



OSDMA

DISTRICT DISASTER MANAGEMENT PLAN

SUBARNAPUR

2024-25

VOLUME-I

PREPARED BY :-

DISTRICT EMERGENCY OPERATION CENTER, SUBARNAPUR
DISTRICT DISASTER MANAGEMENT AUTHORITY, SUBARNAPUR

INDEX

Abbreviations		
1.	Chapter -1	Page No.
	Introduction	1-8
	1.	Concepts and Statutory Mandate
	1.1	Aims and Objectives of the DDMP.
	1.2	Authority for Preparation and Approval of DDMP.
	1.3	Evolution of DDMP.
	1.3.1	Procedure for preparation of DDMP.
	1.3.2	Stages in formation of DDMP.
	1.3.3	Methodology of documentation.
	1.3.4	Dateline in approval of DDMP-2023-24
	1.3.5	Role of ADM, DEO, & Nodal Officers supports from line department
	1.3.5.1	Role of ADM, Subarnapur
	1.3.5.2	Role of DEO
	1.3.5.3	Role of Nodal Officers.
	1.4	Stakeholders and their responsibilities.
	1.4.1	Duties of District Collector.
	1.4.2	Duties of Local Authorities.
	1.4.3	Private Sectors.
	1.4.4	Community groups and Volunteer.
	1.4.5	District Legal Service Authority.
	1.4.6	Citizen.
	1.5	Plan for review and updating Periodicity.
2	Chapter -2	
	District Profile	09-19
	2.1	History and Location.
	2.2	Administrative Set up.
	2.3	Climate and Rainfall.
	2.3.1	Rain Recording Stations.
	2.4	Geography.
	2.5	Topography.
	2.6	Soil Type.
	2.7	Forest Cover.
	2.8	River System.
	2.9	Cultural heritage and Precincts.
	2.10	Demography.
	2.10.1	Population and it's Composition.
	2.10.2	Population growth variation.

	2.10.3	Religion wise Population distribution.	13
	2.10.4	Age wise Population distribution.	14
	2.10.5	Sex Ratio.	14
	2.10.6	Literacy rate.	14
	2.10.7	Households & its distribution.	14
	2.11	Socio-Economic Profile.	14
	2.11.1	Workforce participation.	14
	2.11.2	Land holding Pattern.	15
	2.11.3.	Agriculture and Irrigation.	15
	2.11.4	Employment and Livelihood.	15
	2..11.5	Industries and Mining.	15
	2.11.6	Education.	16
	2.11.6.1	Gross Enrolment Ratio.	16
	2.11.7	Housing.	16
	2.11.8	Electrification.	16
	2..11.9	Drinking water and Sanitation.	16
	2.11.10	Migration.	16-17
	2.11.11	Food Security.	17
	2.11.12	Social Security.	17
	2.12	Critical Infrastructure.	17
	2.12.1	Anganwadi Centers.	17
	2.12.2	Hospitals and Health Centers.	17
	2.12.3	Veterinary Hospitals.	17
	2.12.4	Police and Fire Satiation.	17-18
	2.12.5	Reserve Police and Paramilitary Force.	18
	2.12.6	Cooperative Societies	18
	2.12.7	Bank and Post Offices.	18
	2.12.8	Road and Rail Network.	18
	2.12.9	Cyclone and Flood Shelter.	18
	2.12.10	Rain gauge and automatic weather station.	19
3	Chapter-3		20-39
	Hazard, Vulnerability & Risk Assessment		
	3.1	Ground study of different disasters	20
	3.1.1	Flood	20
	3.1.2	Drought	21
	3.1.3	Pest Attack	21
	3.1.4	Lightning	21-22
	3.1.5	Heat Wave	22
	3.1.6	Hail storm/Whirl wind	22-23

	3.1.7	Fire Accidents	23
	3.1.8	Forest Fire	23
	3.1.9	Snake Bite	23
	3.1.10	Drowning	23-24
	3.1.11	Building Collapse	24
	3.1.12	Road Accident	24
	3.1.13	Dam Burst/Spill way related flood	24
	3.1.14	Cyclone	24-25
	3.1.15	Other Incidents	25-26
	3.2	Vulnerability & Risk Assessment related to disasters	27-29
	3.3	Major disaster incidents -2003 to 2023	30-31
	3.4	Major disasters during 2023	31-32
	3.5	Flood Vulnerable villages in general	33
	3.6	Causing agent wise flood vulnerable areas of the district	33
	3.7	Agriculture & Flood vulnerability	33-34
	3.8	Electrical infrastructure in flood prone areas	34
	3.9	Drinking water & flood vulnerability	34
	3.10	Events & Mass gatherings	34-35
	3.11	Boat plying ghats & operation points	35-36
	3.12	Major industrial establishments/ Chemical & Hazardous material storage points	37
	3.13	Drought	37
	3.14.1	Cultivated area Rainfed/Irrigated	37
	3.14.2	Drought Vulnerability	37-38
	3.15	Drinking water Crisis	38
	3.16	Road accidents	38-39
	3.17	Population requiring special care	39
4	Chapter-4		40-47
	Forest Fire		
	4.1	Name of the Forest Division	40
	4.2	Name of the Forest Range	40
	4.3	Total notified area in the district	41
	4.4	Zonation of forest area	41
	4.5	No. of village & population inside different zones	41
	4.6	Detailed Action Plan for management of forest fire (A- Physical, B- Financial)	42-43
	4.7	Role & Responsibility of different stakeholders	43
	4.7.1	Role of Divisional Forest Officer	43
	4.7.2	Role of Range Officer	44
	4.7.3	Role of Section Forester	44

	4.7.4	Role of Beat Forest Guard	45
	4.7.5	Role of NGOs & Voluntary organizations	45
	4.8	Preparedness before the onset of fire season	45-46
	4.9	Preventive measures	46
	4.10	Capacity Building	46
	4.11	Mitigation measures	47
	4.12	Interdepartmental coordination	47
	4.13	Incidence response	47
	4.14	Year wise break up of incidents	47
5	Chapter-5		48-84
	Institutional Arrangement		
	5.1	National Disaster Management Authority (NDMA)	48
	5.1.1	Function.	48
	5.1.2	Meeting.	48
	5.2	National Executive Committee (NEC)	48
	5.3	State Disaster Management Authority (SDMA).	48-49
	5.4	State Executive Committee (SEC)	49
	5.5	Revenue and Disaster Management Department.	49
	5.6	Special Relief Organization.	50
	5.7	Odisha State Disaster Management Authority.	50
	5.8	State level Committee on Natural Calamity.	50
	5.9	District Disaster Management Authority (DDMA)	51-52
	5.10	National Disaster Management Authority	52-54
	5.11	District level Committee on Natural Calamity.	54-55
	5.12	Departmental role & responsibility for HW & flood	55-61
	5.13	National Legal Service Authority.	61
	5.14	Odisha State Legal Service Authority.	62
	5.15	District Legal Service Authority.	62
	5.15.1	Composition of DLSA.	62-63
	5.15.2	Composition of Taluk L S A	63
	5.16	NDRF	63
	5.17	ODRAF	63-65
	5.18	Other Disaster Response team in district.	65-66
	5.19	NGOs and Volunteers.	66
	5.20	List of Helipads.	67
	5.21	Flood Shelters.	67
	5.22	Equipment provided to MFSs	67
	5.23	Other identified safe temporary shelters.	68-72
	5.24	Large open space for Camp.	72

	5.25	Storage facility.	73
	5.26	List of Govt. Boats.	73
	5.27	Emergency Communication System.	73
	5.27.1	State Emergency Operation Centre.	73
	5.27.2	District Emergency Operation Centre.	74-78
	5.27.3	Block Emergency Operation Centre.	78-79
	5.27.4	Other alternative Emergency Operation Centre.	79-80
	5.28	State Crises Group.	80
	5.28.1	Composition of State crisis group.	80-81
	5.28.2	Function of State Crisis Group	81
	5.29	District Crisis Group.	81-82
	5.29.1	Composition of District crisis group.	82
	5.30	Local Crisis Group.	82
	5.30.1	Composition of Local crisis group.	83
	5.31	Coordination Structure.	83
	5.32	GO-NGO coordination	83-84
	5.33	Role of Corporate Sector.	84
6	Chapter-6		85-110
	Prevention and Mitigation Measures.		
	6.1	Ways and means to prevent the impact of various Disaster	85
	6.1.1	Hazard wise Structural and Non-Structural prevention and mitigation measures.	86-109
	6.2	Scope for integrating different schemes for DRR activities.	109-110
7	Chapter-7		111-120
	Climate Change adaption		
		Climate change adaptation	111-112
	7.1	Climate & its Adaptation -Green House Gases.	112
	7.2	Important Green House Gases-Carbon Dioxide	113
	7.3	Important Green House Gases-Methane.	113
	7.4	Important Green House Gases-Nitrous oxide	114
	7.5	Important Green House Gases-fluorinated Gases	114-115
	7.6	Important Green House Gases- Chlorophora Carbon	115
	7.7	Greenhouse Gas sequestration	115-117
	7.8	Sectoral high mitigation potential	117-118
	7.9	Sectoral climate change mitigation projects	118
	7.10	Impact of climate change & expected actions	119
	7.11	Hazard specific mitigation measures	120
8	Chapter-8		121-124
	Inclusive Disaster Risk Reduction		

	8.1	Background: - A need to include persons with disabilities	121
	8.2	Legal framework to support inclusion of persons with disabilities	121
	8.3	Responding to needs of persons with disabilities	121-122
	8.4	Data Collection	122
	8.5	Policy, Institutional Mechanism & inclusive standard	122-124
9	Chapter-9		
	Safety of Schools & Child Care Institutions		125-135
	9.1	Order on WP(C)	125-126
	9.2	Guideline of School Safety Policy-2016 NDMA	126
	9.2.1	Vision	126
	9.2.2	Approach & Objectives	126-127
	9.2.3	Applicability	127
	9.2.4	National Disaster Management Act-2005	127
	9.2.5	National Policy on Disaster Management-2009	127
	9.2.6	Right to Education Act-2009	127-128
	9.2.7	Key action Areas	128-129
	9.3	Category & types of school	129
	9.4	Category & types of students	130
	9.5	School Safety Advisory Committee (District)	130-131
	9.6	Details of School safety in the district	131
	9.7	Disaster Management Education	131
	9.8	Role & responsibility	132-133
	9.9	Child Care institutions	133
	9.10	Principles to be maintained in CCI	133-135
10	Chapter-10		
	Chemical (Industrial) Nuclear & Radiological Disaster		136-140
	A	Chemical (Industrial) Disaster	136-137
	10.1	Factories & storage unit details	137
	10.2	Hazardous chemical storage details	137
	10.3	Critical facilities situated within close proximity of industries	138
	10.4	Statutory compliance of industries	138
	10.5	Nearest hospital details of the industries	138
	10.6	Stakeholders to be informed in case of industrial accident	139
	B	Nuclear & Radiological Disaster	139-140
	10.7	Hospital preparedness	140
	10.8	Specialized Response Force	140
	10.9	Mock Exercise on Nuclear Disaster	140
11	Chapter-11		
	Biological Disaster & Public Health in Emergencies		141-166

	11.1	Biological Disaster Management and medical preparedness	141
	11.2	Legal frame work	141
	11.3	Institutional & Operational Framework (Crisis Management Committee, Task Force, Technical Experts, Nodal Public Health Institution & Collaborative Institutions)	142-145
	11.4	Preventive Measures	146
	11.4.1	Pre-Disaster Preventive Measures	146-147
	11.4.2	Post- disaster Preventive Measures	147
	11.5	Disease containment by isolation & quarantine methodology	147
	11.6	Preparedness & Capacity development	148
	11.6.1	Establishment of command, control & Coordination	148
	11.7	Training & Education	148-149
	11.8	Community preparedness	149
	11.9	Medical Preparedness	150-156
	11.10	Psychosocial care	156
	11.11	Disaster mental health service	157
	11.12	Community based disaster psychosocial care	157-159
	11.13	Copping with loss & circles of support	159-160
	11.14	Needs of more vulnerable group	160-161
	11.15	Principles of psychosocial support	161
	11.16	Basic techniques of disaster psychosocial care	161-162
	11.17	Understanding of stress symptoms & management	162-166
	11.18	Ethics & Confidentiality	166
12	Chapter-12		
	Capacity Building Measures		167-170
	12.1	Approach	167
	12.2	Capacity Building of Govt Officials & PRI members	167-168
	12.3	District/Block level Mock Drill	169
	12.4	Community Capacity Building	169
	12.5	Capacity Building of FSMMC members/Task Force	169
	12.6	Shelter level Mock Drill	170
13	Chapter -13		
	Preparedness		171-180
	13.1	Relief Line District to Block	171
	13.2	Relief Line Block to GP & villages	171-173
	13.3	Procedures for using INMARSAT ISAT Phones-2	173-174
	13.3.1	Allotted satellite phone numbers	174-175
	13.4	Resources available- Response Volunteers	175
	13.5	Preparedness at district level	176-179
	13.6	Preparedness at community level	179

	13.7	Preparedness at family level	180
	13.8	Preparedness at individual level	180
14	Chapter-14		
	Crisis Response Plan		181-199
	14.1	IRS, ICS & Phases of Response- Timeline	181-183
	14.2	Relief Management- Time line	184
	14.3	Response	184
	14.3.1	Relief operation	184-187
	14.3.2	Health & Sanitation response system	188-189
	14.3.3	Shelter management	190-193
	14.3.4	Evacuation, search & Rescue response	194-196
	14.4	Format for FIR	197-
	14.5	Daily status report	198-199
15	Chapter-15		
	Rehabilitation & Restoration		200-204
	15.1	Rehabilitation & Restoration	200
	15.2	SOP for Restoration & Rehabilitation	201-204
16	Chapter-16		
	Recovery		205-206
17	Chapter -17		
	Financial Arrangement		207-212
	17.1	National Disaster Response Fund (NDRF)	207
	17.2	State Disaster Response Fund (SDRF)	207-208
	17.3	Chief Minister Relief Fund (CMRF)	208
	17.3.1	Cases eligible for assistance under CMRF	208
	17.3.1.1	Poor & persons in distress	208
	17.3.1.2	Aged, Differently Abled, Orphans, AIDS affected	208
	17.3.1.3	Persons affected by calamities	208
	17.3.1.4	Assistance for Rural Development	208
	17.4	Release of Funds to Dept & District	208-209
	17.5	Damage assessment & report after Cyclone/ Flood	209
	17.5.1	Submission of preliminary report	209
	17.5.2	Submission of Final flood damage report	209-210
	17.6	Central & State Govt programme & Schemes on Natural Calamity	210-212
	17.7	Role of District Planning Committee	212
	17.8	Fund provision for disaster preparedness & Capacity building	212
18	Chapter -18		
	Lesson learnt & documentation		213-214

Abbreviation

ACSO	Assistance Supply Officer
AAO	Assistant Agriculture Officer
A & FE	Agriculture & Farmers Empowerment
ADMO	Additional District Medical Officer
ASHA	Accredited Social Health Activist
ADVO	Additional District Veterinary Officer
ANM	Auxiliary Nurse Midwife
AWC	Angaan Wadi Centre
BEO	Block Education Officer
BEOC	Block Emergency Operation Centre
BO	Branch Office
CSO	Civil Supply Officer
CDM&PHO	Chief District Medical Officer
CDVO	Chief District Veterinary Officer
CHC	Community Health Centre
DDMA	District Disaster Management Authority
DDMP	District Disaster Management Plan
DEOC	District Emergency Operation Centre
DSWO	District Social Welfare Officer
DPM	District Programme Manager
DAO	District Agriculture Officer
DEO	District Education Officer
DPO (SSA)	District Programme Officer, Sarva Shiksha Abhiyan
DPO (RMSA)	District Programme Officer, Rashtriya Madhyamik Shiksha Abhiyan
DLO	District Labour Officer
DM	Disaster Management
DLCNC	District Level Committee on Natural Calamity
DRR-CCA	Disaster Risk Reduction and Climate Change Adaptation
DRM	Disaster Risk Management
E.E.	Executive Engineer
FIR	First Information Report
F & ARD	Fishery & Animal Resource Development
FSMMC	Flood Shelter Management & Maintenance Committee
GP	Gram Panchayat
H&FW	Health & Family Welfare
HH	House Hold
HRVA	Hazard Risk and Vulnerability Analysis
HW	Health Worker

IAY	Indira Awas Yojna
IDRN	India Disaster Resource Network
ICS	Incident Command System
LI	Livestock Inspector
LI	Labour Inspector
MVI	Motor Vehicle Inspector
MI	Marketing Inspector
MO	Medical Officer
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MHU	Mobile Health Unit
NA	Not Available
NAC	Notified Area Council
NFSA	National Food Security Act
NDRF	National Disaster Response Force
OFS	Odisha Forest Service
OSDMA	Odisha State Disaster Management Authority
OBC	Other Backward Caste
ODRAF	Odisha Disaster Rapid Action Force
PWS	Pipe Water Supply
PDS	Public Distribution Station
PPE	Personal Protect Equipment
PR&DW	Panchayati Raj & Drinking Water
PWD	Persons With Disability
RI	Revenue Inspector
RTO	Regional Transport Officer
SDMA	State Disaster Management Authority
SI	Supply Inspector
SDWO	Sub-divisional Welfare Officer
SOP	Standard Operating procedure
SRC	Special Relief Commissioner
SC	Scheduled Caste
ST	Scheduled Tribe
SO	Sub Office
SSEPD	Social Security & Empowerment of Persons with Disability
ULB	Urban Local Body
VAW	Village Agriculture Worker
VHF	Very High Frequency
VSS	Vana Surakshya Samiti

APPROVAL

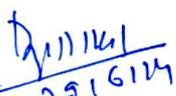
APPROVAL OF DISTRICT DISASTER MANAGEMENT PLAN 2024-25

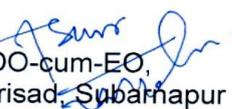
The District Disaster Management Plan 2024-25 Volume – I & II for Subarnapur district has been prepared basing on the information obtained from the Line Departments and all stakeholders. A detailed discussion was held on the prepared District Disaster Management Plan 2024-25 in the District Disaster Management Authority (DDMA) meeting conducted today i.e. on 29.06.2024 and the DDMP-2024-25 of Subarnapur District is hereby unanimously approved by the DDMA, Subarnapur on Dt. 29.06.2024.

