and assist the drivers. • Immediate restoration of the affected infrastructure i.e. roads, bridges, lifeline buildings etc. • Assessment of damages and reporting in higher authorities and preparation of its estimations. • Creation of reliable road networks to serve as access to temporary transit and relief camps and medical facilities for disaster victims.
DTO - Telecom	<ul style="list-style-type: none"> • Quick assessment of damages to communication network. • Immediate restoration of temporary communication facilities. • Ensure all communication equipment installed at DEOC. • Adopt sustainable measures to protect telecom infrastructure in the damage prone areas. • Bring normalcy in the affected area and development of capacities.
CDVO - ARD	<ul style="list-style-type: none"> • Carry out Disease surveillance measures to check epidemic prone disease. • Disinfection of drinking water and measures for health & hygiene of livestock. • Rehabilitation of deprived and destitute livestock. • Carry out Treatment and extension programme.
RTO - T&C	<ul style="list-style-type: none"> • Assist in transportation of the reconstruction materials. • Restoration of transportation facilities. • Rectification of hazard prone zones and adopt risk coverage. • Enforcement of traffic rule and road safety standards in affected areas. • All bus depots should be equipped with emergency communication equipments.
DFO - F&E	<ul style="list-style-type: none"> • Assessment of the affected areas and preparation of recovery plan and implementation. • Improvement of the Vegetation coverage and Biomass production to meet the multiple community need like food, fuel wood, fodder etc. • Regeneration of degraded village Common Property Resources like village forest, waste land through the gap filling and block plantation of multipurpose tree species • Strengthening of the community based organizations like VSS through various training, exposure, orientation/ sensitization and ensures the involvement of the local community in joint forest management for regeneration, protection, etc. • Fair Collection and marketing of the NTFP products. • Ensure restricted grazing of the cattle herd in the forest area to protect the natural regeneration of the forest ecosystem.
Railway-T&C	<ul style="list-style-type: none"> • Rapid access to the site of the accident. • Effective site management by making best use of on-board and locally available resources. • Quick extrication of victims and speedy transportation of victims to hospitals.

	<ul style="list-style-type: none"> • Proper communication system both for assisting the stranded passengers as well as provide timely information to the media.
EE - Southco Utility	<ul style="list-style-type: none"> • Disconnect electricity after receipt of warning. • Attend sites of electrical accidents and assist in undertaking damage assessment. • Stand-by arrangements to ensure temporary electricity supply. • Inspection and repair of high tension lines /substations/transformers/poles etc. • Ensure the public and other agencies are safeguarded from any hazards, which may have occurred because of damage to electricity distribution systems. • Restore electricity to the affected area as quickly as possible. • Replace / restore of damaged poles/ salvaging of conductors and insulators.
EE - PHED	<ul style="list-style-type: none"> • Constitution of teams for damage assessment and immediate restoration of drinking water. • Monitoring of water quality and determination of the chlorine residual in public water supplies. • Appropriate actions for long term safe water system in the vulnerable areas. • Repair and reconstruction of the drinking water supply systems. • IEC campaign for safe drinking water and sanitation to prevent any health hazard in normal time in general and during disaster in particular.
DEO -S&ME & DEO - HSE	<ul style="list-style-type: none"> • Identification and preparation of list of children affected in disaster • Damage assessment for repair and reconstruction of school infrastructures. • Department and the field level institution prepare contingent Action Plan for reconstruction. • Damaged buildings, hostels should be assessed and take steps for restoration of education.

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

15.2 Damage Loss Assessment

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

15.3 Calculation of Assistance for Agricultural Input Subsidy - SMF

(Rs. In lakh)

Sl. No.	Name of the Block	Area held by SMF (inHa.)	Total Agricultural area Affected[inHa.]	Total agricultural area where crop loss is > 50%	Crop Loss 33% & above			Expenditure incurred			Total
					Irrigated [in Ha.]	Rainfed [in Ha.]	Perennial	Irrigated @Rs.13,500/- per Ha.	Rainfed @Rs.6800/- per Ha.	Perennial@Rs.18000/- per Ha.	
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
Total											

15.4 Agricultural Input Subsidy - Farmers other than SMF

Farmers Affected First Year

(Rs. in lakh)

Sl. No.	Name of the Block	Area held by farmers other than SMF (in Ha.)	Crop loss > 33%							
			No. of Farmers	Irrigated area in Ha.	Amount spent @ Rs.13,500/- per Ha.	Rainfed Area in Ha.	Amount spent @ Rs.6800/- per Ha.	Perennial Area in Ha.	Amount Spent @ Rs.18000/- per Ha.	Total Amount Spent
1.										
2.										
3.										
4.										
5.										
Total										

15.5 Farmers Affected by Successive Calamities

(Rs. in lakh)

Sl. No.	Name of the Block	Area held by farmers other than SMF (in Ha.)	Crop loss > 33%							
			No. of Farmers	Irrigated area in Ha.	Amount spent @ Rs.13,500/- per Ha.	Rainfed Area in Ha.	Amount spent @ Rs.6800/- per Ha.	Perennial Area in Ha.	Amount Spent @ Rs.18000/- per Ha.	Total Amount Spent
1.										
2.										
3.										
4.										
5.										
Total										

15.6 Animal Husbandry (Replacement of Animals)

(Rs. in lakh)

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

Contd...

15.7 Assistance Sought for Repair/Restoration of Damaged Houses

(Rs. in lakh)

Sl. No.	District	Fully Damaged/ Severely Damaged						Partially (15% & More)			Huts		Cattle shed attached with house		TOTAL	
		Plain Areas			Hilly Areas			Pucca	Amount @ Rs. 5200/-	Kutchra	Amount @ Rs. 3200/-	Nos.	Amount @ Rs.-4100/-	Nos.		Amount @ Rs.-4100/-
		Pucca	Amount @ Rs.95100/-	Kutchra	Amount @ Rs.95100/-	Pucca	Amount Rs. 101900/-									
	Total															

15.8 Assistance for Provision for Temporary Accommodation, Food, Clothing and Medical Care

Sl. No.	Name of the District	Average No. (in a day) of relief camps	Average duration of operation of relief camps	Average No. of people accommodated per day in the relief camps	Expenditure incurred on (Rs. in lakh)				
					Temporary Accommodation	Food	Clothing	Medical Care	Total Expenditure
	Total								

15.9 Extent of Damage due to Natural Calamities

District :

Nature and Period of Natural Calamity :

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

15.10 Format for Working out the Requirements under the Head of Repair of Damaged Infrastructure of Immediate Nature

(Rs. In lakh)

Sector		Damage in physical terms	Requirement of funds for repair of immediate nature	Out of (3), amount available from annual maintenance budget	Out of (3), amount available from related schemes/programs/ other sources	Out of (3), amount proposed to be met from CRF/NCCF in accordance with list of works indicated in the Appendix to the revised items and norms
Roads & Bridges	PWD Roads	No. of breaches – Length of Road damaged – No. of culverts damaged – No. of culverts washed away –				
	Rural Roads	No. of Roads damaged – Length of Road damaged – No. of breaches – No. of CD/Bridge damaged – No. of CD/Bridge washed away –				
	Urban Roads	Length of drain damaged – Length of Road damaged – No. of culverts damaged –				
	Panchayat Roads	No. of Roads damaged – Length of breaches – Length of Road damaged – No. of culverts damaged – No. of culverts washed away –				
	River/Canal Embankment Roads	No. of Roads damaged in river embankments – Length of Road damaged in river embankments – No. of Roads damaged in canal embankments – Length of Road damaged in canal embankments –				
Drinking Water	Rural Water Supply	No. of tube wells damaged – No. of Platforms damaged –				