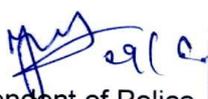

29/06/24
CDAO, Subarnapur
Member, DDMA


29/06/24
EE, Tel. Irrigation Division,
Subarnapur
Member, DDMA


29/06/24
SE, RW, Subarnapur
Member, DDMA


29/06/24
CDM & PHO, Subarnapur
Member, DDMA


29/06/24
CDO-cum-EO,
Zilla Parisad, Subarnapur
Member, DDMA


29/06/24
Superintendent of Police,
Subarnapur,
Member, DDMA


29.6.2024
Addl. District Magistrate,
Subarnapur
CEO, DDMA

S. Thela
President, Zilla Parisad,
Subarnapur.
Co-Chairperson, DDMA


29/06/24
Collector-cum-
Chairperson, DDMA,
Subarnapur.

CHAPTER 1

INTRODUCTION

1. Concepts and Statutory Mandate-

Sec 2 (d) of DM Act 2005 defines **Disaster** as a “Catastrophe , mishap , calamity or grave occurrence in any area , arising from natural or manmade causes or by accident or negligence which results in substantial loss of life or human suffering or damage to and destruction of property, or damage to or degradation of environment and is of such a nature or property or damage to or degradation of environment and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area”. Disaster may be natural or man- made.

An indicative list of disasters is categorized as following:

Table No-1.1 Category of disaster.

Disasters as approved under SDRF/ NDRF Guidelines.		State Specific Disasters as per Notification No.1936 Dt. 01.06.2015 of R&DM Dept, Govt. Of Odisha		Local Disasters	
1	Flood	1	Lightning	1	Animal Menace
2	Drought	2	Heat wave	2	Building Collapse
3	Fire	3	Whirlwind	3	Stampede
4	Hail Storm	4	Tornado	4	Epidemics/Biological disaster
5	Cyclone	5	Heavy Rain	5	Industrial/ Chemical/ Nuclear, Radiological Accidents
6	Earth Quake	6	Boat Accidents (Other than during Flood)	6	Road Accidents
7	Tsunami	7	Drowning (Other than during Flood)	7	Railway Accidents
8	Landslide	8	Snake Bite (Other than during Flood)	8	Dam Break/ Spill Way related flood.
9	Avalanche			9	Communal Riot
10	Cloud Burst			10	Hooch Incidents
11	Pest Attack			11	Soil/ Coastal erosion
12	Cold Wave/ Frost			12	Forest Fire

Natural Hazard is a threat, while disaster is an event. Latter is a disruptive catastrophe.

$\text{Disaster} = \text{Natural hazard} * \text{Risk} * \text{Exposure} * \text{Vulnerability}$
--

Where, Risk refers to the frequency and intensity of hazard.

Exposure refers to extent to which a community, structure, services in a geographic area are likely to be damaged or disrupted.

Vulnerability refers to impact on a geographical area and its community on account of proximity, nature, terrain, socio-economic capacity or level of preparedness.

Sec 2(e) of DM Act 2005, Disaster Management is a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary for

- (a) Prevention of danger or treat of any disaster,
- (b) Mitigation or reduction of risk of any disaster or its severity or consequences
- (c) Capacity building
- (d) Preparedness to deal with any disaster
- (e) Prompt response to any threatening disaster situation or disasters
- (f) Assessing the severity or magnitude of effects of any disaster
- (g) Evacuation, rescue and relief
- (h) Rehabilitation and reconstruction.

Therefore, disaster management is a continuous and cyclic process that integrates pre disaster, during disaster and post disaster actions.

Sec 31 (1) of Disaster Management Act 2005 (DM Act) makes it mandatory to have a disaster management plan for every district. DDMP shall include hazard, vulnerability, capacity and risk Assessment (HVCRA), prevention, mitigation, preparedness measures, response plan and procedures. Based on this cycle, the response part is addressed with Incident Command System, **(ICS)** of clearly identified structures and clearly defined processes, and linked with resource inventory connected to website India Disaster Resource Network www.idrn.gov.in (**IDRN**).

Sec 25 (1) of DM Act 2005, mandates constitution of District Disaster Management Authority (DDMA) to adopt a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary and expedient for prevention as well as mitigation of disasters.

1.1 **Aims & Objectives of the DDMP:**

The vision of the plan is to assess the available resources of Subarnapur District and ensure the optimum utilization of the resources in the shortest possible time with minimum simple orders and procedures by activating the participation of Government, community and volunteers at all levels to make the district disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihood and assets.

Thus, the plan aims to identify all common elements of response and act as a base plan or a generic / modular plan for all disaster response activities. It provides a frame work around which other agencies and departments can outline their own activities for disaster response. This plan has been envisaged as the guide book whereby the receipt of a signal of an impending disaster would simultaneously energize and activate the mechanism for response and mitigation without loss of crucial time. This would be entailing all the participating managers to know in advance the task assigned to them and the manner of response.

The DDMP is in essence, the Standard Operating Procedure (SOP) in which the implementation of efforts on ground is well laid down.

An indicative list with possible plan objectives is given below:

1. To identify the areas vulnerable to major types of the hazards in the district.
2. To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its effects.
3. To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.
4. To enhance disaster resilience of the people in the district by way of capacity building.
5. Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.
6. Manage future development to mitigate the effect of natural hazards in the district.
7. To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.
8. 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.
9. 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.
10. To make the use of media in disaster management.
11. Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at district level and local authority.

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

1.2 Authority for Preparation and Approval of DDMP:

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

District Disaster Management Plan is formulated at the district level by taking account into all the facts & finding collected from the community. The district Collector will discuss the modalities and seek views for preparation of a holistic plan in the meeting of the DDMA held in the month of January and to prepare the plan by the end of February every year. The DDMP prepared at district level by the expert personnel require the approval from DDMA by March. At the district level DDMA is empowered to approve the plan with the consultation of local authorities, if the plan

includes the areas in the district vulnerable to different forms of disaster, the measures to be taken for prevention & mitigation of disaster, the capacity building & preparedness planning reflected, the response plan & procedure suggested, Standard Operating System (SOP) and provision for annual review & up-dation. DDMA shall meet once again after the preparation & finalization of the DDMP for its approval. After the preliminary approval by DDMA, the district authority shall send a copy of the DM plan to the State Disaster Management Authority which shall be forwarded to state govt. for approval.

1.3 Evolution of DDMP

1.3.1 Procedure for preparation of DDMP

The broad approach is one of literature review, participatory research, action learning and collaborative strategy development. This would entail stakeholder consultations; participatory needs assessments; and the development of innovative tools and techniques to address the identified needs.

DDMP will consist of two sub-plans; a Disaster Risk Reduction (DRR) Plan and a Disaster Response (DR) Plan. The DRR plan will include systems to be put in place for dissemination of early warnings, awareness generation at district and sub-district level including community level, mitigation and preparedness measures to be taken, and capacity building. The DR Plan will include response, rescue, relief, rehabilitation and recovery. It will also cover EOCs, Incident Response System, Response teams, coordination and monitoring mechanism, common actions to be taken as also disaster specific actions which need to be taken.

1.3.2 Stages in formulation of DDMP:

The formulation of DDMP is an interdisciplinary task performed by different experts from the departments and institutions based on the district vulnerability and involve innovative thinking. The process involves identification of Hazard, Risk and Vulnerability and Capacity Analysis of District Administration.

- 1) The process begins with survey and data collection from various sources such as line departments, community, NGOs, etc. The past history of disasters, Hazards, Risk Analysis, kinds of Vulnerability would form the basis for further steps.
- 2) The 2nd step is to have the basic information on various ongoing and past projects on housing, infrastructure, Irrigation and Dams, Schools/Colleges, Industrial establishments, Tourism, Roads and Bridges, Water Supply and Sanitation, Power, heritage, temples, entertainment etc. The vulnerability owing to these projects is to be estimated. The basic data is to be digitized and maps with all attributes are to be prepared.
- 3) The 3rd step is to assess the capacity of the district administration and identify the resources available and those required.
- 4) The 4th Step is to prepare a mitigation plan department-wise with budget estimates and action plans for implementation.

- 5) The 5th step shall be setting up EOC, Communication system, taskforces and institutional mechanism for management of Disasters at all stages.
- 6) The 6th Step is for understanding the role clarity between different departments and agencies and assigning the responsibilities to Departments, Local Authorities & NGOs etc.
- 7) The 7th step is to draw out standard operating procedures to Officers and functionaries.
- 8) The 8th Step is to Collect and update the contact addresses of various resources and their readiness and availability.

1.3.3 Methodology of documentation:

1. Literature Review: The literature review will be a key secondary data input, which will be synergized with the primary data collected from the field.
2. District level visits: The visits will help the team to map the DM and sectoral institutions, carry out interviews with the line departments and assess the infrastructure and training aids available with institutions.
3. Interaction and discussions with relevant district level departments including District Magistrates and Heads of line Departments, sub divisional officers, municipal bodies, other non-government stakeholders such as NGOs/ CSOs, District Associations, ULBs and Gram Panchayats and members of DDMA and Community (Females, Males, Youths, Children, Schedule Tribe, Schedule Caste etc) in each district through Focused Group Discussions and discussions.

1.3.4 Datelines in approval of DDMP 2024:

As a mandate DDMP is to be updated annually. Hence for updating the existing DDMP with consultation of DDMA the process started as follows.

1. DDMA meeting convened on 19.01.2024 to discuss on preparation of DDMP 2024.
2. With the consent of DDMA, the formats were circulated among the concerned Departments on 20.01.2024 to obtain updated information.
3. Follow up over telephone to the line departments for timely submission of information. Information from some Departments received & compilation started at District level.
4. All district & block level officers were requested to supply the information in the formats at the earliest.
4. DPO, Emergency visited line department offices to collect information and also entrusted to prepare the DDMP with & under the active supervision and guidance of DEO.
5. Information received from line departments were compiled, analyzed & incorporated in the exiting DDMP and updated DDMP 2024 was prepared on 26.06.2024.
8. The updated DDMP 2024-25 checked by District Emergency Officer, Subarnapur
9. The DDMP circulated among the members for further scrutiny and suggestions.
10. The updated DDMP 2024-25 placed before DDMA, Subarnapur for approval on 29.06.2024.
11. After the approval by DDMA, the District Authority send copy of the DM plan to the State Disaster Management Authority for approval at Govt level.

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

1.3.5.1 Role of ADM, Subarnapur:

1. As the Chief Executive Officer (CEO) of DDMA, ADM took the leading role in laying out structure and guiding principles in preparation of DDMP.
2. Regularly reviewed progress of DDMP and issued reminders to the line departments to provide the necessary information and inputs.

1.3.5.2 Role of DEO, Subarnapur

- 1) Actively supervised the preparation of DDMP.
- 2) Review the DDMP of the previous years and prepared a critical analysis of Previous DDMP to insert valuable inputs in the current DDMP.
- 3) Gone through different reports, information, websites & departments sites to collect information relating to Disaster of the District.
- 4) Overview the files like guard files of circulars, flood, drought, heat wave, lighting etc & guidelines of DM Act, Odisha Relief Code, CMRF guidelines etc of the section relating to Disaster
- 5) Time to time coordinated & contacted different departments to provide the required information.
- 6) Talked to the senior officials to the departments to provide necessary inputs from their department for preparation of DDMP.

1.3.5.3 Role of Nodal Officers:

- 1) Provided necessary support for data from their line departments.
- 2) Provided feedbacks and valuable inputs to correct errors, omissions and suggest improvement to the DDMP.

1.4 Stakeholders and their responsibilities:

The District Collector, Additional District Magistrate, members of DDMA, all the line departments, members of local authorities, NGOs, Volunteers Group, SHGs, CBOs & the whole Community as the stakeholders of the Disaster Management Plan have to perform their responsibility. All the line departments have to prepare their own DM plan in accordance with the indicative plan laid down in DDMP. They are responsible for prevention, preparedness, mitigation, relief, rescue, reconstruction & rehabilitation at all stages i.e pre-disaster, during and post disaster situation.

1.4.1 The District Collector has the following duties:

1. To review preparedness stakeholders at all levels.
2. To facilitate and coordinate with local Government bodies to ensure that pre-disaster and post disaster management activities in the district are carried out.
3. To assist community training, awareness programmes and the installation of emergency facilities with the support of line departments, non-governmental organizations and the private sector.
4. To function as a leader of the team and guide decisions and actions to direct and smoothen the response and relief activities to minimize the adverse impact of disaster.
5. To recommend the Special Relief Commissioner and State Government for declaration of disaster, nature and quantum of relief.

1.4.2 Local Authorities have the following duties:

1. To provide assistance to the District Collector in disaster management activities.
2. 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.
3. To undertake capacity building measures and awareness and sensitization of the community
4. To ensure that all construction projects under it conform to the standards and specifications laid down.
5. 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.

1.4.3 Private Sector:

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

1.4.4 Community Groups and Volunteer Agencies:

1. Local community groups and voluntary agencies including NGOs normally help in prevention, mitigation and preparedness activities under the overall guidance of the line departments and DDMA.
2. They should be encouraged to participate in all training activities as may be organized and should familiarise themselves with their role in disaster management.

1.4.5 District Legal Service Authority: -

The intervention of Legal Services Authorities should be for coordinating the integrated, strategic and sustainable development measures taken by the government and Disaster management Authorities for reducing the period of crises and for building a platform for early recovery and development. The thrust of the efforts by the State Legal Services Authorities shall be for strengthening the capacity of the victims for managing the disaster at all levels and to coordinate with the Government departments and non-governmental organizations and also for providing legal aid to the victims.

1.4.6 Citizens:

Follow instructions; cooperate in evacuation, rescue and relief. It is the duty of every citizen to assist the administration during the time of disaster.

1.5 Plan for review and updating: Periodicity

DDMA is authorized to review the DDMP annually. After a disaster or as & when required, the Collector or DDMA may review the existing DDMP and may seek the views for appropriate modification & changes for the holistic plan. However, for updating the DDMP, the DDMA meet in the first week of January & make the consultation with the line departments & important stakeholders. For this purpose, the required information shall be submitted by the line departments in the third week of January. The compilation of information, the preparation of DDMP & sharing of Draft shall be in the first week of February. Necessary modification shall be completed in the second week of February. Placing of final copy in front of DDMA & finalization shall be in the last week of February and the same shall be sent to SDMA for approval in the last week of February.

It should be mandatory to consider reviewing and updating the plan after the following events:

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

The DDMP is to be up loaded in the district portal www.subarnapur.nic.in for dissemination. The collection of the information on resources & inventories will be on monthly basis and upload them in the India Disaster Resource Network (IDRN). The IDRN updating will be on monthly basis.

Timeline to update DDMP

Table No-1.2

Sl	Activities to be done	Time Line
1	Consultation with line department officials and important stakeholders at district level	1 st week of January
2	Submission of base line data by all line departments	3 rd week of January
3	Compilation of information's and preparation DDMP. Sharing of draft with Chairperson, members of DDMA and other stakeholders	1 st week of February
4	Necessary modification and finalization	2 nd week of February
5	Placing the final copy before DDMA, finalization and submission of a copy to SDMA	Last week of February
6	Approval by SDMA	By March

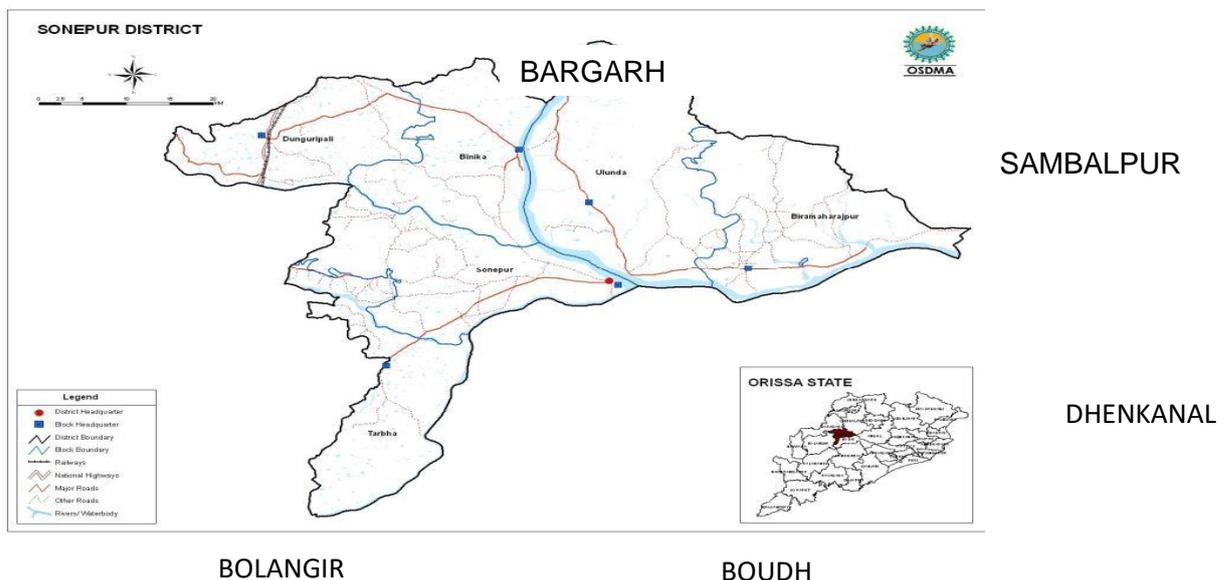
CHAPTER-2 **DISTRICT PROFILE**

2.1 History & Location:

Subarnapur has figured on the political and cultural map of Odisha since pre-historic times as an ancient place of human habitation. The discovery of a large number of stone tools, rock art of Puja Dunguri near Rampur Tahasil and punch-marked coins is a testimony to primitive human settlements in this region since the 3rd century B.C. Subarnapur occupied a place of prime importance under various royal families like the Bhanjas, the Somavamsis, the Telugu Chodas, the Kalachuris, the Gangas and the Chauhans. It was declared a feudatory state by the British in 1867. With the division of Bengal in 1905 it came under the jurisdiction of Lt. Governor of Bengal. This feudatory state merged with Odisha province on 1st January, 1948 and became a sub-division under Bolangir district. Subsequently, it was made a separate district w.e.f. 1st April 1993.