Supply		No. of Rural pipe water supply system damaged -				
	Urban Water Supply					
Irrigation	River Embankment	No of breaches – Length of breach in Km – No. of partial damage –				
	Canal Embankments	No. of breaches – Length of breach in Km – No. of partial damage –				
	MI projects	No. of Minor Irrigation projects damaged-				
	Clearance of Drainage channels	Length of drainage channels congested with vegetative materials –				
Primary Education	Primary School Buildings	No. of Primary School buildings damaged –				
PHCs	PHCs	No. of Primary Health Centers damaged –				
Community assets owned by Panchayats	Community Halls	No. of Panchayat Ghar/Community Hall damaged –				
	AWWCenters	No. of AnganwadiCenters damaged –				
Power	Electrical lines	No. of Primary sub-stations damaged – 33 KV lines damaged – 11 KV lines damaged – Distribution Transformers damaged – LT lines damaged –				
Total						



Recovery

The focus is to enable the area to start functioning again. A series of long term activities framed in the Reconstruction & Rehabilitation 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, PRI members, non-government organisations and especially the affected people, their families and the community.

- 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 and other sources of the damaged infrastructures.
- Explore opportunities for external aids like International Agencies, Civil Society Organisations, Non-Government Organisations and Corporate Sectors.
- Allocate funds for the stabilisation of the repaired & reconstructed infrastructures.
- Integrate Climate change & Disaster Risk Reduction features in the recovery programmes

The Collector & DM will be the Coordinator of all the Recovery activities in the District. The role of the Collector in recovery phase will be:

- To monitor the management of the recovery process.
- To ensure implementation of the recovery plan by line departments and blocks.
- To minimise overlap and duplication through effective service delivery.

The Recovery process consists of several related activities such as:

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

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

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



Financial Arrangement

17.1 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 Figure No. 8.1 Page No. 237 of Volume-II for NDRF Items and Norms)

17.2 State Disaster Response Fund (SDRF)

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

(Please refer Figure No. 8.1 Page No. 237 of Volume-II for SDRF Items and Norms)

17.3 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.

17.3.1 Cases Eligible for Assistance under CMRF

17.3.1.1 Poor and persons in distress

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

17.3.1.2 Aged, differently abled, orphans, AIDS affected

Assistance for the relief and rehabilitation of the aged, differently abled 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.

17.3.1.3 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.

17.3.1.4 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.

17.4 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 State Executive Committee (SEC). However, funds towards pure relief are released under orders of Special Relief Commissioner/ Chief Secretary and the same is placed before the SEC 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.

17.5 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.

17.5.1 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.

17.5.2 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, short comings, 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.

17.6 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 1st and 3rd 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 may very crucial to build over resilience of communities in the context of the district.

Table : 17.1
Different State and Central Government Schemes and Programmes

Sl. No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1.	Scheme for Legal Services to Disaster Victims through Legal Services Authorities	Social Justice	NALSA	To provide legal aid to the victims of disaster. To help the victims and the administration for reducing risk and assisting them to adopt disaster mitigation policies and strategies.
2.	Pradhan Mantri Fasal Bima Yojana (PMFBY)	Crop Insurance	Agriculture Insurance Company of India (AICI)	To protect the farmers against the losses suffered by them due to crop failures on account of natural calamities, such as droughts, floods, hailstorm, storms, animal depredation, etc.
3.	Pradhan Mantri Gram Sinchai Yojana (PMGSY)	Irrigation	AC & FW	Irrigating the field of farmers and improving water use efficiency and Enhance crop per drop by implementing water-saving technologies and precision irrigation.
4.	Sansad Adarsh Gram Yojana (SAGY)	Infrastructure Development	MoRD	Development of model villages and Social, cultural, economic and infrastructure developments in the villages.
5.	Swachh Bharat Mission (SBM)	Hygienic Environment	MoDW&S	For clean and hygienic environment and Protection health.

6.	Soil Health Card Scheme	Soil Productivity	AC & FW	Complete evaluation of the quality of soil and Corrective measures to improve productivity.
7.	Janashree Vima Yojna	Life Insurance	Life Insurance Corporation of India	To provide life insurance protection to the rural and urban poor persons below poverty line and marginally above the poverty line.
8.	Pradhan Mantri Suraksha Bima Yojana (PMSBY)	Life Insurance	Bank	To provide insurance protection and risk coverage on accidental death and disability.
9.	Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY)	Life Insurance	Bank	To provide insurance protection on death.
10.	Pradhan Mantri Awas Yojana (PMAY) - Housing for all by 2022	Housing	PR & DW	To construct disaster resilient houses and vulnerable risk reduction.
11.	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	Rural Employment	PR & DW	To reduce economic vulnerability and creation of rural infrastructures.
12.	National Health Mission (NHM)	Health	Health & FW	To provide accessible, affordable and quality health care services to all to reduce health hazards.
13.	Pradhan Mantri Gram Sadak Yojana (PMGSY)	Rural Road	PR & DW	To create all weather road connectivity to remote and unconnected villages.
14.	Sarva Shiksha Abhiyan (SSA)	Education	School & ME	To provide education and school infrastructures at the infrastructure gap village/ habitations.
15.	Gopabandhu Gramin Yojana (Bijli, Sadak & Pani)	Water, Electricity & Road	PR & DW	To provide connectivity to critical gaps of infrastructures in the habitations to reduce vulnerability.
16.	Biju Setu Yojana (Rural Bridges)	Bridges	Rural Development	To provide an effective all weather road connectivity in remote areas & to reduce vulnerability.

17.	Integrated Child Protection Scheme (ICPS)	Child Protection	W&CD &MS	To provide a safe and secure environment for overall development of the children and Protection of child rights.
18.	Mission Shakti	Women Empowerment	W&CD &MS	Capacity building of women on adaptation and risk reduction behaviours through self-help institutions.
19.	Odisha PVTGs Empowerment & Livelihood Improvement Programme (OPELIP)	PVTGs/PTGs Empowerment & Livelihood Improvement	ST&SC	To provide support to the PVTGs/ PTGs for livelihood improvement and empowerment of the community.
20.	Odisha Tribal Empowerment & Livelihood Programme Plus (OTELP Plus)	Tribal Empowerment	ST&SC	To create disaster resilient social capital and provide livelihood support to the tribal and vulnerable community.
21.	DAMAN (Durgama Anchalare Malaria Nirakaran)	Health	Health & FW	To control malaria in inaccessible areas to reduce disease and fatality.
22.	Biju Krushak Kalyan Yojana (BKKY)	Health Insurance for Farmers	Agriculture & FE and Health & FW	To provide financial support and low cost health care services to farmers family to reduce health hazards.
23.	Pradhan Mantri Ujjwala Yojana (PMUY)	Women Health	PR & DW	To provide free LPG connection to BPL women for smoke and pollution free environment and protect women health.
24.	Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY)	Training & Skill Development	MoRD	To develop skills and productive capacity of the rural youth from poor families.
25.	Finance Commission Grant	Infrastructure Development	PR & DW	10% of the fund will be dedicated to disaster related projects.