The district is located in the western part of Odisha. Subarnapur lies between Latitudes 20° 30' N to 20° 10' N and Longitudes 83° 27' E to 84° 15' E. The district is spread over 2337 Sq.kms. 1.5 % of the State's land mass. It is bordered by Bolangir in the west, Bargarh in the North, Sambalpur in the North-East, Boudh in the South and South-east and Rairakhol sub-division of Sambalpur in the east.

The district head quarter is at Sonapur connected through NH-57 to state headquarters at Bhubaneswar at a distance of 267 KM. Dunguripali & Bichhupali are two railway stations in the district. For rail transport & communication the nearest railway stations of this district is Bichhupali (40) Km and the other nearest railway station of neighbouring district are Bolangir 50 Km, Radhakhol 70 Km and Sambalpur 85 Km away from the district headquarter.



2.2 Administrative Setup:

For administrative convenience, the district is divided into two Sub-divisions, six Tahasils, six Blocks, nine Police stations and 109 Gram Panchayats. There are 3 statutory towns, one Municipality and two NACs. There are 963 villages, of which 130 are uninhabited.

Table No2.1

I.	No. of Sub-Division	02	Sonepur & Birmaharajpur
II.	No. of Tahasils	06	Binka, Birmaharajpur, Rampur, Sonepur, Tarbha & Ullunda
III.	No. of R.I. Circles	40	Binka- 8, Birmaharajpur-5, Rampur-9, Sonepur-5, Tarva-7 & Ullunda-6
IV.	No. of Blocks	06	Binka, Birmaharajpur, Dunguripali, Sonepur, Tarva&Ullunda
V.	No. of ICDS projects	06	Binka, Birmaharajpur, Dunguripali, Sonepur, Tarva&Ullunda
VI.	No. of ULBs	03	Sonepur Municipality, NAC Binka & Tarbha
VII.	No. of statutory towns	03	Sonepur, Binika & Tarbha
VIII.	No. of Police Stations	09	Binka, Birmharajpur, Subalaya Dunguripali, Rampur, Sonepur, Lachhipur Tarbha, Ullunda.
IX.	No. of GPs	109	Binka-16, Birmaharajpur-15, Dunguripali-26, Sonepur-14, Tarva-21 & Ullunda-17
X.	No. of villages	963	855 habitat villages
XI.	No. of Assembly Constituencies	2	65-Sonepur & 64-Birmharajpur

2.3 Climate & Rainfall:

Subarnapur is situated in north eastern corner of the Deccan plateau. This District mostly faces four seasons in a year, i.e., winter season from December to February is followed by the pre-monsoon or hot weather season from March to May. The period from June to September constitute the south-west monsoon season and the period of October and November is the post-monsoon season.

The Climate is extreme. It is hot and moist. The mean maximum temperature 43.3°C goes up to 45°C. In the hot weather season from March to May, weather is generally dry and uncomfortable. Winters are very cold with temperature as low as 7°C. The mean minimum temperature is 13°C. The summer is followed by the rainy season, which starts with the outbreak of the south-west monsoon in June. It reaches its peak in August and retreats in the middle of October. It experiences fairly good rainfall and high degree of humidity. The actual rainfall varies from block to block. About 84% of rainfall is received during the period from June to September. The normal average rainfall is not uniformly distributed. The annual rainfall of the district is 1418.5 mm in 61.6 rainy days.

2.3.1 Rain Recording Stations:

One rain recording station is located in the premises of Collectorate, Subarnapur with Latitude 20.836498 & Longitude 83.900769. Besides, **six** numbers of rain recording stations are located, one in each block of the district.

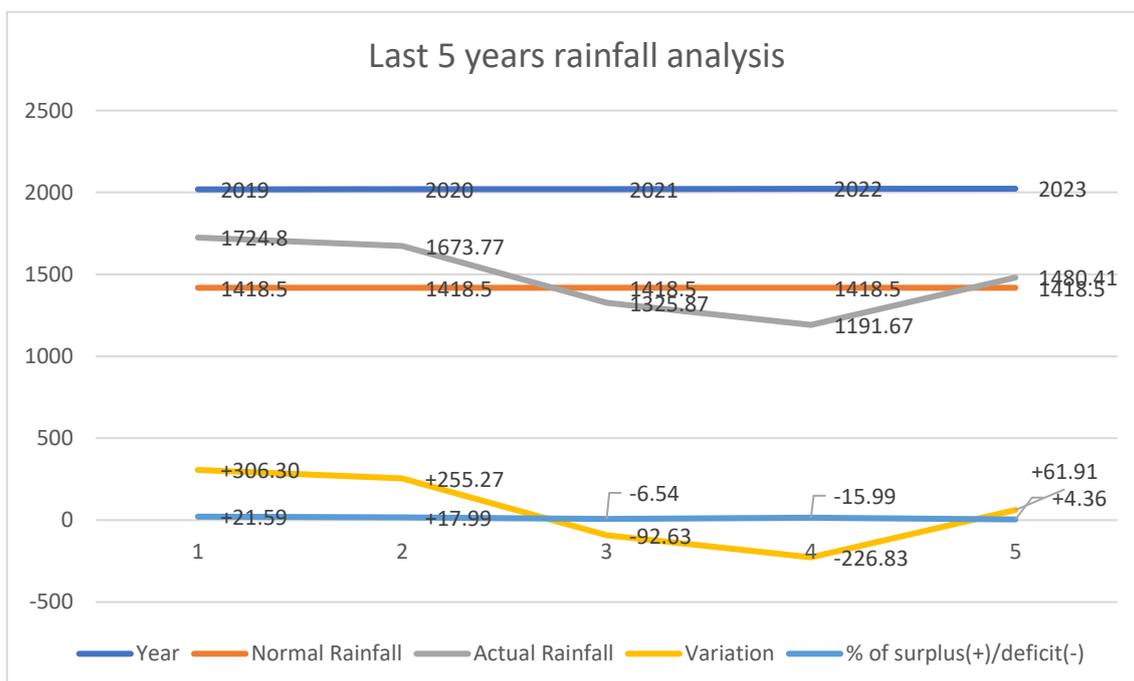
The following table shows the reported average rain fall of the last 5 years in the district:

Table No-2.3 Rain fall

Normal Rainfall (in mm)	Actual Rainfall (In mm) 2019	Actual Rainfall (In mm) 2020	Actual Rainfall (In mm) 2021	Actual Rainfall (In mm) 2022	Actual Rainfall (In mm) 2023
1418.50	1724.80	1673.77	1325.87	1191.67	1480.41

Analysis of last 5 years rainfall

Year	Normal Rainfall	Actual Rainfall	Variation	% of surplus(+)/deficit(-)
2019	1418.5	1724.8	+306.30	+21.59
2020	1418.5	1673.77	+255.27	+17.99
2021	1418.5	1325.87	-92.63	-6.54
2022	1418.5	1191.67	-226.83	-15.99
2023	1418.5	1480.41	+61.91	+4.36



The above analysis shows that during 2019, 2020 there is surplus rain fall (+) 21.59% & 17.99% and in 2021 & 2022 there is shortfall of rainfall amounting to - 6.54% & -15.99% respectively and further there is an increase of +4.36% rainfall in 2023.

2.4 Geography:

The total geographical area of Subarnapur is 2284.89 Sqkm. The forest land covers about 415.78 ha. Total 128318 ha is covered under agriculture.

2.5 Topography:

Subarnapur constitutes a portion of the peninsular region. The district is a table land constituting a part of the Western Central Table Level. It falls under the ninth agro-climatic zone of Odisha. It is located in the Mahanadi basin. Parts of the district are undulating plains with irregular hill ranges.

2.6 Soil Type: -

The district has alluvial and fertile soil in the basins of the rivers "Mahanadi", "Tel" & "Ong" suitable for cultivation of a few cash crops. The soil of the

district is broadly classified as sandy, sandy loam and sandy clay. The main soil types are Mixed Red & Black soil and Black soil. According to Water-retention capacity, agricultural land in sonapur can be categorized into 4 types; *Ata, Mal, Berna, Bahal*. Soil of the district is mostly neutral to alkaline in nature having low organic carbon content. Birmaharajpur and Binka Block soil is adequate in Phosphorous and Potash. However, status of micro nutrients like Zinc, Boron, Sulphur and copper are low to very low in some parts of the district. Boron and Zinc application is deficient mostly in all blocks. Sulphur is deficient in parts of Sonapur, Ulunda and Dunguripali Block and Copper is deficient mainly in Ulunda Block. The rock types in the district are alluvial and laterite. Lower Gondwana sand stones are also found here. The hills of the district have a cap of high-level laterite.

2.7 Forest Cover: -

All six Blocks of Subarnapur district come under four forest ranges. 431.8625 sq.km is covered by forest which is 18.28% of the total geographical area of Subarnapur district. The land covered by 37 nos. of reserved forest is 391.94475 Sqkm, 2 nos. of proposed reserved forest is 4.82 Sqkm, Village Forest is 21.105 Sqkm Revenue Forest 10.85495 Sqkm & unclassified forest 0.03 Sqkm. There are 8.10 km forest road in Tarbha Block, 25.20 km forest road in Ulunda Block and 7.10 km forest road in Birmaharajpur Block.

2.8 River System:

The main rivers in this district are the Mahanadi, Tel, SukTel and Ong. The Mahanadi flows right through the heart of Subarnapur district. The other prominent rivers which traverse the territory are the Tel and Ong. They drain water from different parts of the area through small tributaries and ultimately flow into the Mahanadi at Sonapur. The Ong originates in Gandhamardan Hills and after flowing through Bargarh it enters Balangir district on the west of Salebhatta near Agalpur. It meets Mahanadi a few km north-west of Sonapur town. River Tel emerges from the north-western part of the Koraput district and after flowing through Kalahandi, it touches the southern border of Balangir and then flows into Mahanadi near Sonapur. Among other rivers Jira, the northernmost affluent river discharges water into Mahanadi. Besides, Nibrutijore, Surubalijore, Harihar jore, Badjore and Balijore are rain-fed rivulets that flow in Subarnapur. Here are also small rain-fed streams / nallahas that discharge into the main rivers/ jores during the rainy season.

Most of the farming activities in this district depend on these river systems which are well connected through different LIPs, and canal systems. There are 58 numbers of Minor Irrigation Projects in the district having canal system for irrigation purpose.

The district has two types of Agro-Climatic situations, irrigated and rainfed. Binka and Dunguripali are irrigated. Sonapur, Tarbha, Birmaharajpur and Ulunda are rain-fed.

2.9 Cultural heritage & Precincts:

Subarnapur District is known for its influentially rich cultural heritage, arts and crafts. For instance, textiles and terracotta of Sonapur, Brass metal works and Philigri crafts of Tarbha and Binka, Stone carving of Ullunda and Paddy crafts of Dunguripali are recognized all over the state and also in country. In addition, the great poet and prophet of Mahima Dharma, Santha Bhima Bhoi was from this district. Besides, Subarnapur area is famous for 'Danda-nata', a religious folk tradition generally performed in the month of Chaitra. Historically Sonapur region was known as Paschima Lanka. Many temples are unprotected. District library, Sonapur, Gangadhar Meher Pathagar, Ainlasari & Baghapali Library, Baghapali, Sonapur are three public libraries in Subarnapur.

2.10 Demography:

As per 2011 census, total population of the district is 6,10,183 which is 1.45 % of the State's population. The density of population per Sq.km. in the district is 261 as against 270 in the State. During the decade 2001-2011, growth rate of population in the district was 12.6 %, lower than 14.00 % growth rate of the State.

The sex ratio of the district is low with 960 females per 1000 males as compared to the corresponding figure of 979 at the State level. The children in the age group of 0-6 years constituted 12.26 % of the population. Among these children, boys (6.28 %) are proportionately more than girls (5.98%). General and other backward castes dominate the district population. The SC number 1,56,219 (25.60 %) and ST,57192 (9.37 %). Most of the people in the district live in rural areas

2.10.1 Population and its composition:

Table No- 2.6

Sl. No	Population			SC		ST		OBC	
	T	M	F	M	F	M	F	M	F
1	610183	311312	298871	79725	76494	28794	28398	202793	193979

Details are given in Table No 1.3 in Voll-II

2.10.2 Population growth variation:

The Block and Urban Local Body (ULB) wise variation of population during the decade shows Tarbha Block (rural) had the highest and Tarbha NAC (urban) had the lowest growth.

Table No-2.7

Name of District	Population according to 2001 census	Population according to 2011 census	Percentage of variation (+)
Subarnapur	541835	610183	12.61

Details are given in Table No 1.4 in Voll-II

2.10.3 Religion wise distribution of Population:

Table No- 2.8

Sl. No.	Total Population	Category				
		Hindu	Muslim	Christian	Sikh	Others
1	610183	604693	2142	2372	62	914

Details are given in Table No 1.5 in Voll-II

2.10.4 Age distribution of population:

Table No- 2.9

Sl. No.	Total Population	0-5 years	6-14 years	15-59 years	60 years and above
1	610183	49114	71425	422606	67003

Details are given in Table No 1.7 in Voll-II

2.10.5 Sex Ratio:

Table No- 2.10

1	Sex Ratio (Females per 1000 males):	960
2	Child Sex Ratio (0-6 Years):	952

2.10.6 Literacy Rate:

Table No- 2.11

Literacy	Total	Male	Female
Literacy Rate	73.64	83.82	63.06

Table-2.12 -Vulnerable Group

Name of the district	Village/ Ward	Children (0-below 18yrs)		People with Disability		Elderly Person above 60 Years	
		Male	Female	Male	Female	Male	Female
Subarnapur	963	563	339	5786	3156	39725	30242

Details are given in Table No 1.6 in Voll-II

2.10.7 Households and its distribution:

There are 3 towns and 985 villages (855 habitat) in the district. The towns are Sonapur, Binka and Tarbha.

Table No- 2.13

Sl. No	Total Number of Families/HH	Category		Category			
		Rural	Urban	SC	ST	OBC	GEN
1	1,51,136	1,39,346	11,790	38,497	13,730	98,909	NA

2.11 Socio-Economic profile:

As per Census 2011 the socio-economic profile of the district is as follows:

2.11.1 Workforce participation-

Total workers constitute 14.98 %of total population.

Workforce participation composition & Percentage: -

Table No- 2.14

Male	Female	Total
57702 (63.12%)	33710 (36.88%)	91412

The workforce participation rate is 14.98 % for Subarnapur district against 41.8% for Odisha.

The major work force participation is from construction sector which constitute 95.2 % of the total work force participation. The participation of workers in Agriculture, Agriculture allied sector and others constitute 4.8 %. The main workers constitute 97.3 % & marginal workers constitute 2.7% out of the total work force. The participation of male main worker is higher than the main worker female and the participation of male marginal worker is higher than the female marginal worker.

2.11.2 Land Holding Pattern:

The average size of land holding pattern of the district is .92 ha. The major farmers are marginal farmers whose have possesses less than 1 ha of land. These types of marginal farmers constitute 64708 numbers in the district. There were only 1189 numbers of large farmers in the district who possess more than 10 ha of land. There are 7370 numbers medium, 18342 numbers semi medium, 36783 numbers small and 64708 numbers of marginal farmers in the district. There is total 128392 farmers in Subarnapur District.

2.11.3 Agriculture and Irrigation:

Agriculture plays a vital role in the district economy. It is the most important source of livelihood and provides employment to 74.24% of population in the district. Out of total area of 1, 85, 409 ha, total cultivable area constitutes of 1, 35, 415 ha (73.03%). The net sown area is 1, 27, 993 ha (69.03%). In Dunguripali & Binka block an ayacut area of 42840.2 ha has been created & irrigated by major irrigation project i.e. Hirakud Dam. In Birmaharajpur & Ullunda blocks 9450 ha ayacut area has been created & irrigated through medium irrigation i.e Hariharjore project. In Birmaharajpur, Dunguripali, Sonapur, Tarbha & Ullunda 7947.41 ha minor irrigation ayacut area has been created & irrigated by 73 numbers of minor irrigation projects.

2.11.4 Employment and livelihood:

Table No- 2.15

Agriculture	Agri Labour	Household Industry	Daily Labour	Fishery	Others
74,005	1,39,413	18,756	18756	1562	54,487

Around 46.97% of workforce employed in different sectors in the district. 74.24 % employment & livelihood is in agriculture sector. This sector is marked by very high dependency rate, under employment and seasonal unemployment. Due to lack of employment opportunities seasonal migration of these workers from this district to other districts of Orissa occurs during the time of transplantation of paddy plant in the rainy season and at the time of harvesting in winter season in every year.

2.11.5 Industries and mining-

The industrial profile of Subarnapur District reveals that there are only 34 numbers of small-scale industries like paddy processing unit and 42 nos. fly ash brick factories exist in Subarnapur District. There are 69 Handloom & Handicraft units exist and 5718 persons are engaged. Apart from 13112 persons are getting their livelihood from handlooms. Only one industry namely M/s. Mash Bio-Fuels Pvt. Ltd. is set up at Village-Panimura Jungle, PO- Tarbah of Subarnapur district which is a manufacturer of Ethanol/Motor Fuel.

2.11.6 Education

Literacy rate in Sonapur (73.64%) is above the average literacy rate of the state (73.45 %). 91886 numbers of children (6-15years) have enrolled their name in the educational institutions.

Sonapur has good educational infrastructure. There are 891 numbers of Govt schools, 101 private schools & 62 colleges. One central School, One JNV & 6 nos. OAV are in Subarnapur district. In addition to these educational institutions of Subarnapur other training institutions are available in this district. There is one District Institute of Education & Training (DIET). There are 6 numbers of Vocational institutes, one polytechnic (School for Diploma Engineering) college at Jhinki under Sonapur Block and 2 ITI colleges. One Nursing school named Yasoda Devi School of Nursing school is at Sonapur and One, Bal Gangadhar Tilak Law College in Subarnapur District.

2.11.6.1 Gross Enrolment Ratio:

Table No- 2.16

Elementary	Secondary	Total
63055	25295	88350

2.11.7 Housing

Housing is a basic necessity of life and has bearing on the quality of life. The absence of a residential house with basic amenities like sanitation and drinking water is considered deprivation. Ownership of a house infuses a sense of security and dignity in its owner, provides him with comfort and increases his confidence.

Table No-2.17

Homeless	Pucca houses	Semi Pucca houses	Kaccha houses	Total Houses
3783	88505	3497	25599	117601

Details are given in Table No 1.12 in Voll-II

2.11.8 Electrification:

All the villages in rural area and three ULBs of this district have been electrified. There are 01 Grid station, 19 nos. 33/11 KV substations and 4755 nos. distributing transformers for supply of electricity in the district

2.11.9 Drinking water and sanitation

There are 9537 numbers of tube wells and 365 Pipe water supply systems with 1207.63 km & 2472 nos. stand posts are existed in the district. 8907 households of thirty-nine wards of 3 ULBs and 87871 HH of 554 villages in rural areas have been covered through PWSs.

2.11.10 Migration:

Subarnapur District is not rich in industrial sector. No major industrial establishment & factories exist in Subarnapur. The people of Subarnapur have migrated to out states to earn a better livelihood. There are two types of migration

i.e registered & nonregistered migration. Only 20 persons from 20 households from Birmaharajpur Blocks have registered for migration to other states. Many people out migrated to other states from Subarnapur without registering themselves.

2.11.11 Food security:

Out of total 1, 59, 072 households, 1, 47, 710 households are covered under National Food Security Act (NFSA). 4, 99, 981 numbers beneficiaries are covered under NFSA. 29839.4 Qntl rice is being distributed among these beneficiaries monthly/annually. 126 numbers PDS outlets are opened to distribute the food among the beneficiaries of NFSA.

Out of 1, 59, 072 households, 4472 households including 15,020 beneficiaries are covered under State Food Security Scheme (SFSS). 751 qntl rice only is being distributed among these beneficiaries through 121 outlets.

In 4 numbers main storage points 147000 Qntl food grains have been stored for the above purpose.

2.11.12 Social Security:

Three number of social security schemes are running in this district. They are IGNOAPS, IGNWP & IGNDPS. 85626 numbers of beneficiaries covered under these schemes. 62908 numbers of beneficiaries are covered under IGNOAPS, 13776 numbers widows covered under IGNWP. 8942 numbers of beneficiaries are covered under IGNDPS.

2.12 Critical infrastructure:

2.12.1 Anganwadi centres:

An AWC is the focal point for delivering ICDS services upto 40 children during day time. Apart from this a village AWC is centre for delivering various health, nutrition services to the Adolescent girls, Pregnant & lactating mothers. Presently there are 1,556 numbers AWCs in which 25317 numbers children have enrolled. These AWCs also cater to 8645 numbers of pregnant and lactating mothers and 341 numbers of severely malnourished children.

2.12.2 Hospitals and Health Centres: -

District Head Quarter Hospital (DHH) is situated at Sonepur town. One Sub-Divisional hospital is at Birmaharajpur. There are 5 numbers CHC, 20 numbers PHC, 89 numbers health subcentres and five numbers private hospitals are rendering the health services in six Blocks of Subarnapur district. Besides, there is 1 Multi-Purpose Health Workers (Female) Training Centre at Subarnapur, 25 Roji Kalyan Samitis, 778 Gaon Kalyan Samitis (Village Health & Sanitation Committee). There are 87 doctors, 259 paramedical staffs, 112 ANMs and 630 Accredited Social Health Activists (ASHA) working as a link between the health system and Community.

2.12.3 Veterinary Hospitals:

10 numbers of Veterinary Dispensary are running to provide the health service to the livestock population in Subarnapur District. There are 39 numbers Livestock Aid centres & 49 numbers artificial insemination centres existing in all six blocks. There are 20 doctors and 27 Livestock inspectors engaged in the district.

2.12.4 Police and Fire Stations:

There are nine numbers of Police Stations in Subarnapur district. Sonepur, Dunguripali & Birmaharajpur block have two numbers of police station

each and Tarbha, Ullunda & Binka block have one police station each. 222 police personnel are engaged in nine police stations. 283 Home Guards are working additionally with the police personnel under the direct control of Superintendent of Police, Subarnapur. There are two numbers of fire stations in Dunguripali Block, one at Dunguripali & another at Rampur and rest 5 blocks have one fire station each at Sonapur, Birmaharajpur, Binka, Tarbha, & Ullunda and 101 fire personnel are engaged in the district.

2.12.5 Reserve police, paramilitary force:

There are ninety-one armed reserve police personnel performing their duty under the Reserve Inspector, APR, Subarnapur.

2.12.6 Cooperative Societies:

Sixty-three (63) numbers Primary Agriculture Cooperative societies are present in Subarnapur district. Sonapur have 10, Tarbha 12, Dunguripali 12, Ullunda 8, Binka 10 & Birmaharajpur have 11 numbers PACS. Total 48718 farmers are linked with 63 PACS. The PACS are entitled to distribute seeds, fertilizers & loans to the linked beneficiaries. The PACS are also taking the responsibility of procurement of paddy from its registered farmers. Through these PACs 8062381183 Qntl paddy procured during Kharif & Rabi 2022.

2.12.7 Banks and Post offices: -

There are 73 Bank branches & 93 ATMs and 100 numbers of Post Offices in Subarnapur district for commercial and financial transaction.

2.12.8 Road and Railway Network:

Road and Railway are the main source of Transport & Communication in the district. National Highway 57 (Khordha-Bolangir) passes through this district. The road transport network covers NH- 41.15 KM, State Highway- 129.35 KM, Major District road-102.45 KM, Rural roads- 1059.26 KM, G.P & Panchayat Samiti Road 2800.78 KM, Forest Road 40.4 KM & other road of 5 Km and Railway covers 13 Km in the Dunguripali Block, 22.584 Km in Sonapur Block and 6.680 Km in Tarbha block. Sonapur (2Km), Singhari (35 KM) & Dunguripali (60km) are three nearest railway station in the district. However, for rail transport & communication nearest railway stations of neighbouring district are Bichhupali 40Km, Bolangir 50 Km, Rairakhol 70 Km and Sambalpur 80 Km away from the district headquarter.

2.12.9 Cyclone and Flood Shelters:

OSDMA has constructed six numbers of Multipurpose Flood Shelters (MFSs) out of CMRF in Subarnapur District. The MFSs constructed are being used at the time of flood. The 6 numbers of flood shelters have been constructed in different places of flood prone area ie 1. Near Siddhartha college Binka NAC, 2. near Panthasala/Circuit house (Ward No-12), 3. back side of S.P. Residence (Ward No-1) of Sonapur, 4. Mundoghat Ullunda, 5. Tikirapada (Subalaya) Birmaharajpur and 6. Digsira Dunguripali.

2.12.10 Rain gauge and Automatic Weather Stations:

Rain gauge stations are located at all block headquarters. Another rain recording station along with wind wave, humidity and temperature recording station is located at the collectorate premises. The rain recording stations at block are given below.

Sl	Location of the Rain Recording Stations	Tel. No of Rain Recording Stations
1	Binka	06654-291643
2	Birmaharajpur	06651-295014
3	Dunguripali	06653-270223
4	Sonepur	06654-220720
5	Tarbha	06654-286036
6	Ullunda	06651-256501

CHAPTER- 3

HAZARD, VULNERABILITY AND RISK ASSESSMENT

Hazard, vulnerability & risk assessment (HVRA) is a systematic approach to identify hazards or risks that are most likely to have an impact on a geographical area, community, property and lives. The risks associated with each hazard are analysed to prioritize planning, mitigation, response and recovery activities.

This district has a history of recurring natural disasters, such as Flood, Drought, Hail storm, Lightning etc. As the distribution of rainfall is not uniform and monsoon is erratic, hence flood and drought visit in regular intervals with varying intensity.

To protect the district from the influence of any kind of hazard a systematic assessment is required so that the impact can be minimized and the disaster management will be done smoothly. Area of vulnerability & risk associated with the hazard may be studied & calculated and the preparedness, mitigation, response & recovery planning may be under taken accordingly.

3.1 Ground Study of different disaster:

3.1.1 Flood:

Flood occurs in almost all rivers in the district. Heavy rainfall in upper catchment, inadequate capacity of rivers to drain the high flood discharge, inadequate draining to carry away the rain water quickly to streams / rivers are the main cause of floods. Three major rivers Mahanadi, Tel, Ong and their tributaries experience most of the flooding rivers. The district experienced nine times flood situations during last two decades. They happened in 2003, 2006, 2008, 2009, 2011, 2014 2019, 2020 and 2022. There was loss of human life and properties, drinking water supply, roads, culverts, embankments, communication and power networks, public infrastructure, livelihoods and livestock, agriculture crops, fertility of lands due to sedimentation.

In Subarnapur, 180 numbers of villages of 62 GP & 16 numbers of wards of 3 ULBs are susceptible to flood. 145507 people, 40883 livestock population covering 29013 households are vulnerable to flood. The structural infrastructures like Anganwadi centres, school, hospitals, temple, road and other Govt & private properties are also in the vulnerable situation. People & livestock population are at risk that there would be any death incidents occurred, the infrastructures may be washed out and crop loss may be anticipated. So, life & property are at risk.

3.1.2 Drought:

Based on history of past droughts, the district experiences an uneven rainfall in all the areas of the district. This is aggravated by geographical variations and uncertain monsoons. The district experiences an average rainfall of 1418.5 mm in 61.6 rainy days. The areas under Birmaharajpur sub division experienced very low rainfall in comparison to other areas of the district. Due to scanty rain fall, the district experienced drought situation affecting crop loss and drinking water scarcity.

In the last 15 years, the district has faced drought situations in the year 2009, 2015, 2017 & 2018. The drought situation in the year 2015 affected 4 out of 6 tahsils of Subarnapur. They were Sonepur, Tarbha, Birmaharajpur and Ullunda. 40,761.291 ha crop area was severely affected in 637 villages in 60 GP in 4 blocks and 3 ULBs due to Drought 2015. But in the year 2017 Sonepur, Birmaharajpur and Ullunda blocks were affected due to drought. 3906.312 ha paddy crop was affected in 133 villages in 29 GP under three blocks. In 2018 only Sonepur Block was affected by drought. Total area of 328.95 ha in 58 villages of 11 GP under sonepur Block was affected in drought 2018.

50 numbers of villages in 10GP under Birmaharajpur, 68 numbers of villages in 12 GP under Sonepur & 34 villages in 7 GP under Ullunda blocks are more susceptible for drought. Tarbha block is also vulnerable to drought. The blocks namely Binka & Dunguripali are not susceptible to drought as assured irrigation facilities prevails in both the blocks. Above 60000 ha crop land may be expected to be affected by drought. So, the livelihoods of the beneficiaries are at risk which ultimately leads to influence the way of their life.

3.1.3 Pest Attack:

Pest attack is also a threat to this district. In the year 2017 this district has faced this disaster in all six blocks. 8546.45 ha crop land was affected by pest attack by which 17260 farmers were bear the hazard. In the year 2018 the whole district was affected by pest attack. 3493.11 ha paddy crop area was affected covering 22 wards of two ULBs & 450 villages of 94 GPs under six blocks of Subarnapur. In 2023, 28.0815ha crop loss due to pest attack in Tarbha Block was reported. Pest attack may be anticipated for the whole crop land of this district if the pest management would not do properly.

3.1.4 Lightning:

Govt of Odisha declared lightning as the State Specific Disasters as per Notification No.1936 Dt. 01.06.2015 to provide financial assistance to the deceased family members. From the year 2003 to 2023, total 106 numbers of lightning incidents have been occurred in which 81 number of human casualty & 50 numbers of animal death and 3 persons injured due to lightning as reported from different

Tahasildars of the Districts. The disaster has led to casualty and losses almost in every year. Agriculture is the major source of livelihood of this district and people generally exposed to outside field works during lightnings. However, in 2017 human causality is not occurred, only 16 animals have died due to lightning. But in the year 2018, Nine (9) persons & 11 animals have become the victim & died due to lightning which is the highest record for the district. Four human casualty and 7 animal death have occurred and three persons were injured in 2019. Three human & nine livestock deaths occurred in the year 2020. In 2021 five human & 2 animal and in 2022 six human casualties & 5 animal death have been occurred. The lightning strikes that have been occurred cloud to cloud & cloud to ground from 2019 to 2022 is as follows.

2019		2020		2021		2022	
CC	CG	CC	CG	CC	CG	CC	CG
7879	6455	12986	9231	9183	6765	10789	10820

Those people who are working outside are most vulnerable to this incident. The farmers, Agri labours, shepherds, stray business men, & the livestock population (during grazing) are particularly vulnerable to lightning. During lightning not only the loss of life is expected but also the loss of property due to house burning/damage may be occurred.

3.1.5 Heat Wave:

Heat wave is also another concern area in disaster in the district. The district experiences high temperature in the month of April to June in each year. The Average temperature exceeds more than 40 degrees Celsius during the peak of April & May in each year. Due to Heat wave situation, there were 25 numbers of death incidents reported in the district in the last 19 years. One person died due to sunstroke in 2019 and no human causality reported in the year 2020. The effect of heat wave was felt in the year 2003, 2005, 2008, 2012, 2014, 2015, 2018, 2019 & 2023. One person died due to sunstroke in last year-2023. However, due to sunstroke, seven persons died each in the year 2005 & 2012 which is high in the district.

Heat wave can be felt anywhere in the district during the peak summer. The hill side dwellers are vulnerable to heat wave. Particularly the outside daily wagers, construction labours, stray business men, footpath venders are most vulnerable to be the victim of heat wave. Their life & livelihood both are at risk.

3.1.6 Hail Storm / Whirlwind:

Hail Storm / whirl winds sometimes cause disaster situations in the district. These types of situations generally occur during March-May & again during July-October of every year. They have led to casualties, disruption of public utility and communication networks, damages to kutcha houses and road.

Hail storm has occurred in 2021 & 2023 in Subarnapur. In 2021 hailstorm one human casualty with 182.2283 ha crop loss was reported and in 2023 only crop loss of 79.968 ha was reported.

The incidents of whirlwind have happened in 2006,2011, 2012, 2018 & 2020. Due to whirlwind in 2018 life of two human beings & a cow have lost, crop field of 7494.37 ha of 116 villages in 35 GP coming under four blocks namely Binka, Dunguripali, Sonapur & Ullunda and 12 wards of 1 ULB (Binka NAC) was affected & 707 houses i.e 234 houses in Ullunda block & 473 houses in Sonapur block were damaged. In 2020 only six goats have lost their life & 1 house damaged. But in 2006, 2011 & 2012 only 138, 220 & 18 numbers house damage respectively were recorded.

3.1.7 Fire Accident:

Fire accident happens mostly in peak dry and hot season during March-June. From 2005 to 2022 thirty-seven (37) human lives and life of 36 goats have been lost and 4563 houses have been burnt due to fire accidents.

3.1.8 Forest Fire

Forest fire is a human induced hazard. During the dry & summer forest fire occurs. People consciously burn the trees for their vested interest which spread largely in the jungle. There is 37 nos. reserved/protected Forest with an area of 391.94475 SqKm, 15nos. revenue/village forest wit an area of 21.105 SqKm, 2 nos. proposed reserve forest with an area of 4.82 SqKm, unclassified forest 0.03 SqKm and 10.85495 SqKm un-demarcated forest area under the control of Revenue department. Subarnapur district is divided into four Forest ranges namely Sonapur, Birmaharajpur, Ullunda & Binka range. Since last five years 1380 numbers of incident of forest fire have occurred. While extinguishing fire with air blower one para staff have been trapped in forest fire and died. Wild animals of the forest area become the victim of the forest fire.