17.7 Roles of District Planning Committee on Financial Outlay on Mainstreaming Disaster Risk Reduction (DRR) in Development Programmes

In Rayagada, District Planning Committee (DPC) is prioritising to focus on faster, sustainable and more inclusive growth based on the objectives of people accessing developmental facilities, eliminating poverty and creating self-reliant society at the grassroots level as per the Vision 2020. Therefore, for consolidating plans prepared by Panchayats and Municipalities in the district into District Plans. The Orissa District Planning Committee Act, 1998 and Orissa District Planning Committee Rules, 2000 have been enacted for the effective planning process at district level. Subsequently, DPMU, Rayagada have been set up in the district for preparing Comprehensive District Plans. In this backdrop, the DDMP-2020 focuses on mainstreaming Disaster Risk Reduction (DRR) in all the development programmes. Further, while the issues of mainstreaming Climate Change Adaptation (CCA) has emerged as a new area of focus for building resilience of vulnerable communities. Climate adaptive planning spans across departments and at all levels. CCA, as adjustments in human and natural systems in response to actual or expected climatic variation, with a view to moderating harm or exploiting beneficial opportunities, is an area of growing concern for the district.

Following roles of DPC would be articulated to be reduced the disaster risk at various levels and make certain that,

- All the development programmes and projects are designed with evident consideration for potential disaster risks and to resist hazard impact in the district.
- All the development programmes and projects do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment.
- All the disaster relief and rehabilitation programmes and projects are designed to contribute to developmental aims and to reduce future disaster risk.

Further, the following procedure and methodology for mainstreaming of DRR and CCA in District Level Planning should be considered for disaster risk concern as a part of the project appraisal process and the essential steps in,

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

Disaster risk concerns should be considered in all components of project appraisal analysis - financial, economic, environmental, social, institutional and technical - reflecting

the fact that vulnerability to natural hazards is complex and multi-faceted and so needs to be viewed from all angles, incorporated into broader planning tools, such as logical framework analysis and results-based management frameworks, and reflected in the development of monitoring and evaluation indicators.

17.8 Funds Provision for Disaster Preparedness & Capacity Building

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

However, as every department/organisation have to prepare their own Disaster Management Plan (DMP) for disaster preparedness and to reduce the risk of vulnerability. Therefore, they must incorporate at least 10% of the organisation's financial budget to plan and carry the disaster risk reduction activities. Departments/organisations may have lots of capacity building activities, hence, capacity building activities should be incorporated coinciding disaster risk reduction programmes.



Standard Operating Procedures (SoPs) for District level Officials

I. SoPs for District level Officials for management of Heat Wave Conditions

1. Collector/ ADM/ PD, DRDA

- i. Updating the Heat Action Plan for the District in the month of January.
- ii. Action plan for mitigating water scarcity problems in different towns and villages to be prepared in the January.
- iii. Water scarcity areas to be identified in advance and supply of drinking water and for other uses through tanker to those areas to be ensured.
- iv. Prepare list of water tankers and earmark them to water scarce area wise.
- v. Preventive maintenance of tube wells has to be ensured.
- vi. Suitable arrangements also to be made to promptly respond to reports of water scarcity anywhere in the district.
- vii. Ensuring Public Awareness campaign through electronic and print media on heat wave precautionary measures (Dos and Don'ts) from February onwards.
- viii. Involve Civil Society Organization and Panchayati Raj Institutions (PRI) members in awareness campaign and other measures to tackle the situation arising out of Heat Wave.
- ix. Identification and trace out of the high-risk vulnerable pockets of district prior to the heat wave.
- x. Issue directions to line departments officials for taking measures to tackle heat wave situations in the month of February.
- xi. Issue direction to BDOs to convene meeting of PRI representatives-in the month of February.
- xii. Issue direction to ULBs/GPs for opening of “*Jal Seva Kendra*” (Water Kiosk) at market places, bus stands and other congregation points. Ensuring sanitation and hygiene of water distribution points.

- xiii. Convene meeting of the Civil Society Organization to seek their assistance in Heat Wave mitigation activities including opening of “*Jal Seva Kendra*”.
- xiv. Issue direction to CDVO/BDOs for construction/repair of vats for ensuring drinking water for roaming livestock.
- xv. Issue instructions to BDOs, District Education Officer, District Social Welfare Officer and District Child Protection Officer for making drinking water arrangements in all schools.
- xvi. Principals of all Government and Private colleges are to be instructed to make drinking water arrangements in their institutions.
- xvii. Instruct and direct the leading PSUs & Industries of the district to supply potable water in the water scarcity villages of their periphery under CSR initiatives.
- xviii. Ensuring functioning of control room at District office, DHH, Block /Tehsil, CHC/PHC round the clock.
- xix. Rescheduling of timing of classes and examination in schools and colleges during summer as per the directions given by SRC/School & Mass Education Department.
- xx. DSWO/CDPO/Dist. Child Protection Officer are to be instructed to facilitate availability of drinking water and health needs in all Child Care Institutions (CCIs) in the district.
- xxi. District Labour Officer (DLO), PD, DRDA, the Executive Engineer, Rural Works, the E.E. R&B to ensure rescheduling of the timing of working hours and make necessary arrangements for supply of drinking water, ORS packets and provision of rest shed at worksites as per directions of SRC/ Labour and ESI department.
- xxii. Ensuring restriction of working hours in works under MGNREGA and other schemes.
- xxiii. Give instructions to the Regional Transport Officer (RTO) to ensure availability of water and ORS packets in public transport vehicles. Timing of public transport services and plying of buses to be rescheduled as per directions of SRC/ C&T (Transport) Department
- xxiv. To issue instruction to the Electricity Distribution Company to ensure uninterrupted power supply during heat wave period. Uninterrupted power supply to be maintained for critical facilities such as hospitals, urban health centres and water supply facilities
- xxv. If any information on casualty is received or report published in newspaper, it should be immediately enquired jointly by the medical and revenue officers
- xxvi. Prompt steps are to be taken for payment of ex-gratia to the bereaved family where, upon enquiry, the death is confirmed to be due to sunstroke
- xxvii. Instruct the departments like CDM & PHO / CDVO /Executive Engineer, CESU / General Manager, WATCO and other related departments to submit the Heat Wave management action plan in the month of February

2. Chief District Medical & Public Health Officer (CDM & PHO)

- i. Facilitate training programs for the CHC staffs, ANM, ASHA workers on treatment of patients affected with heat/sun stroke
- ii. IEC activities and Public Awareness in the districts relating to Heat Wave conditions/ advisories to be done from the month of February onwards
- iii. Check hospital readiness prior to the heat wave seasons start in the district from CHC level to DHH
- iv. Take necessary steps for albedo/white painting of roof tops of hospitals, Community Health Centres (CHCs), Public Health Centres (PHCs) and patients resting areas in coordination with the concerned engineering Departments
- v. Sufficient Storage of life savings medicines, ORS in dispensaries, PHCs, CHCs and District Head Quarter Hospitals to meet any crisis. ORS to be available with ASHA and AWWs
- vi. Arrangement of separate wards and beds and cool rooms for treatment of heat stroke patients in different hospitals
- vii. Ensure 24x7 ambulance services 108 for the treatment of heatwave & heat stroke patients with reaching at the patients with shortest time for that to find out alternative routes in an advance.
- viii. Continuous monitoring and preventive measures against diarrhoea and other health hazards during summer season
- ix. Daily reporting of cases and deaths to H&FW Department, SRC and Collector
- x. Copy of the post-mortem report of heat wave casualties to be shared with the Tahasildars to make the process of ex-gratia payment fast and smooth