3.1.9 Snake Bite:

Snakebite is a state specific disaster. From the year 2015 to 2023 Ninety (90) lives have lost due to snake bite. In 2019 seventeen (17) persons victimized to snakebite which is highest in comparison to other years. The victims of snake bite are mostly those people who work in the agriculture field. It is observed that incidence/cases of snakebite are relatively more during the monsoon period. People walking without protective gumboot & without any light during the night become the victim of the snakebite. In Subarnapur District some parts of the Sonapur block are vulnerable to this hazard. Sometimes unconsciousness is also a factor contributing for the loss of life.

3.1.10 Drowning:

Drowning as a state specific hazard has also contributed in the statistics of causalities. Since 2003 to 2023 total 92 numbers drowning casualty occurred in Subarnapur district. In 2016 ten (10) persons, in 2017 & 2018 seven (7) persons each year, in 2019 ten (10) persons have lost their lives in drowning. In the year 2020 & 2022 fifteen (15) persons each year have died due to drowning which are the highest record for Subarnapur. In 2021 Fourteen (14) persons & in 2023 thirteen

(13) persons died due to drowning. In the last 4 years drowning death is higher than preceding 4 years.

3.1.11 Building Collapse:

Now a day's bridge, building collapse is occurring in many places. Subarnapur district is not coming under the earthquake zone. People are not following the National Building Code during the construction of the building. The dilapidated buildings are not broken down and used which threaten for the loss of life. In 2003 one person & in 2013 two persons were died due to building collapse. The kutcha & thatched houses are vulnerable during the rainy season & in the event of whirl wind when the chances are more for broken down.

3.1.12 Road Accident:

Road accident is a local disaster which is going on every day. From 2009 to 2023, 1997 incidents have been occurred in which 782 persons have died and 3398 persons have been affected due to road accident. In the year 2022, eighty-eight (88) persons died due to road accident which is the highest record. There are some vulnerable points identified which are accident prone area. Careless driving with a motivation to overtake & suppress the other is the main factor causing the road accident.

3.1.13 Dam break/ Spill way related flood:

The incident of Dam break is another hazard which threat for the loss of life & property. If the catchment area of the dam receives heavy rain, the water level increases rapidly. The surplus water may be discharged by the spill way. If the discharged quantity of water is more & increase gradually then it may cross over the distributary canal system & may create a flood situation in the distributary area. Secondly if the spill way is unable to discharge the surplus water smoothly the water level increases rapidly in the dam. When it crosses the storage capacity of the dam or over the danger level then there would be a chance of dam break. The dam break will create sudden flood situation in the lower side of the dam which is more dangerous than the spill way flooding. However, in both the cases there is a chance of loss of life & property & infrastructure.

Harharjore is the medium irrigation project situated in Luhakhandi village under Birmaharajpur Block of Subarnapur district having 7988 Ham storage capacity. The pre & post monsoon inspection of structural measures have completed. The structural inspection assures that there is no such threat for its breakdown.

3.1.14 Cyclone: -

Subarnapur district is far away from the sea. Cyclone as disaster is not so effective as it is in the coastal areas. But the impact of cyclone may be felt in Subarnapur in the form of heavy rain & slight high wind speed may be felt. As cyclone is associated with heavy rain, the flood situation may be arrived. The past history reveals that there is no such situation raised due to cyclone.

But in 2018 due to cyclone PETHAI Subarnapur District experienced heavy rain in all six blocks & three ULBs. Crop area of 5588.6 ha was affected. 752 villages of 109 GP & 19 wards of 3 ULBs were affected in the heavy rain due to PETHAI.

3.1.15 Other Incidents:

Animal menace:

Human Animal Conflict:

4 Loss of Human Lives and Property due to Animal Attack-

Table-3.1

Year	Vulnerable Place Village/Panchayat etc.)	Causing Agent/Animal (Elephant, Bear, Crocodile etc.)	Number of Human Lives lost during last 5 years	Damage of House and Property during last 5 years	Crop Damaged area in Ha.
2018-19	At Bishalpali of Binka Range	Wild Boar	1	2 nos.	65.662 Ha. By Wild Boar & Elephant
2019-20	NIL	NIL	NIL	12 nos.	64.483 Ha. By Wild Boar & Elephant
2020-21	At Hatipahul of Ullunda Range	Wild Elephant	1	15 nos.	59.585 Ha. By Wild Elephant & Boar
	At Pandakital of Ullunda Range	Wild Elephant	1		
	At Bankatentuli of Sonapur Range	Wild Elephant	1		
2021-22	At Matiapali of Sonapur Range	Wild Elephant	1	16 nos.	77.321 Ha. By Wild Boar & Elephant
2022-23	At Sukhilasar of Sonapur Range	Wild Elephant	1	6 nos.	103.475 Ha. By Wild Boar & Elephant
2023-24	At village Papi of Binka Range	Wild Boar	1	1 No.	51.855 Ha. By Wild Boar & Elephant
	At village Sukhilasar of Sonapur Range	Wild Elephant	1		

5 Loss of Animal Lives due to Man-Made Causes

Table -3.2

Year	Vulnerable Place Village/ Panchayat etc.)	Causing Agent (Railway line/Electric Transmission lines etc.	No. of Incidents	No. of Animal Lives Lost
2017-18	At Kamira of Birmaharajpur Range	Poaching	1	1 male Wild Sambar
2018-19	NIL	NIL	NIL	NIL

2019-20	At Sarasdadar of Ullunda Range	Due to electrocution	1	1 male Wild Elephant
	At Sarasdadar of Ullunda Range	Due to electrocution	1	1 male Wild Boar
	At river bed of Mahanadi 3 KM distance from Badali RF	Natural Death	1	1 male Wild Elephant (Calf)
2020-21	Near Jharbahali of Ullunda Range	Natural Death	1	1 male Wild Elephant
	Near Brahmanipali of Ullunda Range	Death may be due to shock as a result of enteritis	1	1 female Indian Gour
	Near Brahmanipali of Birmaharajpur Range	Death may be due to hypovolemic	1	1 male Barking Deer
	Inside Binka RF of Binka Range	Reason not known	1	1 male Wild Boar
	At Laturpet of Ullunda Range	Natural Death	1	1 female Wild Bear
2020-21	NH-57 Bolangir-Sonepur road under Sonepur Range	Striking against a hard object	1	1 male Wild Boar
	At Kutmenda of Ullunda Range	Hunting by Axe	1	1 Wild Pig (Un-identified sex)
	Near Brahmanipali of Sonepur Range	Could not be ascertained as the carcass was putrefied	1	1 male Wild Elephant (Calf)
2021-22	Near Ghichapali of Birmaharajpur Range	Could not be ascertained as the carcass was found in a putrefied condition	1	1 female Wild Boar
	Inside Barapahad RF of Sonepur Range	Death might be due to Acute Hepatitis	1	1 male Wild Elephant
	Near Bajikhhol of Sonepur Range	Post-mortem report is awaited	1	1 male Wild Elephant
2022-23	Inside Baradunguri RF near Mahada village of Binka Range	Due to electrocution	1	1 male Wild Elephant

Biological Disaster/Epidemics:

In 2018 epidemics (Loose Motion) spread over Sonepur Municipality area. 171 persons were suffered from loose motion and admitted in DHH, Sonepur. After primary treatment all were discharged from DHH.

Chemical & Nuclear Disaster:

There is one large-scale industries using hazardous chemical exists in Subarnapur District. No chemical disaster happened in Subarnapur District. As no nuclear set up is in Subarnapur, Nuclear & Radiological disaster will not occur in this district.

3.2 Vulnerability and Risk Assessment related to disasters:

Table No- 3.3 Vulnerability assessment

Type of Hazards	Time of Occurrence	Vulnerability	Risk	Vulnerable areas	Suggested Action
Flood	July-September	Villagers reside near the river bank/embankment, low laying areas and near the dam side	Loss of Life, Livestock, Infrastructure, livelihoods, environment. Road damage, disturbance in communication & transportation, Increase of diseases	,Birmaharajpur, Tarbha Sonepur & Ullunda block of this district. Some part of Dunguripali block. (List of flood Vulnerable village is attached in Voll- II)	Repair & protection at the weak point of the embankment. Follow up the evacuation process after getting the warning Repair, raising and construction of embankment. Awareness creation among people.
Drought	September-December	High land, uneven rainfall, unassured irrigation, unwise water management Water scarcity,	Crop Loss, Food insecurity, Loss of livelihood, less income, indebtedness, suicide	Birmaharajpur & Tarbha are more prone to drought and Sonepur, & Ullunda block are partially prone. (List of drought Vulnerable village is attached in Voll- II)	Promotion of assured irrigation. Practice of using drought resistant seeds. Selection of short term & less water consuming crop. Judicious water management
Pest Attack	August-December	Lack of knowledge on pest management. Use of duplicate pesticides by the poor farmers	Crop Loss, Food insecurity, Loss of livelihood, less income, indebtedness, suicide	All blocks of Subarnapur District	Awareness for pest management. Supply of certified pesticides. Wise water management.
Heat Wave/Sunstroke	April-May	Hillside dwellers, Labours working outdoors, Construction workers, stray business man, transport	Loss of Life & Livestock Loss of livelihoods, Illness.	All blocks of Subarnapur dist.	Awareness creation. Follow the Do's & Don't Do Afforestation

		workers, Animal grazers, old & aged person			
Fire	March- June	Kuttcha/thatched houses families. Family using fire woods for cooking openly near the house	Loss of Life, Livestock, Infrastructure, livelihood & environment	All blocks of Subarnapur district	Awareness creation. Adoption of fire safety measures.
Lightening	April- September	Labours, working outdoors, Agri labours, Construction workers, stray business man, transport workers, Animal grazers	Loss of life, livestock, infrastructure	All blocks of Subarnapur district	Awareness creation for staying under roof rather than any open place Follow the early warning issued. Plantation of palm trees
Whirl wind	March- June	Poor families having Kattcha Thatched houses & tin sheet roof. Houses near to the dry & dead trees.	Loss of life &, property, road damage, obstruction in communication, threat for loss of livelihoods	All blocks of Subarnapur district	Awareness generation Obey the early warning issued Provision for construction of pucca houses. Trimming the dead branches or uprooted the dead trees near the house
Forest Fire	March- June	Dwellers reside in & near the forest, wild animals in the forest, forest watchers	Loss of life, property & environment pollution,	Binka, Birmaharajpur, Sonapur & Ullunda	Awareness creation for protect the forest from fire. Make stronger the watch & ward of the forest. Keep ready the fire extinguishers equipment. Provision of afforestation
Road Accidents	Any time	Careless drivers, dwellers reside adjacent to the narrow road side, road cross the village dividing in two parts.	Loss of life &, property, Obstruction in communication & transportation.	All blocks of Subarnapur district	Awareness creation. Ban for driving without valid licenses, Tighten the observance of traffic & rule of the road.

					Ban for the running of unfeasible vehicles Ban for driving taking alcohol.
Snake bite	All time	Forest & hillside dwellers, Agri labours, People practicing open toilet, those who are walking without gumboot & light at night.	Loss of life & livestock	All block	Awareness creation. Use of snake guard Adopt treatment at hospital instead of treatment by the Gunia.
Drowning	Any time	Residents near embankment & other water bodies. Mentally retarded, physically challenged, weak old person, Children	Loss of life	Any where	Awareness generation Proper care for children, old persons, mentally retarded & physically challenged Immediately start the treatment in medicals
Building Collapse	Any time	Dilapidated & old buildings, Katcha houses, Buildings constructed denying NBC,	Loss of life & property, loss of livelihood,	Any where	Adherence & execution of NBC
Dam Break	During monsoon	Villagers residing at the downstream of the Dam	Loss of life & property, Loss of livelihood	Some villages of Birmaharajpur	Regular inspection of the Dam. Spill way drainage clearance Regular repairing & maintenance of dam
Cyclone	Sept-Oct	Villagers residing at low laying area having katcha houses	Loss of life & property, Loss of livelihood	All blocks	Awareness creation Acceptance of warnings issued by Govt.

3.3 Major Disasters/ Incidents during 2003-2023

A brief profile of major disasters/ incidents occurred in the district during last 20 years (2003 to 2023):

Table No: 3.4 major disasters/ incidents-2003-2023

Sl. No	Disaster/ Incident	No. of incidents during	No. of Death	Affected Population	Livestock Loss	Houses Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							School/ AWC Buildin	Hospita	Road in Km.	Other Critical Infrastr	
1	Flood	9	2	369133	285	88660	29	1	376.692	160/115 boat/net	808208.926
2	Drought	6	0	47345	-	-	-	-	-	-	45026.552
3	Pest Attack	3	0	17309	-	-	-	-	-	-	12067.6415
4	Fire Accident	1209	37	6168	36 Goat	3784	-	-	-	-	-
5	Hail Storm	2	0	161	0	0	-	-	-	-	262.1963
6	Boat accident during flood	1	3	-	-	-	-	-	-	-	-
7	Lightning	106	81	3	50	-	-	-	-	-	-
8	Heat Wave	23	25	-	-	-	-	-	-	-	-
9	Whirlwind	7	2	-	7	1084	-	-	-	-	7494.37
10	Drowning (Other than during Flood)	87	92	-	-	-	-	-	-	-	-
11	Drowning (During Flood)	1	1	-	-	-	-	-	-	-	-
12	Snakebite	89	90	-	-	-	-	-	-	-	-
13	Heavy Rain	4	1	28736	13 animal 1200 Poultry	3781	-	-	-	17 nos. PWS	530.7284
14	Animal Menace	31	9	-	-	52	-	-	-	-	946.396
15	Building Collapse	2	3	-	-	-	-	-	-	-	-
16	Road Accident	1997	782	3398	-	-	-	-	-	-	-
17	Forest Fire	2893	-	-	-	-	-	-	-	-	-

Details are given in Table No 3.1 in Voll-II

If we will have a look on the above table, we will find that the local disasters like forest fire & road accident incidents are more in number than those of NDRF & State Specific disasters. If we take into account the NDRF & state specific disaster considering the number of incidents occurred the ranking of proneness or vulnerability to different hazards of the district will be ranked as follows.

Hazard	No. of Occurrence	Rank	Disaster	No. of Occurrence	Rank
Fire Accident	1209	01	Whirlwind	7	07

Lightning	106	02	Drought	6	08
Snakebite	89	03	Heavy Rain	4	09
Drowning	87	04	Pest Attack	3	10
Heat Wave	23	05	Hail Storm	2	11
Flood	9	06			

If we analyse the damaging capacity of the disasters in terms of affected population, damage to houses & other infrastructure and crop loss etc more vulnerable condition has been created by the following hazards and the hazards may be ranked as follows. The ranking has been done considering the severity of affectedness in terms of loss of infrastructure, house damage, crop loss, affected population and casualty of human & livestock population.

Hazard	No of incident	No of affected population	Human/Livestock Loss	Houses Damaged	AWC/School Buildings	Critical infra structure	Crop loss	Rank
Flood	9	369133	2 / 285	88660	29	160	808209	1
Heavy rain	4	28736	1 / 13	3781	0	17	530.72	2
Whirlwind	7	4336	2 / 7	1084	0	0	7494.37	3
Fire Accident	1209	6168	37 / 36	3784	0	0	0	4
Drought	6	47345	0	0	0	0	45027	5
Pest attack	3	17309	0	0	0	0	12068	6
Hail Storm	2	161	-	-	-	-	262..1963	7

Block ranking for flood basing on the occurrence of flood is as follows.