3. Executive Officers - Municipalities/ Urban Local Bodies (ULB)/ Development Authorities

- i. Preventive maintenance of tube wells/pipe water supply-arrangements for distribution of water through water tankers in the water scarce areas
- ii. Awareness generation on Heat Wave Do's and Don'ts with Special attention to slums areas
- iii. Opening of "*Jal Seva Kendra*" (Water Kiosk) at market places, bus stands, slums, vending zones and other congregation points-Ensuring sanitation and hygiene of water distribution points
- iv. Identification of suitable resting places for street vendors during summer
- v. Increasing access to public parks, public libraries for providing cool resting places for the public

- vi. Regular sprinkling of water on roads
- vii. Promote cool roof initiatives (albedo painting of roofs)
- viii. Encourage use of K-glass, doubly gazed glass in buildings and vehicles.
- ix. Setup the electronic display boards in the prominent places to broadcast the temperate and heat wave related information.
- x. Engage the leading CSO/ NGO in creation of the public awareness & street play on heat wave warning the urban areas
- xi. Suspend non-essential supply of water (other than cooling and drinking) in the city by taking permission of the collector & DM of the district

4. District Labour and Employment Officer (DLO)

- i. Monitoring and enforcement of rescheduling of working hours as per the instructions of SRC/ L&ESI Department
- iii. Monitoring provision of sufficient drinking water, ORS packets and first-aid, rest sheds at worksites iv. Instruct the Project Directors of all National Child Labours Projects (NCLPs) to reschedule the school timing for special schools running under NCLP in accordance with the timings prescribed by SRC/ School and Mass Education Department
- v. To ensure creation of awareness among the labourers and workers on risks, signs and symptoms of heat stress during probable heat wave like situations, preventive and precautionary measures including that through constructions agencies/contractors vi. Ensure the supervision of construction sites, quarries, factories and other vulnerable worksites, particularly during high temperature periods, to enforce labour laws related to heat safety

5. District Education Officer (DEO)

- i. Monitoring and enforcement of school timings and other restrictions.
- ii. Promoting IEC activities on Heat Wave prevention and management in schools
- iii. Ensuring training of the teachers and conduct of mock drills among students on health risks and management during heat waves through workshops, orientation programmes, special classes, etc.
- iv. Ensuring provision of safe drinking water, ice packs, ORS, etc. in schools and examination centres
- v. Encourage concerned authorities/schools for Albedo paintings on roofs of schools
- vi. Encourage students to bring their own water bottle while coming to school

6. Executive Engineer-Electrical

- i. Identify overload energy points/transformers and take precautionary measures for uninterrupted power supply
- ii. Ensuring uninterrupted power supply for critical facilities such as hospitals, urban health centres and drinking water supply facilities
- iii. Keep energy gangs, equipment, spares ready at strategic locations for earliest restoration of power supply in case of outages
- iv. Setting up timing for power shedding, if absolutely required, and ensuring announcement of power shedding sufficiently in advance
- v. Record and monitor the peak load of primary substations/feeders regularly, so as to avoid breakdown due to failure of power transformers/ overloading and consequent snapping of conductors in co-ordination with competent authorities
- vi. Instruct all Junior Engineers (JEs)/Sub-Division Officers (SDOs) to monitor and record peak load status of the Distribution Transformers (DTs) (250KVA & both), so as to avoid burning of DTs due to over loading and consequent power outages thereto.
- vi. Keeping the stock of transformers in different strategic places to meet the urgent need

7. Regional Transport Officer (RTO)

- i. Taking initiatives on creating awareness among drivers and helpers of vehicles on Heat Wave
- ii. Encourage the Bus/Truck owner's association of the district and the local NGOs to involve themselves in public awareness campaign on Heat Wave
- iii. Ensuring functioning of Control room at RTO office round the clock during Heat Wave period
- iv. Issue instructions for restriction of Bus plying times during peak hours and rescheduling of timing of the public transport as decided by SRC/ C&T (Transport) department
- v. Enforce and monitor provision of safe drinking water, ice packs, ORS packets in buses and cool resting places at bus stops
- vi. Facilitate setting up of "*Jal Seva Kendra's*" (water kiosk) at bus stops and bus stands
- vii. Conducting regular meetings with stakeholders for sorting out issues pertaining to Heat Wave conditions
- vii. Ensuring all the buses plying in his/her jurisdiction must have affixed with the awareness material pertaining to heat wave

8. Executive Engineers-Water Resources

- i. Prepare an action plan for storage of water in the reservoirs to meet the water requirement of drinking water supply facilities and irrigation
- ii. Monitoring release of water in canals for public use, to increase the underground water level and to reduce the atmospheric temperature during summer

9. District Mining Officer (DMO)

- i. Issuing directives for heat wave prevention and management in industries and mines
- ii. Give instructions for and facilitate water sprinkling in mines and other areas to settle down the suspended particulate matter (SPM)

10. District Tourism Officer (DTO)

- i. Issue instructions and monitor registration of tourists visiting the district
- ii. Disseminate safety tips (Do's and Don'ts) on Heat Wave at tourist points during summer
- iii. Ensure availability of water and rest sheds at tourist places
- iv. Rescheduling of visiting hours at tourist places to avoid heat stress to the visitors

11. District Social Welfare Officer (DSWO)

- i. Use the Village Health Nutrition Day (VHND) for creating awareness and educate young girls and mothers regarding the dangers of Heat Wave, its related health impact and precautionary measures to be taken
- ii. Ensure display of IEC materials at Anganwadi Centres
- iii. Encourage Anganwadi workers to create awareness on Heat Wave with special focus on infants, children below five years, pregnant women, lactating mothers and geriatric population to protect them from dehydration.
- iv. Ensure provision of drinking water and first aid at all the Anganwadi Centres, old age homes and Child Care Institutions (CCIs)
- v. Sufficient ORS to be kept in Anganwadi Centres and with AWWs

12. Divisional Forest Officer (DFO)

- i. Identify water scarce locations in forest and prepare a plan of action for ensuring availability of water for animals and human habitation facing water scarcity inside reserved/protected forest
- ii. Keeping continuous watch in the forest areas to avoid forest fire.

- iii. Issue instruction and ensure arrangements for protection of the zoo animals from heat wave
- iv. Give instructions for conducting village meetings through NGOs prior to the hot weather seasons for making the villages aware for not setting forest fire
- v. Ensure proper afforestation (greenery) in public places
- vi. Formation a Fire Surveillance team to watch & ward in the forest fire.
- vii. Identification and basic orientation training to the local volunteers on controlling forest fire.