SI No	Name of the Block	Frequency of occurrences	Rank
1	Birmaharajpur	7 times	1
2	Binka	7 times	2
3	Sonepur	6 times	3
4	Ullunda	5 times	4
5	Dunguripali	5 times	5
6	Tarbha	4 times	6

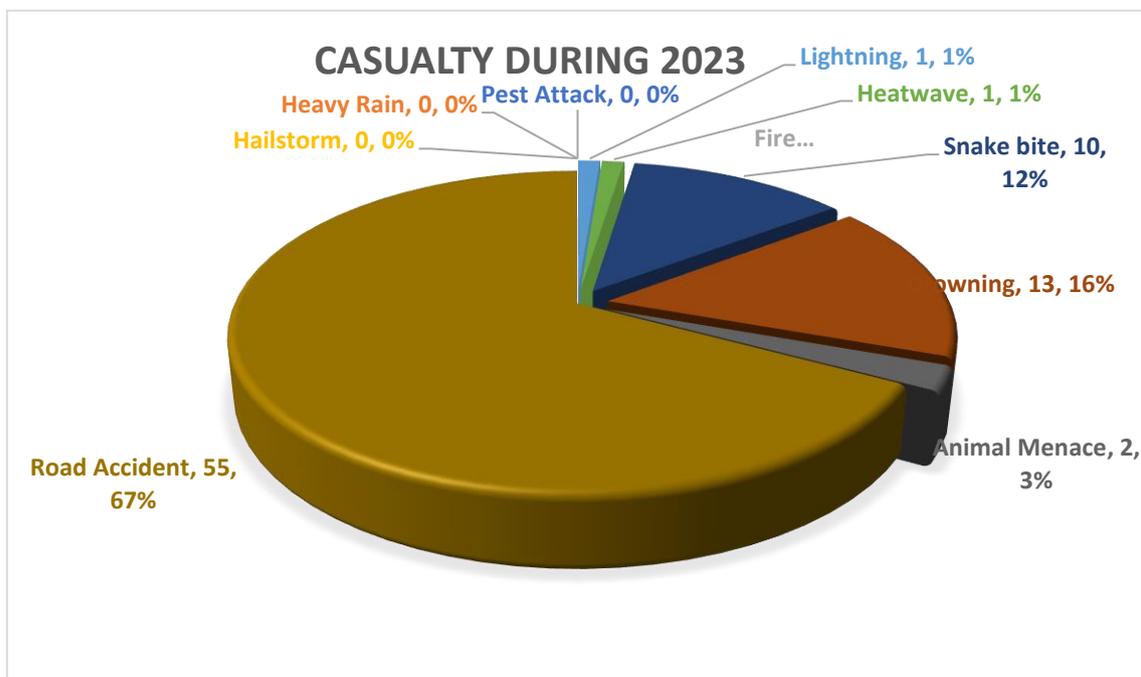
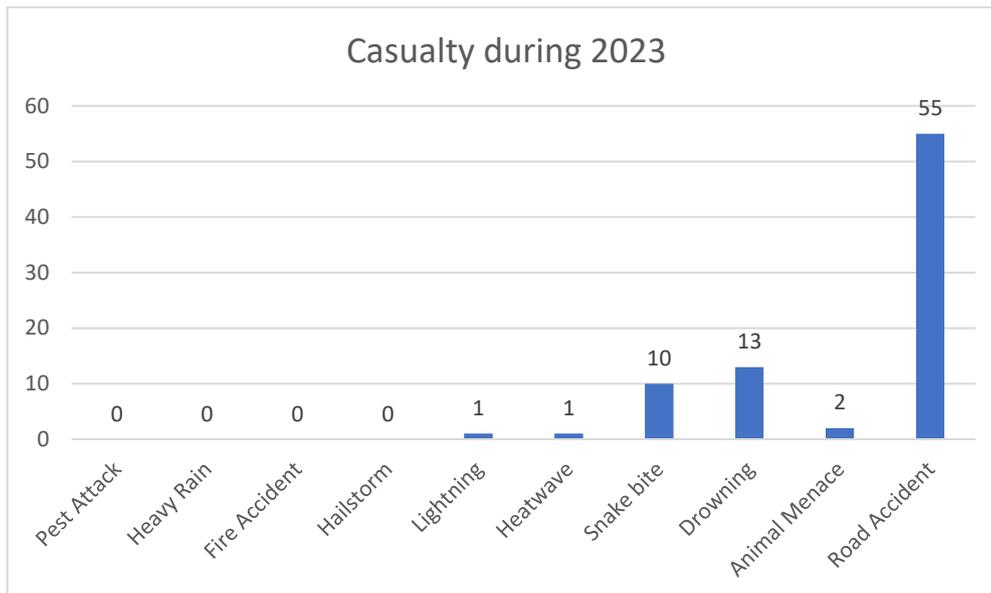
3.4 Major Disasters/ Incidents in the District during 2023:

Table No: 3.5

Sl . No.	Disaster/ Incident	No. of incidents during 2023	No. of Deaths	Affected Population	Livestock Loss	House Damaged	Damage to Infrastructure				Damage and loss of Crop Area (in Hectares)
							AWC/ School Buildings	Hospitals	Road in Km	Other Critical Infrastructure	
1	Pest Attack	1	0	49	0	0	0	0	0	0	28.0815
2	Hail storm	1	0	161	0	0	0	0	0	0	79.968
3	Fire	8	0	16	0	10	-	-	-	-	-
4	Heavy Rain	1	0	3846	1200 poultry	744	0	0	0	0	93.7284
5	Lightning	1	1	-	0	-	-	-	-	-	-
6	Drowning	12	13	-	-	-	-	-	-	-	-

7	Snake Bite	10	10	-	-	-	-	-	-	-	-
8	Heatwave	1	1	-	-	-	-	-	-	-	-
9	Road accident	95	55	82	-	-	-	-	-	-	-
10	Animal menace	2	2	0	0	1	0	0	0	0	0

The above analysis reveals that 3 types of disaster have been occurred from NDRF approved and five nos. state specific disasters and other 2 i.e Road Accident & Animal Menace are local disasters. Highest death (95) has been occurred due to Road Accident and lowest (01) due to Lightning & Heatwave and zero causality has been recoded from Heavy Rain, Fire, Hailstorm & Pest Attack.



3.5 Flood vulnerable villages in general

Table No- 3.6 Flood vulnerable villages

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	Binka	8	18	20435	1566	5306	12	-	12	-
2	Birmaharajpur	7	25	22340	6382	5520	18	2	94	-
3	Dunguripali	7	8	15770	1187	3972	7	1	28	-
4	Sonepur	12	33	27350	6933	6616	26	1	-	-
5	Tarbha	18	56	39964	19956	9618	37	-	-	-
6	Ullunda	10	40	22494	4819	5672	23	-	120	-
	S.Total	62	180	148353	40843	36704	123	4	254	-
7	Sonepur Municipality	1	6	2318	167	648	7	1	-	-
8	Binka NAC	1	5	1521	119	407	7	1	32	
9	Tarbha NAC	1	5	1368	124	382	10	1	5.1	
	S.Total	3	16	5207	410	1437	24	3	37.1	
	G.Total	62/3	180/16	153560	41253	38141	147	7	291.1	

Details are given in Table No 3.2 in Voll-II

3.6 Causing agent wise flood vulnerable areas of the district

Table No: 3.7:

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
1	River-1 Mahanadi	4/2	25/2	89/11	72426		18144
2	River-2 Tel River	2	10	38	17728		4217
3	ONG River	2	10	15	24292		6131
4	Suk Tel River	2	11	27	29396		7142
5	Nibrutijore	1/1	3/1	8/5	7307		1873
6	Jeeranadi	1	1	1	1209		319
7	Flash Flood & Gaikhainala	1	1	1	1206		315
	Total	6/3	62/3	180/16	153560	41253	38141

3.7 Agriculture and Flood Vulnerability

Table No. 3.8: 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	Sonepur	9020	10133	299	0
2	Tarva	8220	13154	598	242
3	Binika	15330	4060	2000	1200

4	Dunguripali	21855	1555	2165	249
5	Birmaharajpur	14665	10509	600	350
6	Ullunda	16740	5910	755	310
	Dist. Total	85830	45321	6417	2351

3.8 Electrical Infrastructure in the Flood Prone Area

Table No. 3.9 Electrical Infrastructure in the Flood Prone Area

Name of the Block/ULB	No. of Grid Stations(132/33)	No. of 33/11 KV Sub-station	No. of Distributing Transformer			Conductor/ Electrical lines-11 KV of 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				
Subarnapur		19	383	-	-	373	1876	8	22.4

Details are given in Table No 2.9 in Vol-II

3.9 Drinking water and Flood Vulnerability

Table No 3.10 Drinking water and Flood Vulnerability

Sl. No	Name of the district	Total No. of Tube Wells	No. of Tube Wells with raised platforms	No. Of Sanitary Wells	PWS Schemes				Other Drinking Water Sources If any
					Total No.	Length in Km	No. of Over Head tanks	No. of Stand Points	
	Subarnapur	8850	0	0	370	1053.26	370	2160	

Details are given in Table No 1.35 in Vol-II

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

Table No. 3.11 Events/ Festivals where mass gathering occurs

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)
1	Magha mela	Khaliapali, GP- Khaliapali, Sonapur	5 days	February	10000	
2	Kartik Purnima	Rameswar Temple, Sonapur	1 day	October	7000	
3	Makar Yatra	Baghapali GP- Kotsamalai	1 day	January	12000	
4	Subarna Loka Mahostav	Sonapur Town	5 days	Jan- April	20000	
5	Ratha Yatra	Sonapur	9 days	July	5000	
		Tarbha	9 days	July	5000	
		Binka	9 days	July	5000	
		Birmaharajpur	9 days	July	5000	

6	Siva Ratri	Subarnameru & Rameswar Temple Sonapur	1 day	Feb-March	5000	
7	Fagun Purnima	Gopaljew Temple Gadabhitar, Sonapur	1	March	5000	
8	Bali Yatra	Khameswari Temple Sonapur	15 days	Sept-October	8000	
9	Dhanu Yatra	Ullunda	7 days	Dec-Jan	10000	
10	Urse	Tarbha	1 day	April	6000	

3.11 Boat plying:

Boats ply during the rainy season at different Ghats in the District.

Table No. 3.12

Sl. No.	Name of the Block	Name of the ghat/ boat operation point	Name of the water body	No. of Panchayat s/ villages connected	Daily to and fro movement of people in Nos. (Approx	Type of boats operating in nos	
						Mechanised	Non-Mechanised
2	Tarbha	9	Tel river & Nibrutijore	9	1339	0	9
4	Birmaharajpur	2	Mahanadi	4	150	0	2
5	Ullunda	1	Mahanadi	4	200	1	0

Boat operation points:

Boats are to be deployed at the following strategic points to manage the flood rescue operation & supply of relief materials during the flood situation.

Table No:3.13 Boat deployment points

SI No	Name of Block	Name of boat point	Name of GP	Service villages	Name of waterbody
1	Sonapur	Baidyanath	Hardakhhol	Chhatapipal	River Tel
				Baidyanath	
				Narsinghgarh	
2	Birmaharajpur	Armada Khambeswaripali ferry ghat	Ufula	Khambeswaripali	Mahanadi
		Duleswar ferry ghat	Pitamahul	Duleswar	
		Mahanadi ferry ghat	Subalaya	Subalaya	
				Kelegaon	
				Nuapada	
				Gobindpur	
		Mahanadi ferry ghat	Jatesingha	Jatesingha	
				Keutipali	
				Ektal	
		Mahanadi ferry ghat	Bagbar	Bagbar	
				Deuli	
				Nuagarh	
Phulchara					

3	Binka	Jharapada (Manigaon) Ghat	Sindurpur	Jharapada (Manigaon)	Jeera River
		Jharapada (Ganeshpur) Ghat	Sindurpur	Jharapada (Ganeshpur)	Mahanadi
		Pandakital ghat	Mahadevpali	Pandakital	Ong River
		Gariapali ghat	Mahadevpali	Gariapali	Mahanadi
		Jharapada (Tulundupali) ghat	Seledi	Jharapada (Tulundupali)	Mahanadi
4	Ullunda	Dharmasala	Mundoghat	Mundoghat	Mahanadi
				Hikudi	
				Lehedi	
		Telenda	Nimna	Nimna	Mahanadi
	Telenda				
	Manamal				
	Lamtul	S. Patrapali	S. Patrapali	Mahanadi	
			Keutipali		
			Sindhol		Sindhol
	Ullunda	Chadeipank	Chadeipank	Chadeipank	Mahanadi
Laxmanpur					
Ichhapur					
Badhila		Bishipada	Badhila	Mahanadi	
Kapasira	Panchmahala	Kapasira	Mahanadi		
5	Tarbha	Brahmani	Brahmani	Brahmani	Tel River
				Bhurad	
				Bandhapali	
				Bahiramuhan	
		Basasankar	Charbhata	Basasankar	
				Malpada	
				Mahadevpali	
				Jharbahali	
				Dunguripali	
		Karlamuhan	Balikhamar	Sukhilasar	
				Sandhijor	
				Bileiberna	
				Sindhol	
		Balipata	Singhari	Karlamuhan	
				Putukipali	
				Balipata	
				Badtenda	
Jharbadjore					
Kayapadar	Kamsara	Junani			
		Chirabahal			
		Jadapal			
Tulunda	Tulunda	Kayapadar	Nibruti Jore		
		Tulunda			
		Narda			
Bankeda	Maradugochha	Naadhara	Tel River		
		Bankeda			
				Gunjimunda	

3.12 Major industrial establishments/chemical & other hazardous material storage points: -

There are one major industrial establishments/chemical factory namely Mash Bio-Fuels Pvt Ltd & no other hazardous material storage points exist in Subarnapur district. 39 numbers Petrol Pumps & 12 numbers of LPG cylinder storage go-downs may create hazardous situation but the dealers have taken safety measures to avoid any mishaps.

3.13 Drought:

Drought situation occurred six times in the past i.e.in the year 2004, 2007, 2009, 2015, 2017and 2018 in last 20 years in Subarnapur district. There are Six hundred thirty-seven villages of four blocks (Sonepur, Tarbha, Birmaharajpur & Ullunda) & five wards in Sonepur municipality & six wards in Tarbha NAC, have experienced drought in the year 2015. In the year 2015 due to drought 40761 ha agricultural crop area had lost. 33301 farmers have got the agricultural input subsidy. In the previous year 2017 three blocks namely Sonepur, Birmaharajpur & Ullunda were affected by drought. 6041 numbers farmers have hurt by the drought as 3936.34 ha paddy land destroyed in the drought situation. In 2018 only Sonepur block was affected due to drought. 328.95 ha paddy crop area in 58 villages of 11 GP of Sonepur were affected. They have got the agricultural input subsidy towards the compensation.

3.14.1 Cultivated Area- Rain fed/ irrigated

Table No.- 3.15 Cultivated Area- Rain fed/ irrigated

Sl. No.	Name of the Block	Average Annual Rain Fall	Ground Water Level (in metre)	Cultivated Area (In Hectares)			
				Paddy		Non- Paddy	
				Rain fed Area	Irrigated area	Rain fed Area	Irrigated area
1	Sonepur	--	15	10000	5300	9570	1575
2	Tarbha	--	16	4000	4220	13154	0
3	Binka	--	12	0	15330	0	4060
4	Dunguripali	--	13	45	18785	355	3820
5	Birmaharajpur	--	13	5842	7608	6471	3179
6	Ullunda	--	14	1990	14750	4890	1020
	Total	1418.5		21877	65993	34440	13654

3.14.2 Drought Vulnerability

Table No. 3.16 Drought Vulnerability

Sl. No.	Name of the Block	Year- 2009			Year – 2015			Year-2017			Year- 2018		
		No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)	No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)	No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)	No. of GPs experienced drought	No. of Villages	Agricultural Crop Area lost (in Hectares)

1	Sonepur	NA	NA	NA	NA	13	144	7259	0	12	62	931.77	0	11	58	328.95	0
2	Sonepur M	NA	NA	NA	NA	18	5	105	0	0	00	0	0	0	0	0	0
3	Tarbha	NA	NA	NA	NA	1	169	10700.7	0	0	0	0	0	0	0	0	0
4	Tarbha N	NA	NA	NA	NA	6	6	76.3	0	0	0	0	0	0	0	0	0
5	Biraharajpur	NA	NA	NA	NA	13	166	11362	0	10	37	1367.82	0	0	0	0	0
6	Ullunda	NA	NA	NA	NA	16	158	11258	0	7	37	1606.72	0	0	0	0	0
	Total	NA	NA	NA	NA	67	648	40761	0	29	133	3936.3	0	11	58	328.95	0

3.15 Drinking Water Crisis:

According to the report of RWS & S and PHD there is no drinking water crisis in Subarnapur district. All the villages/wards have availed the drinking water either by tube wells or pipe water supply. RWSS, PHD and BDOs monitor their functionality and ensure restoration at the earliest.

Table No3.17 Drinking Water Crises

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	No. of Villages/ Wards	Population
1	Binika	0	0	7	4042	0	0	0	0
2	BMPUR	0	0	3	1551	0	0	0	0
3	Dunguripali	0	0	8	1983	0	0	0	0
4	Sonepur	0	0	2	473	1	322	0	0
5	Tarbha	0	0	3	1601	0	0	0	0
6	Ullunda	0	0	1	145	4	482	0	0
7	Sonepur Municipality	0	0	0	0	0	0	0	0
8	Binka NAC	0	0	0	0	0	0	0	0
9	Tarbha NAC	0	0	0	0	0	0	0	0
	Total	0	0	24	9795	5	804	0	0

3.16 Road Accidents: -

Table No- 3.18 Accident prone road

SL NO	Stretch of Road No.		Length in kms	No. Of accident-prone areas	No. Of villages/ habitations adjacent to accident prone areas
	From	To			
1	Arjunpur chowk NH 57	Kulipali chowk	0.7 Km	1	-
2	Badbahali chhak	Kendu leaf office	0.5 Km	1	4 villages
3	Bhajbalpur	Mahada Bridge	0.7 Km	1	8 villages
4	Ghatkaintara	Ghatkaintara Bridge	0.5 Km	1	1 Villages
5	Mahanadi bride	Hikudi	1.5 km	1	02 villages
6	Jhinki Tikra on NH 57	Jhinki	0.5 Km	1	Jhinki
7	Block Chowk	Mahanadi Bridge	1 KM	1	Sonepur Town

8	Sialjuri Village NH 57	Khari	1 Km	1	Sialjuri, Khari, Mahule
9	Jampali Chowk SH 55	Jampali	1 Km	1	Jampali
10	Kamira Chowk SH 55	Kamira	0.5 Km	1	Kamira Bhawanipali
11	Patrapali	Kapasira (SH 15)	1 Km	1	Kapasira, Patrapali
12	Podhatikira Chowk SH 15	Palasa	03 Km	1	Palasa, Podhatikra, Bidurpali-
13	Ullunda Bus Stand	Gandabahal Chowk SH 15	1 Km	1	Ullunda, Gandabahal
14	Khuntpali Village NH 26	Khuntpali	0.5 Km	1	Khuntpali
15	Cherupali Chowk NH 26	Cherupali	1 Km	1	Baidupali, Cherupali
16	Dunguripali Bazar on NH 26	Baidupali	1 Km	1	Dunguripali, Sahala, Baidupali
17	Pandakital (MDR-39)	Bankipali	3 KM	1	Pandakital, Bankipali, Gidhmal

3.17 Population Requiring Special Care:

Table No 3.19 Population Requiring Special Care

S I. N o .	Block/ ULB	Total no of Hous e hold	Total Popula tion	No. of HHs headed by Women	No. of HHs heade d by PWD	No. of Persons with Disability		No. of Wido w	No. of Children		No. of Orphans		No. of Aged Persons (60 and above)		No. of Pregnant and lactating mothers
						M	F		0-5 Years	6-14 Yrs	M	F	M	F	
1	Binka	23933	122771	2369	541	908	774	3449	7074	9685	65	54	5584	5768	1211
2	Birmaharaj pur	23828	104591	2132	361	515	370	3183	9053	12062	152	126	4462	4412	1311
3	Dungurip ali	31127	127184	3231	797	971	736	5178	9344	13650	61	50	7915	8252	1557
4	Sonepur	20167	86378	2316	342	614	453	3012	7112	11303	88	90	4580	4465	1389
5	Tarbha	21952	89624	1919	657	1136	2094	4935	5036	8006	138	142	5145	5005	1205
6	Ullunda	23371	97697	2289	722	880	493	3419	7339	10052	73	64	4958	4842	1329
7	Sonepur (Mun)	6039	25896	669	54	669	1799	1570	1752	2102	13	10	911	847	352
8	Binka NAC	4744	19249	657	124	181	154	680	1311	1959	2	1	1072	1091	204
9	Tarbha NAC	1934	7234	153	45	303	417	826	510	843	26	21	416	402	87
	TOTAL	157095	680624	15735	3643	6177	7290	26252	48531	69662	618	558	35043	35084	8645

Details are in Table No 3.3 of Vol-II

CHAPTER- 4

MANAGEMENT OF FOREST FIRE

Forest fires usually occur during hot summer months when leaf shedding of deciduous forests occurs from February to June. Long dry spell with scanty rainfall is the most important factor which contributes Forest Fire. The occurrence of forest fire is recorded on beat jurisdiction basis. It is observed that forest fire is repeated in many places during a particular year due to continuous leaf fall in the forests. The intensity of forest fire depends on the quantum of dry leaves on the forest floor, wind flow in the fire affected area, etc. During the summer period, the atmospheric temperature increases making the forest floor more vulnerable because of dry leaves. Leaf shedding is a continuous process which makes field management difficult even though preliminary fire lines are maintained and adequate steps are taken for avoiding any fire occurrence. Despite efforts by the field staff, it is observed that forest fire is rampant in case of a dry spell of summer and gets aggravated if rainfall is poor in a particular year.

4.1 Name of the Division: Subarnapur Forest Division

Subarnapur Forest Division was created vide Govt. of Odisha Notification No.1F (A)-42/2008-17803/F&E Dt. 27.10.2009 consequent upon reorganization of Forest Circles/ Forest Divisions and started functioning from 1st January, 2010. Sonepur and Binka Ranges from Balangir East Division, Ullunda Range from Sambalpur South Division and Birmaharajpur Range from Rairakhol Division were carved out and came under administrative control of newly created Subarnapur Forest Division co-terminus with the Subarnapur Civil District. This Division lies between 20° 30' to 21° 10' North latitude and 83° 25' to 84° 16' in East longitude. The forest area of this district is 428.75 Sq. KM which constitutes about 18.15 % of the total area of the district.

4.2 Name of the Range:

This Division comprises of 4 Ranges, 15 Sections and 45 Beats. The Range wise distribution of beats is furnished below.

Table No: 4.1 Forest range

Sl. No.	Name of the Range	No. of Section	No. of Beat	No. of Forest Block	Geographical Area in Sq. KM	Forest Area in Sq. KM
1	Sonepur	4	17	18	723.9313	113.11651
2	Ullunda	4	11	7	672.6397	217.86361
3	Birmaharajpur	3	9	5	329.7759	63.38507
4	Binka	4	8	7	635.3349	37.49731
Total		15	45	37	2361.6819	431.8625

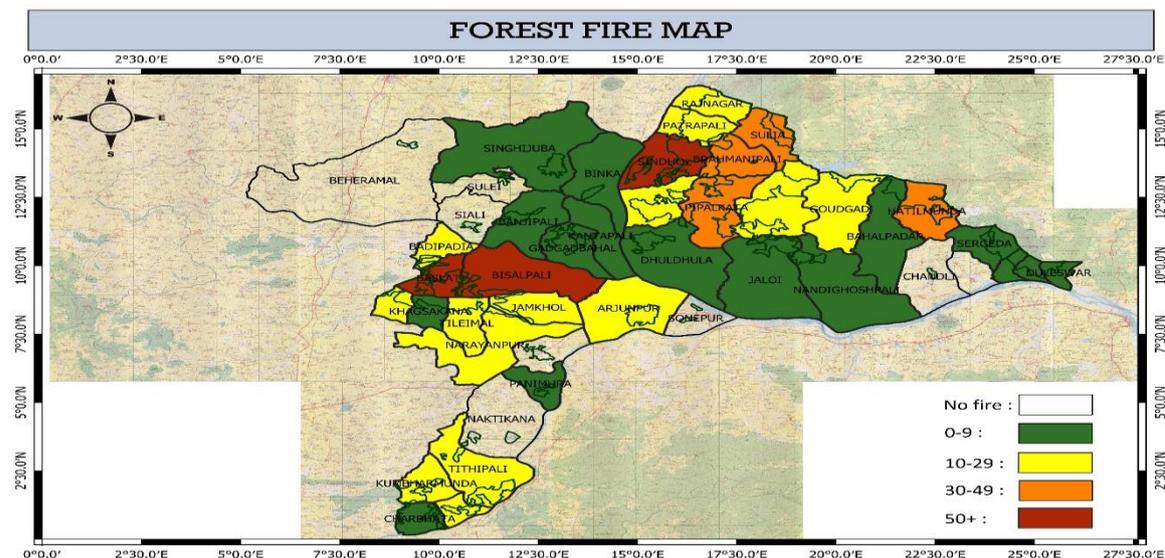
4.3. Total notified areas (area in Sq. KM) in the district.

Table No- 4.2 AREA CLASSIFICATION IN Sq. KMs

1	Reserved Forests (37 nos.)	391.94475 Sq. KMs
2	Proposed Reserved Forests (2 nos.)	4.82 Sq. KMs
3	Demarcated Forest (not notified)	NIL
4	Village Forests (Notified 15 nos.)	21.105 Sq. KMs
5	Un-demarcated Forests under the control of Revenue Deptt.	10.85495 Sq. KMs
6	Un-classed Forest	0.03 Sq. KMs
Total		428.7547 Sq. KMs

1	Geographical area of the Division in Sq. KM	2361.6819 Sq. KMs
2	Forest area in Sq. KM	428.7547 Sq. KMs
3	% of Forest area to total Geographical area	18.15 %

4.4 Zonation of Forest Area (Red, Orange, Yellow, Green and No Fire Zone)



4.5. No. of Villages and population inside different zones

Table No- 4.3

Sl. No.	Name of Division	Name of the Zone	No. of Villages Inside	Population of the Zone
1	Subarnapur Forest Division	Red Zone	23	9300
2		Orange Zone	25	8700
3		Yellow Zone	70	40000
4		Green Zone	55	32000
5		No Fire Zone	30	21000

4.6. Detail Action Plans for Management of Forest Fire in the District

A. PHYSICAL FORECAST

- i. Fire continues to be the major threat to forest regeneration and establishment. Fire Watcher system needs to be strengthened in the identified vulnerable areas. Depending upon requirement and availability of funds fire watchers will be provided to every Protection unit (each Range 1 unit: 10 persons x 4 Ranges = 40 persons for five fire sensitive months).
- ii. The VSS should be involved in containing forest fires. Incidence of annual fire should be entered in the compartment history. Fire prone areas should be identified and precautionary measures taken in time. Every year fire maps need to be prepared block wise. Fire protection incentive schemes may be developed (no forest fire zones are to be declared in national functions of District with provision of award @ 10000/- per VSS with felicitation certificate each year).
- iii. Annual fire line clearance of 1 to 2-chain width in fire sensitive areas, coupled with controlled burning shall be done under the personal supervision of the Forester/Range Officer. Moreover, old fire lines, forest roads, boundary lines, village ring shall be kept clean by taking up control burning in 1-chain strip on both sides of it (fire line creation over 1000 RKM every year with maintenance @ 10 man-days per RKM).
- iv. Modern firefighting methods should be adopted i.e. purchase and utilization of fire blowers, supply of firefighting equipment to squads, communication instruments, up-gradation of VHF towers of police, forest and fire department.
- v. Maintenance of control room 24x7 hourly responses for forest, fire department and police department.
- vi. Awareness on the damage caused by fire to be created amongst the people.

B. FINANCIAL FORECAST

Table No 4.4

SI No.	Item of works	Rate	Quantity	Amount
1	Engagement of fire squad (1 unit x 150 days @ 315 per day)	472500.00	4 unit	1890000.00
2	Engagement of vehicle (42000 x 5 months)	210000.00	4 nos.	840000.00
3	Purchase of blower	61000.00	20 nos.	1220000.00
4	Purchase of fuel for blower @ 2 ltrs per day for 150 days: 300 ltrs @ 85	25500.00	20 nos.	510000.00
5	Firefighting dress	4000.00	40 nos.	160000.00

6	Fire tools i.e. beater, helmets etc.	3750.00	40 nos.	150000.00
7	Fire camp expense	12500.00	4 nos.	50000.00
8	Communication equipment (walkie talkie)	20000.00	24 nos.	480000.00
9	Fire line creation & maintenance: 1000 RKM per year @ 10 man-days per RKM	3150.00	1000 RKM	3150000.00
10	Up-gradation of VHF tower	75000.00	4 nos.	300000.00
11	Incentive to 10 VSS having no fire zone	10000.00	10 nos.	100000.00
12	Awareness camp among the people & VSS	25000.00	8 nos.	200000.00
				9050000.00

4.7 Roles and responsibility of different Stakeholders.

4.7.1 Role of the Divisional Forest Officer (DFO):

The DFO has the following responsibilities.

- a. Organising Coordination meetings with District level fire officers, DFO Lendlease's, DM, OFDC and other concerned departments.
- b. Preparation of fire prevention & reclamation Plan and supervise the implementation of the approved plan.
- c. Action for filling of vacant positions in fire risk forest Beats & Sections before onset of fire season.
- d. Procurement of firefighting equipment and tools required for strengthening the base level.
- e. Notification of prohibited activities and display on conspicuous place for public as per section 3(2) of Orissa Forest (Fire Protection) Rules,1979.
- f. 24 X7 fire prevention control room at division headquarters in charge of an officer of Deputy Ranger/ Forester rank with staffs and equipment. Ensure Registration of official Mobile no with FSI website ([http:// www.fsi.org.in](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.
- g. Make Incentive provision for VSS & public informants.
- h. Monitor & review fire control operation on weekly basis in the Division.
- i. Ensure timely submission of fire occurrence report.

4.7.2 Role of the Range Officer

The Range Officer will be responsible for following works:

- i) Monitor and supervise the works like maintenance of fire line, selection of firefighting squads' members well in advance of the fire season.
- ii) Repair to forest roads, maintenance of boundary & compartment lines, select site to set up camps, construction of Machans and decide on firefighting squad members well in advance of fire season
- iii) 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.
- iv) Deploy staff and squad members on strategic points with specific duty and chalk out their movement to cover fire sensitive forest areas.
- v) 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.
- vi) Conduct enquiry into each fire affected forest area, assess the loss, verify the action taken by the staff to control fire and submit report
- vii) Recommend names of VSS, informants and squad members for incentives and awards.

4.7.3 Role of the Section Forester

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

- a. Prepare detail map showing fire prone area, route chart to those sites and available water sources
- b. 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.
- c. Organising VSS meetings on regular basis and encourage members to take appropriate steps for control of fire as a Convenor.
- d. Safe custody of firefighting equipment and kits from range office.
- e. 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.
- f. Arrange labour, hire of vehicle and provide logistic support to firefighting squads.
- g. 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.
- h. Keeping close contact with local Fire Service Station for information and technical guidance.
- i. Expeditious steps to initiate legal action against culprits with due procedure and adequate evidence.
- j. Ensure all equipment required for firefighting have been supplied to all Forest Guards, VSS members, firefighting squads and are in working condition.

4.7.4 Role of Beat Forest Guard

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

- i) Well acquainted with area, map, topography, routes and fire risk areas of his jurisdiction.
- ii) 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.
- iii) Receive messages from control room, range office, section forester and VSS on fire occurrence, record in log book / register.
- iv) Submit weekly report ensuring forest area not affected by fire due to his effort.
- v) Submit the area affected by forest fire on daily basis to Section Forester and Range Officer.
- vi) Make frequent night halts in interior pockets of his jurisdiction.

4.7.5 Role of NGOs and Voluntary Organizations:

The Forests of Subarnapur are supported with different Vana Surakshya Samiti and Eco-Development Committees who play a vital role in prevention and protection of forest fire. However, at the district level, few voluntary organizations / NGOs come forward to assist the field officials for prevention and protection of forest fire.

4.8 Preparedness before the onset of the fire season

- (a) i. 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.
- ii. 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.
- iii. Range Officer will ensure proper deployment of firefighting 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.
- iv. 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.
- v. Up-dation of Phone/ mobile nos. and email IDs of all Range officers, section foresters, beat guards, Firefighting 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.
- vi. Procurement and supply of Firefighting equipment, safety kits, communication devices, transportation and other logistic supports.

(b) The Divisional Forest Officer shall procure required quantity of firefighting equipment 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 equipment at the site and also ensure mock drills are conducted. After stock entry, required equipment 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) Equipment 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 mobiles would also be provided to the leader of each firefighting squad / VSS president and to the team leaders of the local youths for making quick communication without loss of time.

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

4.9 Preventive Measures:

Forest fires are usually seasonal. They usually start in the dry season and can be prevented by adequate precautions. Since old times, forest fire was prevented in the summer through removal of forest litter all along the forest. This was called "**Forest Fire line**". This line prevents fire breaking into the forest from one compartment to another. Hence in Odisha, fire lines are created in the vulnerable areas of the forest and plantations inside forests to save them from forest fires. Generally, the fire spreads only if there is continuous supply of fuel (Dry vegetation) along its path. The best way to control a forest fire is, therefore, to prevent it from spreading, which is done by creating Fire Breaks in the shape of small clearings or ditches in the forest.

4.10 Capacity Building Training:

Capacity building programmes are taken up from the Community to the highest level as routine schedule analysing the past experience to improve future programmes with modern technology. Equipment like the Air Blower has been adopted as a preventive measure to create and maintain fire lines. Also, as a protective measure, it is used to restrict the ongoing forest fire at a distance parallel to the forest fire by creating fire lines to counter the ongoing forest fire. Training to the field staff includes its use, risk involved, precaution to be taken etc. Modern gadgets like GPS PDA and Mobile App etc are used to strengthen further on,

monitoring mechanism, which is also included in the training programme. The following training programme is undertaken for combating forest fire in the state.

4.11 Mitigation Measures:

All the DFOs have been asked to make registration of the mobile phone numbers for fire alert along with the Range Officers so that a quick alert of FSI can be disseminated to field. The IT & GIS Cell of office of the PCCF, Odisha, Aranya Bhawan is facilitating the details of KMZ file relating to different divisions received from FSI to forest divisions with geo-coordinates upto Forest Block level for field inspection by ground staff. The field officials then take adequate measures for extinguishing the forest fire and report back to the higher authority.

4.12 Inter-departmental coordination

The involvement of other departments is very much required which depends on the gravity and extent of fire reported. Also, for the preventive measures on creating awareness among the people, it is required to co-ordinate with the Panchayat Raj, Revenue, Police, Fire Department and Health Department etc so that they will also be on alert during forest fire hazard.

4.13 Incident Response

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 fire squads and other support staff on the extent of damage is collected from divisions regularly for effective monitoring.

4.14 Range wise breakup of incidents of Forest Fire:

Table No-4.5

Name of Division	Name of Range	Year	Name of Section	No. of Fire Points	Area Affected (in Ha.)
Subarnapur Forest Division	Ullunda	2010 to 2023	Ullunda	152	38.434
			Jaloe	55	7.521
			Sindhol	389	46.821
			Kharapura	635	72.310
	Sonapur	2010 to 2023	Sonapur	241	39.567
			Narayanpur	315	69.911
			Lachhipur	188	62.341
			Kumbharmunda	448	68.310
	Binka	2010 to 2023	Binka	42	6.300
			Rampur	115	17.863
			Kaudiamunda	62	9.640
			Dunguripali	33	6.390
	Birmaharajpur	2010 to 2023	Subalaya	69	12.340
Hatilimunda			263	71.152	
Durdura			107	47.620	

CHAPTER – 5

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 nine may be nominated by him. The Chairperson may designate one of the members to be the Vice-Chairperson.

5.1.1 Function: -

- Lay down the policies on DM
- Approve the nation plan
- Lay down the guidelines to be followed by states and other govt. depts.
- Recommend provision of Funds
- Lay down the policy for the function of NIDM.
- Constitution of Advisory and Executive committee.

5.1.2 Meetings: -

The NDMA shall meet as & when necessary and at such time & place as the chairperson may think fit.

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 Chairperson (*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 chief of staffs are other members of NEC.

5.3 State Disaster Management Authority (SDMA)

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

The State Disaster Management Authority shall:-

- a) Lays down policies and plans for disaster management in 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.