13. Project Administrator, Integrated Tribal Development Agencies (PA, ITDAs)

- i. Generate awareness through IEC activities on Heat Wave prevention and management in tribal schools
- ii. Ensure availability of safe drinking water, ORS packets, Ice packs and other required first aid materials in tribal schools
- iii. Monitor and enforce school and examination timing as directed by SRC/SC&ST Department
- iv. Encourage concerned authorities/schools for albedo paintings on roofs of schools and hostel buildings

14. Chief District Veterinary Officer (CDVO)

- i. Issue advisory on animal care during heat wave by making provisions for drinking water for animals and birds with timely replacement at sheds
- ii. Generate awareness among animal owners for feeding the animals in early morning or during evening hours to avoid heat stress
- iii. Issue advisory for farmers for not leaving their animals outside the shed during peak hours of heat
- iv. Encourage the owners of livestock and poultry farms to plant bushy trees near the sheds
- v. Advisory to be issued for mixing electrolytes in drinking water of animals and birds to avoid dehydration
- vi. Issue instructions to the concerned authorities not to vaccinate or deworm the animals and birds during heat hours of the day to avoid any extra stress
- vii. Issue advisory to the farmers for restraining the animals from hard work in open areas during heat hour of the day
- viii. Mobile Veterinary Units must be kept in readiness to attend the emergency cases

II. SoPs for District level Officials for management of Drought

1. Collector

- i. Submission of weather and crop situation report to the O/o SRC as per the provisions laid down under the paragraphs 24 and 25 of ORC
- ii. Convene meeting to review measures in line with the Crisis Management Plan
- iii. Direct all the district level line departments to participate in drought management, prepare contingency plans and mobilize their staffs and resources
- iv. Prepare District Agriculture Contingency Plans
- v. Implement all the decisions of Government related to drought management on the ground through line departments
- vi. Monitor all the indicators of drought on the ground such as collection of daily rainfall data, water storage, water availability, seeds supply and progress of sowing operations
- vii. Monitor local information related to demand of relief employment, prices of food grains and availability of fodders
- viii. Ensure timely collection of field information and ground truthing of sensor-based data and submission of periodical reports on all the important indicators to the Government
- ix. Assess the situation related to scarcity of drinking water and fodder and issue appropriate instructions regarding reservations and supply of drinking water, procurement and sale of fodders and setting up of fodder depots and cattle camps
- x. Supervise reservoir management with the help and support of Water Resources Department and decide the volume and timing of release of water in the canals
- xi. Review the progress of drought relief measures in the district from time to time
- xii. Make arrangements for efficient and timely distribution of food grains after declaration of drought
- xiii. Prepare relief employment plan in consultation with agencies

2. Chief District Medical & Public Health Officer (CDM&PHO)

- i. Organize Health Camps in drought affected areas to screen people for common ailments
- ii. Arrange clinical management of cases due to waterborne and vector-borne diseases
- iii. Deploy Rapid Response Teams (RRTs) for managing any outbreak of water borne or vector-borne diseases and surveillance through State Integrated Disease Surveillance Programme
- iv. Ensure laboratory facilities for diagnosis of water borne and vector borne diseases through public health laboratories, district headquarters hospitals, laboratories and medical colleges

- v. Promote awareness generation on risk of water borne and vector-borne diseases in the community
- vi. Tracking regularly the children health through ANM/ASHA workers at the villages

3. Chief District Veterinary Officer (CDVO)

- i. Ensure availability of fodder, feed, and water for cattle
- ii. Ensure quality of feed and fodder supplied through the fodder depots and cattle camps
- iii. Undertake awareness campaign for farmers in drought-affected areas on cattle health relating to fodder, feed, vitamin, minerals and other sanitation issues
- iv. Ensure provision of minerals, vitamins, medicines and vaccines to the livestock owners
- v. Carry out necessary inspection and check in drought-affected areas to ensure that cattle are maintained in good health
- vi. Depute Livestock Inspector (LI) for checking the health of cattle at least once in a week and undertake all precautionary measures to avoid outbreak of any disease

4. Chief District Agriculture Officer (CDAO)

- i. Ensure preparation/ updating District Level Crop Contingency Plan in consultation with Krishi Vigyan Kendra (KVK)
- ii. Identify and assess the requirement for important agricultural inputs like- seeds, fertilizers and pesticides at subsidised rates for the farmers through Primary Agricultural Cooperative Societies (PACS) and private dealers
- iii. Sufficient prepositioning of drought resilient seeds and fertilizers in different strategic locations
- iv. Promote awareness on crop insurance and ensure timely enrolment of non-loanee farmers under “*Pradhan Mantri Fasal Bima Yojana*” (PMFBY)
- v. Apprise the District Drought Monitoring Cell (DDMC) on crop weather situation on weekly basis
- vi. Ensure rapid damage assessment during early season drought and facilitate availability of seeds for immediate sowing by the farmers
- vii. Promote diversification of crops with suitable low water consumption crops like- millets and oilseeds over rice in the drought prone areas
- viii. Capacity building of farmers through Agricultural Technology Management Agency (ATMA) for alternate livelihood options like mushroom cultivation, goatery, poultry, fruit trees etc. in the drought prone areas

III. SoPs for District level officials in the management of Floods and Cyclones

1. Collector/ADM/Sub-Collector

A. Pre Flood Arrangements

- i. Convene meeting of the DLCNC during the month of May
- ii. Make inventory of private/country/power boats to be used for relief and rescue operation
- iii. Ensure deployment of Boats at strategic points
- iv. Ensure regular submission of rainfall reports to the O/o SRC
- v. Ensure proper functioning of Control room round the clock with adequate manpower having knowledge about the situation
- vi. Identification of safe buildings to be used as flood shelters
- vii. Inventory of non-official and voluntary organization for carrying out relief and rescue operations
- viii. Identify the Low-lying areas and vulnerable population GP wise for rescue & relief
- ix. Instruct the R & B and other related works department to identify the low embankment area and repair them accordingly
- x. Awareness generation activities on flood Safety (Dos and Don'ts)
- xi. Ensure regular updating of IDRN

B. Arrangements during Flood

- i. Convene immediate meeting of all line department officials, all BDOs, Tahasildars, District heads of NDRF, ODRAF and Fire Services to review the situation and issue necessary instructions to all the concerned to make arrangements accordingly
- ii. Ensure evacuation of marooned and people residing in the low-lying areas to safe shelters and arrangement of free kitchen
- iii. Instruction to be given for taking special care of old, PWDs, women and children while evacuating
- iv. Instruction to be given to concerned authorities for evacuation of livestock and domestic animals to safe shelters
- v. Ensure provision of emergent relief for the affected people
- vi. Ensure arrangements of proper sanitation measures in the shelters
- vii. Timely submission of daily situation reports in the prescribed to the O/o SRC

C. Post Flood Management

- i. Issue instructions for proper disposal of dead bodies
- ii. Ensure damage and loss assessment of private properties and submission of report to Government for release of assistance
- iii. Review the restoration of damaged roads, bridges, embankments and other public properties
- iv. Ensure proper enumeration of house damage, crop damage and prepare list of beneficiaries along with their bank account numbers for immediate payment of disaster relief
- v. Ensure proper documentation of the relief and restoration activities for records
- vi. Submission of final damage report to the O/o SRC
- vii. Provision of employment to the able-bodied persons under the plan and non-plan schemes of the government ensuring labour employment programmes

D. On receiving Cyclone warning

- i. Convene immediate meeting of all line department officials, all BDOs, Tahasildars, District heads of NDRE, ODRAF and Fire Services to review the situation and issue necessary instructions to all the concerned to make arrangements accordingly
- ii. Instruct the BDOs to conduct Block level preparatory meetings involving Sarpanches/Secretaries of CSMMC/FSMMC, NGOs/CSOs and other stakeholders for taking up preparatory measures
- iii. Issue instructions for operation of the District Emergency Operation Centres and control rooms of other offices round the clock. Adequate manpower to be deployed in the control rooms
- iv. Issue notice to keep Govt. Offices to remain open, cancel government holidays (if required), recall the officers on leave (if required) and instruct government officials to remain alert
- v. Take steps for dissemination of correct and updated information on the impending cyclone to people with advice not to panic
- vi. Check the operability of the communication equipment like Satellite Phone, Fax and other communication systems
- vii. Beside satellite phones, if available other communication systems like Digital Mobile Radio (DMR), Satellite Based Mobile Data Voice Terminal (SBMDVT), Alert siren towers under EWDS project, are to be tested and kept in readiness
- viii. Ensure deployment of boats of Special Relief Organizations at strategic locations for transportation of relief materials and relief parties to inaccessible areas, if required.

- ix. Adequate quantities of POL to be arranged. POL stocks also to be arranged for boats of NDRF, ODRAF and Fires Services for carrying out SAR operations and distributions of relief materials.
- x. Instruct the concerned line department officials for making arrangements for power back up as power supply is likely to be cut off during Cyclones. Generator available in different offices including health institutions should be checked immediately and adequate fuel to be stored.
- xi. Instruct the BDOs to monitor the readiness of MCS/MFS and report to the Collector/ADM/DEO
- xii. Give instructions to the Sarpanch and Secretaries of CSMMC/FSMMC to organize the meetings of CSMMC/FSMMC and make proper arrangements in the MCS/MFS.
- xiii. Instruct the BDOs to coordinate with the Sarpanch and Secretaries of CSMMC/FSMMC to check the water supply systems, generators, inflatable tower lights, mechanical cutters, and other equipment available in the shelters to be put to test run and the defective one gets immediately repaired. Fuel arrangements for generators and other equipment to be made
- xiv. Give instructions to BDOs/Sarpanches and Secretaries of CSMMC/FSMMC to identify the vulnerable people and evacuating them to safe shelters
- xv. Instruct the BDOs for evacuating people living in kutcha houses or living near the coast or in low lying areas in the coastal and adjoining districts to safe shelters
- xvi. Instruct other line department officials to assess the situations and take steps to evacuate people
- xvii. Instruction to be given for taking special care of old, PWDs, women and children while evacuating
- xviii. In case of a possible storm surge instructions to be given for evacuating people living in coastal areas even in two-storied buildings after assessing the situations
- xix. Instruction to be given to concerned authorities for evacuation of livestock and domestic animals to safe shelters. No cattle should be left tied in kutcha houses
- xx. Issue instructions to the concerned authorities for checking the safety of residential schools, child care institutions, old age homes and similar institutions, and if necessary, the inmates may be shifted to shelters. Ensuring the availability of sufficient food stuffs, drinking water, essential medicines for the inmates of such institutions
- xxi. Instruct the BDOs, Presidents and Secretaries of CSMMC/FSMMC for arrangements of cooked food through free kitchen, safe drinking water, lighting, health & sanitation facilities at the MFS/MCS
- xxii. Instruct the concerned authorities for making arrangements for supply of safe drinking water to the people in the affected areas including measures to run the pumps with generators in absence of electricity and make necessary arrangements for supply of

water through portable water tankers and water pouches in the affected areas including the shelters

- xxiii. Give requisition to SRC for deployment of ODRAF / NDRF and Fires Services teams in the likely to be affected locations of the districts.
- xxiv. Arrangements for immediate food assistance in the shape of rice, chuda, gur etc. and other essentials items to be made
- xxv. Check availability of polythene, assess the requirement and requisition placed with SRC
- xxvi. Arrangements to be made for keeping the mobile health units and veterinary teams ready in advance for deployment in the affected areas. Feed and fodder to be arranged for the animals
- xxvii. Issue warning messages to the fishermen not to venture into the sea and recall the fishermen inside the sea to the shore
- xxviii. Entrust responsibilities to specific officers and teams to undertake the above tasks in seamless manners and monitor it frequently

E. During Cyclone

- i. Coordinating with BDOs and other Block Officials of affected areas and take stock of the situation
- ii. Disseminate latest updates on Cyclone at the earliest to the concerned as & when received from SEOC/State
- iii. Coordinate with SEOC, Army, Air Force, Navy, NDRF & ODRAF for support towards evacuation and rescue

F. Post Cyclone

- i. Convene an emergency meeting and take stock of the situation
- ii. Soon after Cyclone abated, food assistance in shape of rice, chuda, gud etc. and other essentials items to be provided to people immediately
- iii. The households whose houses are damaged in cyclone/heavy rain need to be provided with temporary shelter materials (polythene sheets) without delay
- iv. Ensuring immediate restoration of road communication for movement of relief materials. Instruct the concerned departments for restoration of damaged roads immediately after Cyclone
- v. Immediate restoration of electricity and tele-communication including internet services to be ensured
- vi. Instruct the BDOs and concerned officials for enforcing and monitoring proper relief distribution
- vii. Issue instructions to the district heads to initiate damage assessment

- viii. Convene meetings of NGOs, Youth Clubs, Self-Help Groups, etc., in the district, and assign them specific responsibilities for relief, recovery and rehabilitation
- ix. Enforce, Facilitate & Monitor Ex-gratia & Compensation to the disaster affected families
- x. Ensure submission of Situation & Daily report to office of Special Relief Commissioner

2. Chief District Medical & Public Health Officer

A. Pre flood Arrangements/ On Receiving Cyclone Warning

- i. Convene meeting with other stakeholders for taking all preparatory measures
- ii. Prepare contingency plan for monitoring hygiene and sanitation
- iii. Taking stocks of essentials medicines for flood related diseases, water purifying (Halogen) tablets, anti-snake venoms in District H.Q. hospitals, CHCs and PHCs
- iv. Ensuring sufficient stocks of bleaching powder, chlorine powder, lime powder etc.
- v. Relocate the patients to the safe areas within the hospital
- vi. Power backup arrangements to be made in all CHCs, PHCs and DHH and other hospitals
- vii. Issue instruction for shifting of pregnant women to MAA Griha immediately on receipt of Cyclone/ Flood warnings
- viii. Identifying & shifting patients requiring intensive care to safer places well in advance
- ix. Constitute Mobile Health Units (MHUs) consisting of a doctor, health workers and ANMs. Each mobile health unit should be capable to cover at least one relief centre in a day
- x. Deploy Mobile Health Units along with required medicines to the vulnerable/ likely to be affected areas in advance
- xi. Initiate vaccination in the likely to be affected areas (as & when necessary) for prevention of communicable diseases
- xii. Ensure availability of medical equipment and essential drugs
- xiii. Ensure power backup in hospitals
- xiv. Ensure availability of safe drinking water in hospitals
- xv. Earmark separate wards in the hospital for treatment of injured persons.

B. During Flood/Cyclone

- i. Deploy Rapid Response Teams and carry out health care services

- ii. Prepare a maternity facility for pregnant women in every Response Base/ Advance Medical Post

C. Post Flood/Cyclone

- i. Establish Helpline for providing information to the affected population.
- ii. Initiate, ensure post disaster disease surveillance system and monitor the outbreak of epidemic
- iii. Promote Psycho-Social Counselling camps for the disaster affected population
- iv. Coordinate with Private Hospitals for treatment of the affected population, if required
- v. Enforce & ensure proper dead body management & early submission of post mortem report to the concerned authority
- vi. Arrange transportation/ambulance for seriously injured/sick patients from PHCs/CHCs to referral hospitals.
- vii. Ensure timely submission of reports to the Collector & H&FW department

3. Superintendent of Police

A. Pre-Flood Arrangements/ On Receiving Cyclone Warning

- i. Ensure functioning of the communication systems
- ii. Ensure proper functioning of the control room round the clock with public helpline number
- iii. Prepare a Plan for deployment of police/response force to activate search & rescue operation, maintain law & order and traffic management
- iv. Provide necessary support to district administration and others for expediting rescue and relief operations
- v. Review and update emergency measures, procedures, and take necessary steps to protect emergency equipment

B. During Flood/Cyclone

- i. Remain in close coordination with the district administration
- ii. Keep close watch on the situation and activate Search & rescue operations
- iii. Ensure that all field staff and stationed officers submit the necessary action reports to the Control Room
- iv. Ensure security of key installations like power, water supply, telecommunication, etc.
- v. Restrict plying of vehicles on over topping roads and bridges

- vi. Coordinate with the administration for law-and-order situation during distribution of relief to the affected people

C. Post Flood/Cyclone

- i. Ensure safety of the evacuees during stay at shelters & back at home.
- ii. Ensure security measures at different storage points & relief distribution centres
- iii. Ensure functioning of control room with public helpline number
- iv. Provide adequate security to personnel of International Agencies for Medical Assistance, relief operations etc.

4. Chief District Agriculture Officer

i. Pre-Floods Arrangements/ On receiving Cyclone warning

- i. Activate the field functionaries
- ii. Issue necessary instructions to the staff & advisory to the farmers to safe guard their crops (in case of heavy rain warning, to cover up the paddy or other crops already placed in the house premises)
- iii. Close watch on the situation, review & update precautionary measures and procedures
- iv. Develop a pest and disease monitoring system so that timely steps can be taken to reduce damage to crops
- v. Take necessary steps to aware and enrol farmers on *“Pradhan Mantri Fasal Bima Yojna”*

ii. During Flood/Cyclone

- i. Close watch on the flood situation, and chalk out a farmers’ awareness plan depending upon the severity of the situation

iii. Post Flood/Cyclone

- i. Call for emergency meeting to take stock of the situation. Develop strategy and objectives for early recovery
- ii. Assess the extent of damage to soil, crop, plantation, micro-irrigation systems and storage facilities and ascertain the requirements of seeds, pesticides, equipment, etc. to salvage the situation or go for re-plantation
- iii. Assist the district administration for enumeration of crop loss and identification of beneficiaries for providing assistance
- iv. Review of stock of seeds available and timely transportation of the seeds to the affected areas

- v. Suggest variety of seeds and cropping pattern, which can reduce losses and reduce the risks to farmers
- vi. Coordinate the provision of agricultural services with irrigation department and soil conservation
- vii. Establish a public information centre with means of communication, to assist in providing updated information to people
- viii. Assist farmers to re-establish their contacts with agriculture produce market and ensure that produce gets proper support price

5. Executive Engineer- Rural Development

i. During Flood/Cyclone

- i. Remain in alertness and close watch on the situation
- ii. Coordination with district administration and keeping a strict vigil over the situation and act accordingly
- iii. Co-ordinate with District Administration, Enforce, Organize & Ensure round the clock inspection and repair of 1. low lying roads 2. critical buildings 3. bridges 5. culverts 6. overflow channels 8. pumps 9. generators 10. motor equipment, 11. station building, etc.

ii. Post Flood/Cyclone

- i. Immediate restoration of the relief lines
- ii. If there is a cut off in communication, then provision of alternative communication roads for relief operation
- iii. Identification of areas for clearance, delegation of team, monitoring of work
- iv. Initiate damage assessment & submission of proposal to the government for repair and restoration
- v. Continue round the clock inspection and repair of passage ways bridges, culverts, overflow channels, etc.
- vi. Clear the passage ways, on an on-going basis, in order to ensure that relief lines are unobstructed
- vii. Use information formats and monitoring checklist for programme monitoring and development, and for reporting to District Emergency Operations Centre (DEOC)

6. Executive Engineers - Works

i. Pre-Flood Arrangements/On receiving Cyclone Warning

- i. Appoint Nodal officers (technical officers) and ensure they meet the staff to review emergency procedures in their jurisdiction

- ii. Move heavy equipment, such as front-end loaders to areas likely to be damaged and put them in a safe place
- iii. Ensure emergency inspection by mechanical engineer of all plants and equipment at the district workshops
- iv. Construct/ reinforce the connecting roads from villages to roads, canals and bundhs and raise their level so that people can access the high ground
- v. Inspect old buildings and suggest retrofitting of weak buildings/ demolition of dangerous structures

ii. During Flood/Cyclone

- i. Close watch on the situation
- ii. Immediate restoration of breached roads for clearance of relief lines and to restore traffic

iii. Post Flood/Cyclone

- i. Provide a work team carrying emergency tool kits, depending on the nature and extent of the disaster, essential equipment such as: 1. Towing vehicles 2. Earth moving equipment and 3. Cranes, etc.
- ii. Coordinate with Public Works Department and Zila Parishad
- iii. Mobilize community assistance for road clearing by contacting community-based organizations
- iv. 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
- v. 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
- vi. 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

7. District Telecom Officer (DTO)

i. On receiving Cyclone Warning

- i. Remain in close contact with the district administration
- ii. Regular inspection of towers, initiate repair & maintenance, if required
- iii. Ensure stock pile of generators & sufficient fuels for emergencies
- iv. Identify and coordinate for additional technical manpower for immediate restoration of telecommunication

ii. During Flood/Cyclone

- i. Take steps as per the demand of the situation
- ii. All the staff needs to remain alert

iii. Post Flood/Cyclone

- i. Restore the telephone lines as per the priority

8. Chief District Veterinary Officer (CDVO)

i. Pre-Flood Arrangements/On receiving Cyclone warning

- i. Arrangement of vehicle for uninterrupted mobility of mobile health units in inaccessible areas
- ii. Organise Health awareness campaign & ensure vaccination of cattle population
- iii. Ensure repair of LI Centres and other necessary equipment & make provision for supply of yearly medicines
- iv. Ensure Storage of cattle feed and fodder in interior vulnerable strategic and key areas
- v. Regular co-ordination with district administration

ii. During Flood/Cyclone

- i. Record keeping, Information dissemination to concerned quarters (Sub-Divisional Vet. Officer)
- ii. Develop a system of monitoring outbreak of diseases to ensure that timely measures can be initiated to contain them

iii. Post Flood/Cyclone

- i. Identification of areas for clearance, delegation of team, monitoring of work
- ii. Damage assessment and reporting
- iii. Ensure feed concentrate and fodder for affected cattle population
- iv. Ensure that adequate sanitary conditions through cleaning operations are maintained in order to avoid outbreak of any epidemic

9. Regional Transport Officer/MVI

i. Pre-Flood Arrangements/On receiving Cyclone warning

- i. Remain in close contact with the District Administration
- ii. Provide necessary vehicles for evacuation, transportation of relief materials, team movement as and when required

ii. During Flood/Cyclone

- i. Remain in close coordination with the administration
- ii. Control vehicular movements till normalcy

iii. Post Flood/Cyclone

- i. Provide required vans and ambulances for mobile health and animal husbandry teams
- ii. Make available vehicles for supply chain management

10. Executive Engineer-WATCO

i. On receiving Cyclone warning

- i. Ensure drinking water is filled in overhead tanks to provide safe drinking water
- ii. Arrangement of water tankers, generator and fuel for emergency at the supply points
- iii. Ensure provision of safe drinking water and availability halogen tablets, ORS packets in the shelters
- iv. Coordinate with Executive Engineer, CESU for necessary uninterrupted power supply to water supply units.

ii. During Flood/Cyclone

- i. Close watch on the situation
- ii. Keep track on the low-lying areas & drinking water supply system therein

iii. Post Flood/Cyclone

- i. Immediate restoration of water supply with additional human resources
- ii. Damage assessment and reporting
- iii. Disinfection of all overhead tanks and piped water supply systems for supply of safe drinking waters

11. Executive Engineer-Electrical

i. On receiving Cyclone warning

- i. Undertake inspection of high-tension lines, towers, sub-stations, transformers, insulators, poles, and other equipment
- ii. Ensure, regular identification of faults, checking and repair of weak points / transformers
- iii. Ensure prior maintenance of the transformers and high-tension lines, cutting of the branches of the trees to safe guard the supply lines
- iv. Ensure Stockpiling of equipment /accessories, skill development training/orientation

- v. Precautions/protections near high voltage electric equipment installed.
- vi. Disconnection of electricity in the event of an emergency
- vii. Arrangement of alternative energy sources such as generators and fuel for generators
- viii. Protect Power Stations from disaster. Raise the height of compound walls. Install pump sets for draining water in case of emergency

ii. During Flood/Cyclone

- i. Disconnection of electricity to the affected areas to avoid any causality due to short circuit
- ii. Arrangement of uninterrupted power supply at the Hospitals (PHC, CHC, etc.) / temporary shelters
- iii. Dispatch emergency repair groups equipped with food, bedding, tents, and tools
- iv. Provide information to the people about the state of power supply, as it is one of the most important sources of information
- v. Assist hospitals in establishing an emergency supply by assembling generators and other emergency equipment, if necessary

iii. Post Flood/Cyclone

- i. Restoration of electricity with additional HR
- ii. Ensure that the Power Supply department makes alternate arrangements of emergency supply in all critical infrastructures
- iii. Damage Assessment and reporting



Best Practices & Documentation

Management of the COVID-19 Surge in Rayagada District



Pic. Inspection of Inter-State Check Point at Basanaguda, Gunupur Block on 12.04.2021

A. COVID-19 Phase-I Management

1st COVID positive case was detected on 02-06-2020 and Rayagada District was the last district effected. The spike noticed in July, August and September. Then the case load gradually decreased. 110 bedded Dedicated COVID Health Centre (DCHC) established with 100 beds + 10 ICU beds. All the requisite facilities are available in the DCHC. Dedicated ambulances are also available round the clock. 3 ambulances were tagged with the DCHC with One ambulance for drop back. Two ambulances for referred from DCHC to MKCG/other COVID Hospitals as per need.

The PD, DRDA was declared as District Nodal Officer and BDO/Tahasildars were the Nodal Officers for the COVID Care Centres (CCCs). The Beds, mattresses, drinking water, fooding etc arrangement at the CCCs were made by the Nodal Officers (BDO/Tahasildars). The Clinical HR like MBBS Doctor/ AYUSH Doctor, Paramedics, Sanitary Workers, Security

Staffs were provided by the CDMPHO. Temporary Medical Centres (TMCs) were operational at different strategic locations. To monitor the intra state and inter state surveillance at Railway Stations/ other bordering areas a team consisting of Executive Magistrate, Police Personnel, Health Staff were deployed at Railway Stations (Rayagada, Muniguda, Tikiri) and boarding areas like Kereda, Ambadola, Gunupur. The team screened all the travelers and recorded the name, address, mobile number etc and ensured to test the ILI/SARI/Fever on the spot.

Sarapanchas and other PR Representatives were involved and sensitized on COVID surveillance. They were taken responsibility of testing and tracing (if they comes from other district/states). 3 Rapid Response Teams (RRTs) per block, in total 33 RRTs and 2 RRTs at SDH/DHH were constituted to make door to door surveillance of ILI/SARI and monitor the AAAs (ASHA/AWW/ANM). As per the guidelines the Containment Zones were made. Restricted movement and maintenance of COVID protocols were enforced as per the COVID guidelines. Isolation wards made functional as per the guidelines, 1 bed per Govt./ Pvt. Health facility was compulsory and in accordance to that more than 150 beds were established at DHH/ SDH/ CHC/ PHC/ Pvt. Hospitals etc. The ILI/SARI symptom cases were kept in the isolation wards and ensured the testing within 24 hours and Positive cases shifted to CCC/ DCHC immediately through dedicated ambulance.

B. COVID-19 Phase-II Management Plan

Since 25-02-2021 the positive case load is increasing at different areas of Rayagada district. Out of that the Rayagada Urban, Gunupur Urban, Bissamcuttack and Muniguda were reported as on 07-04-2021. All the existing facilities at DCHC are exists and the same can be utilized as per need. One more ambulance is available (donated by UAIL) the same can be utilized for critical case referrals. The HR, which are presently deployed to different hospitals can be return back if required. The PD, DRDA is directed to instruct the BDO/Tahasildars of the concerned blocks (CCCs areas) to visit the CCCs and ensure availability of stock as per the earlier supply. Further, BDO/ Tahasildars should be ready in such a way that if required the CCC can be functional in 2 days and the PD, DRDA to monitor the same.

At present, the TMCs may be formed and if required they will be deployed. The BDOs may propose to establish the TMC, if cases will increase. Intra state and inter state surveillance at Railway Stations/ other bordering areas can be adopted especially at Railway stations and other entry points as per need. The BDOs to make necessary sensitization to all the Sarapanchas and other PRI Members on COVID surveillance.

Rapid Response Teams (RRTs) may be sensitized and if required their services may be utilized for surveillance purpose. BDOs may be directed to discuss with the MO I/cs on surge of cases and if required the RRTs may be utilized. If in any points cases are available in cluster mode then the same area may be considered for containment. Restricted movement and maintenance of COVID protocols will be sensitized through miking on the usage of masks will be ensured. The Isolation beds are still exists and they can be utilized as and when required and COVID vaccination of HCW, FLW and above 45 years has already been done.

CAP\FAMEX Programme by the NDRF, ODRAF & Fire Service



Operational Familiarization & Community Awareness Preparedness Programme
in Rayagada District by the 3rd Bn. NDRF
(National Disaster Response Force), Mundali, Cuttack.



The Community Awareness Programme (CAP)/Familiarisation Exercises (FAMEX) Programme in different location was organised by the ODRAF Unit of 2nd IR Bn., Bhamini, Ramanaguda, Rayagada to educate local communities, impart the disaster survival skills and knowledge to make informed decisions on how to reduce their vulnerability to disasters, enhance capacity and adapt their livelihood to withstand current and future risks.



The ODRAF Unit of 2nd IR Bn. Utilised various AV measures to communicate and to acquaint the stakeholders on the effective disaster management.



The Community Awareness Programme (CAP)/Familiarisation Exercises (FAMEX) Programme in different locations organised by the Fire Service, Muniguda.



Involvement of Stakeholders in the Fire Management Demo by the Fire Service, Muniguda





OSDMA



www.osdma.org

District Office :

**DISTRICT DISASTER MANAGEMENT AUTHORITY
RAYAGADA, ODISHA**

COLLECTORATE (EMERGENCY SECTION), RAYAGADA-765001
Telephone : 06856-224082, 224062, Email : deocrgda@gmail.com