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 Governments are the other member's ex-officio. The Chairperson of SEC use powers delegated by SDMAs and state Governments.

The State Executive Committee shall:-

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

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 exercises all administrative and financial powers with respect to disaster management.

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 Special Relief Organisation. The organisation is headed by Special Relief Commissioner.

5.7 Odisha State Disaster Management Authority (OSDMA):

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

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

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

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.

5.9 District Disaster Management Authority (DDMA)

Under the sub-section (1) of section 14 of DM act 2005. District Disaster Management Authority has been constituted by the State Government, Vide letter No 46310/R& DM dt 12.11.2010. 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 and 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*

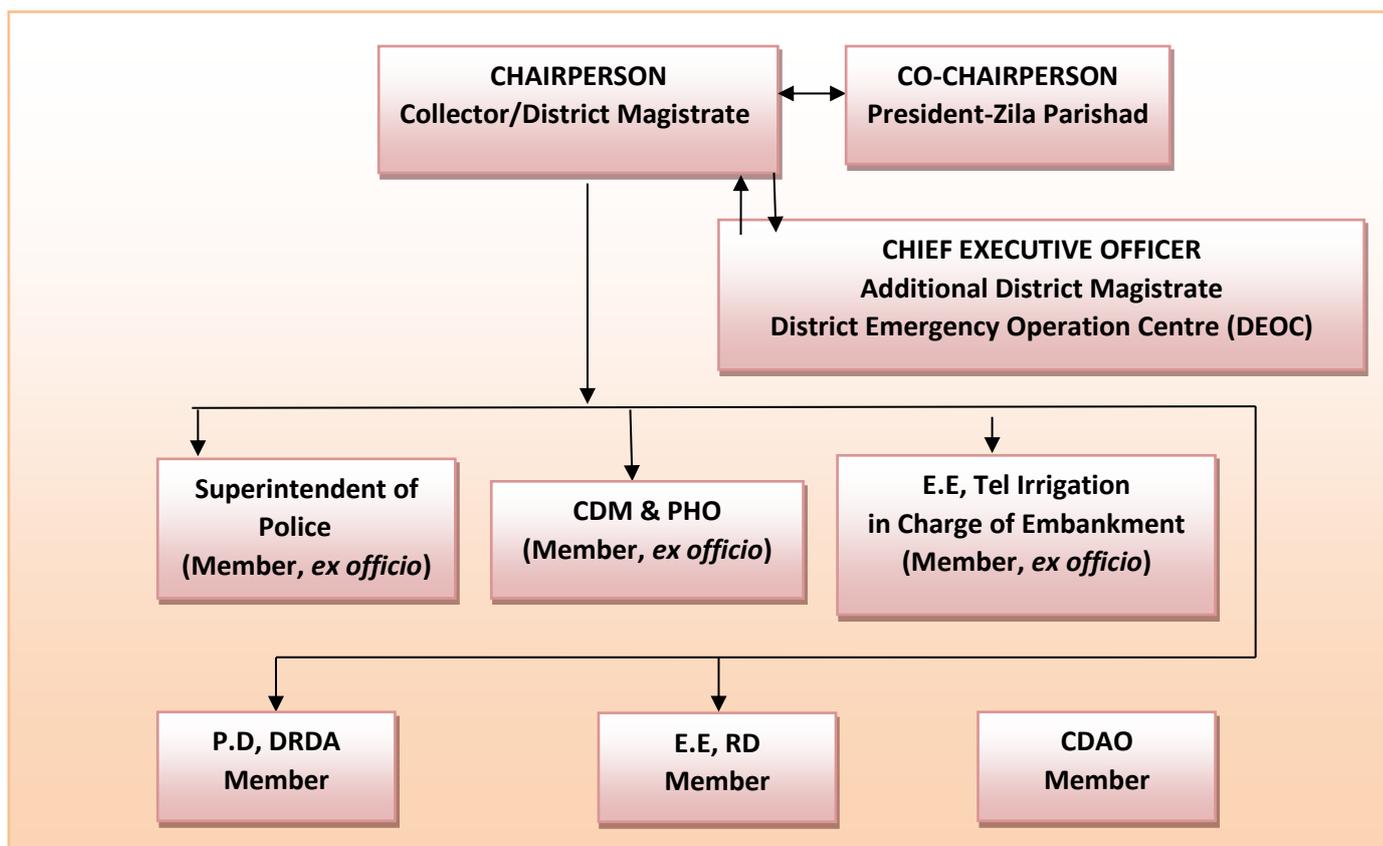
- c) The Chief Executive of the District Authority, *ex officio*;
- d) The Superintendent of Police, *ex officio*;
- e) The Chief Medical Officer of the district, *ex officio*;
- f) Not exceeding two other district level officers, to be appointed by the State Government

The State Government has appointed 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.

Table No- 5.1 **Current composition of DDMA structure**

SI No.	Name of the Officer	Designation	Position in DDMA	Contact No.
1	Ms. Anya Das	Collector, Subarnapur	Chairperson- Ex-officio	7077010311
2	Smt. Supara Thela	Chairperson ZP, Subarnapur	Co-Chairperson- Ex-officio	8984135080
3	Sri Rajendra Majhi	Addl. District Magistrate, Subarnapur	CEO- Ex-officio	8917414637
4	Sri Yashpratap Shrimal	Superintendent of Police, Subarnapur	Member- Ex-officio	9438916580 7977194081
5	Sri Aswini Kumar Meher	CDO-cum-EO, ZP Subarnapur	Member Ex-officio	9437420164 9348505865
6	Dr Durgadutta Dash	I/c CDM&PHO, Subarnapur	Member- Ex-officio	9439987555
7	Sri Jitendra Ku Padhi	EE, Tel Irrigation, I/c of Embankment	Member	9439766768
8	Sri Nareen Kumar Reddy	EE, RD. Deptt.	Member	9437255334
9	Sri Bibhuti Bhusan Mishra	I/c CDAO, Subarnapur	Member	9937981009

Figure-5.1-Organogram of District Disaster Management Authority



5.10 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 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 statutory functions of District Disaster Management Authority (DDMA) are to:
- 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 & local level.

- d) Ensure that guidelines for Prevention and Mitigation measures, Preparedness and Response as lay down by NDMA and SDMA are being followed by all departments of Government both at district and local level.
- e) Monitor the implementation of Disaster Management Plans prepared by the departments of the Government at the district levels.
- f) Lay down guidelines to be followed by different Government departments both at district level and local level for integrating disaster prevention and mitigation measures in their development plans and projects and provides necessary technical assistance therefor;
- g) Review the state of capability for responding to any disaster or threatening disaster like situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation.
- h) Review the preparedness measures and give directions to the concerned departments at the district level for bringing the preparedness measures to the levels required for responding effectively to any disaster.
- i) Organize, coordinate and facilitate specialized training programmes and awareness programs 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.

5.11 District Level Committee on Natural Calamity (DLCNC)

The provision of Odisha Relief Code in APPENDIX-III Paragraph-(Rule)-19 (i) (b) envisages the constitution of District Level Committee on Natural Calamity (DLCNC) which is the apex committee at the district to review preparedness and advice on precautionary works and suggests future relief works.

A meeting of the District Level Committee on Natural Calamities shall be convened by the end of May and another in November every year. The members of DLCNC are as follows:

Table No 5.2: Structure of District Level Committee on Natural Calamity

Sl No	Name of the Member	Designation	Position in DLCNC	Contact No.
1	Ms. Anya Das	District Magistrate & Collector	Chairperson	7077010311
2	Smt. Sangita Singh Deo	Hon'ble MP, Bolangir	Member	
3	Sri Niranjan Pujari	Hon'ble MLA Sonapur	Member	8144131302
4	Sri Raghunath Jagdala	Hon'ble MLA, Birmaharajpur	Member	9439277271 7609005687
5	Dr Durgadutta Dash	CDM&PHO, Subarnapur	Member	9439987555
6	Dr Paramananda Sethy	CDVO, Subarnapur	Member	9437074571
7	Sri Jitendra ku Padhi	EE, Embankment	Member	9439766768
8	Sri Suraj Kumar Pattnaik	Sub-Collector, Sonapur	Member	9437326278
9	Sri Lalatendu Si	Sub-collector, Birmaharajpur	Member	7978381990
10	Miss Subhashree Rath	District Emergency Officer, Subarnapur	Member Secretary	8249800031
11	Sri Ananga Negi	Gen. SEC, RARE (NGO)	Member	9937618884
<i>All District level officers, BDOs, Tahasildars and PRI members may be invited to participate in the DLCNC meeting.</i>				

The Natural Calamity Committee sits twice a year, i.e., in the end of May to check the level preparedness for flood like situations and in November to review the crop condition. During the Natural Calamity Committee meeting all district level offices of all the Line Departments, BDOs and Tahasildars of the district may be invited by the chairman.

Various line departments have been exercising their responsibility. District control room comprised off officers of different depts. has the vital responsibility for crisis management. Officers from Police, Revenue, Health, Irrigation, RD/ R&B, RWSS, Animal Husbandry, Electric department and the NGOs are the lead role player of the CMG.

The main focus topics of DLCNC

- Preparation of Heat wave/flood contingency plan of all line Departments.
- Functioning of Control Room
- Rain Recording and timely reporting
- Joint verification of weak embankments and repairing of the same
- Status of flood shelters
- Functioning of telephone lines
- Cleaning of drainage to avoid water logging
- Stock piling of medicines and dry foods at inaccessible pockets
- Steps taken for mitigation of different disaster
- Health measures
- Veterinary measures
- Deputation of higher officials at the flood circles
- Coordination among the offices
- Cooperation of NGOs
- Deployment of NDRF / ODRAF Teams

Table No- 5.3 Department wise role & responsibility (Heat wave).

Sl No	Item	Department/Agency	Responsibilities
1	Dissemination of Heat Wave Warning	I.M.D/ SRC/ SEOC/ OSDMA	<ul style="list-style-type: none"> • Supply of weather Report & Warning on heat wave.
		DEOC/ District Administration	<ul style="list-style-type: none"> • Dissemination of warning message to Block level/ all the departmental control rooms/DIPRO. • Be updated/ take action accordingly with respect to warning issued by IMD
		DIPRO	<ul style="list-style-type: none"> • Wide dissemination of warning among public
2	Functioning of departmental control rooms	District (DEOC) Tahsil/ Block/ CDM&PHO / CDVO/ RWSS/ PHD	<ul style="list-style-type: none"> • Functioning of control room round the clock from 1st March. • Vigilant & watch full about weather report. • Keep people informed & alert. • Prompt action on reporting of an incident. • Coordinate with subordinate offices.
3	Transmission of Temperature & rainfall records	Observer & Dy. Observer (weather report) at Collectorate	<ul style="list-style-type: none"> • Transmit the daily maximum and minimum temperature, wind speed, rainfall information to IMD/SRC in time. • Take care for the proper maintenance & functioning of Control Room.

		Observer (Block Level)	<ul style="list-style-type: none"> • Transmit the daily rainfall information to SRC in time under intimation to the District Emergency Control room.
4	Awareness creation and wide display & distribution of IEC materials	CDM&PHO/ CDVO/NGO	<ul style="list-style-type: none"> • CDM&PHO should supply the IEC materials i.e. posters on heat wave safety tips, leaflets like Do's & Don't s. • CDM&PHO should conduct a training for the medical & paramedical staffs for the treatment of the heat wave affected patients. • CDVO should also prepare posters & leaflets on the safety tips for animals. • NGOs may help for dissemination & distribution of the safety tips. • CDM&PHO, CDVO & NGO personnel may create awareness to tackle heat wave situation during summer.
		W&CD Dept	<ul style="list-style-type: none"> • Educate young girls and mothers regarding the dangers of Heat Waves, its related health impacts and the precautionary measures to be taken. • Display IEC materials at Anganwadies and encourage integrated child development scheme (ICDS) workers to disseminate Heat Wave related information with special focus on infants, children below five years, pregnant and lactating mothers, and geriatric population to protect them from dehydration.
5	Medical Arrangement:	CDM&PHO	<ul style="list-style-type: none"> • Arrangement should be made to keep a room/ward earmarked for treatment of heat stroke patient. • Air coolers, fans, generators & freezer may be kept ready. • Sufficient quantity of ice/ice pack and saline has to be mobilized and stored. • Ambulance should be kept ready. • Mobile Health Units should be kept equipped and in readiness. • Essential medicines, ORS packets, Saline and other lifesaving drugs should be supplied to all health centres, PHCs etc and AWCs sufficiently in advance. • Sensitization of staffs dealing with treatment of heat stress victimised patients.
			CDVO
6	Veterinary measures	CDVO	<ul style="list-style-type: none"> • Awareness generation through print media & distribution of leaflets on "Do's and Don'ts" to alert the public to take care of domestic animals. • Adequate essential medicines should be stocked at all veterinary dispensaries and hospitals.

			<ul style="list-style-type: none"> • Immediate treatment of animals affected by Sun stroke. • Arrangement of water vats for drinking purpose of stray cattle.
7	Drinking Water Supply Arrangement	PHED & RWSS	<ul style="list-style-type: none"> • Ensure all the pipe water projects and tube wells are functional. • Immediate repair of damaged pipe water supply system & stand posts. • Identify of water scarcity area.
		RWSS & BDO	<ul style="list-style-type: none"> • Identify and repair of defunct tube wells on war footing manner before onset of summer. • Constitution of mobile technical teams for repairing of tube wells. • Maintenance of complaint registers & attends the complaint immediately.
		Executive Officer/ BDO/RWSS/PHED	<ul style="list-style-type: none"> • Supply of drinking water at places of public congregation like bus stand, market places etc. • Supply of drinking water through tanker to the water scarcity villages/wards.
		E.O, BDO, DSWO/ NGO/ Volunteers	<ul style="list-style-type: none"> • Opening of “Jalachhatra” at places of public gatherings • Temporary rest sheds on road side along the NH and SH.
		Forest & Environment Dept	<ul style="list-style-type: none"> • Assess the availability of water for animals in reserved/protected forests and make necessary provision where needed to take care of animals during peak summer. • Drinking water must be provided through tanker to human habitations facing water scarcity inside reserved forests. • Arrangement of water vats for the drinking purpose of animals & birds in the forest.
		W & CD Dept	<ul style="list-style-type: none"> • Provision of drinking water and first aid at all the <i>Anganwadi Centres</i>, old age homes, orphanages.
		DEO /DWO/ DPC	<ul style="list-style-type: none"> • Arrangement of drinking water in all school
8	Rescheduling of timing in educational institutions	District Education Officer/ DPC, SSA/ DWO	<ul style="list-style-type: none"> • To reschedule the timing in the educational institutions under their jurisdiction. • Examinations are to be conducted between 6.30 AM to 10.30 AM and all examinations in schools should be over by April. • Special arrangement for drinking water and first-aid in all educational institutions.

9	Rescheduling of working hour for labourers/ workmen	Labour Officer/ E.E. R& B Division/ E.E., RW Division/ E.Os/BDOs	<ul style="list-style-type: none"> • Issue a direction to the implementing agencies, executants of public works and private employers for rescheduling the working hours to avoid exposure of labourers/ workmen from 1st April. • Ensure no work should be executed during the peak hours from 11.00 AM to 3.30 PM. • Ensure adequate arrangement for drinking water, ORS packets and rest shed at work site • Ensure arrangement for children to take rest at worksite.
10	Rescheduling of bus timing and movie shows	R.T.O	<ul style="list-style-type: none"> • Reschedule the bus timing in consultation with private Bus Owner's Association to prevent travelling during intense hours of heat i.e. 11.00 A.M. to 3.00 P.M. • Ensure provision of potable water and ORS packets have been made available in public transport vehicles. • Restrict the transportation of labours or passengers through open vehicles like truck/pick up van etc.
11	Joint Verification & Weekly Reporting	Revenue Deptt./Tahasildar	<ul style="list-style-type: none"> • If any reports regarding alleged sun-stroke casualties published in different newspapers and news/information received from other sources, Tahasildar should conduct enquiry jointly with CDM&PHO. • Reports should be submitted to this office through special messenger within 36(thirty-six) hours of the reported death/causalities • The Tahasildars should submit the weekly status report on alleged sun-stroke death in the prescribed format by saturday of every week. • Even if no death due to sunstroke is reported in their area, a NIL report should be submitted to this office by the stipulated day.
		CDM &PHO	<ul style="list-style-type: none"> • The CDM&PHO should issue suitable instruction to all Medical Officers/ Doctors to co-operate with the Revenue authorities in conducting the joint enquiry of the alleged sunstroke death so that the veracity of death will be reported to Govt. in time. • If any sunstroke affected patient dies while under treatment in the medical institution CDM & PHO should instruct the treating Physicians to issue specific report (post-mortem) to proper quarter under

			intimation to this office for finalization of the cases.
12	Uninterrupted power supply & telephone service	E.E, TPWODL/ AEE, Telecom (BSNL)	<ul style="list-style-type: none"> •Ensure uninterrupted power supply during summer months. •Ensure uninterrupted telephone service to all control rooms. •Immediate repair of lines to make the control room telephone functional. •Complaints regarding power supply issues immediately are attended. •Accessories or instruments should be kept stocked for any immediate repair
13	Fire safety	Fire Station Officer	<ul style="list-style-type: none"> •Fire Brigades must be alert always and keep the firefighting instruments ready. •If any house burning message received, must be attended immediately •Fire fighting for extinguishing fire •Rescue operation
		DFO	<ul style="list-style-type: none"> •Must watchful for any incidence of forest fire •Arrangement of water tanker.

Table No 5.4 Department wise role & responsibility (Flood).

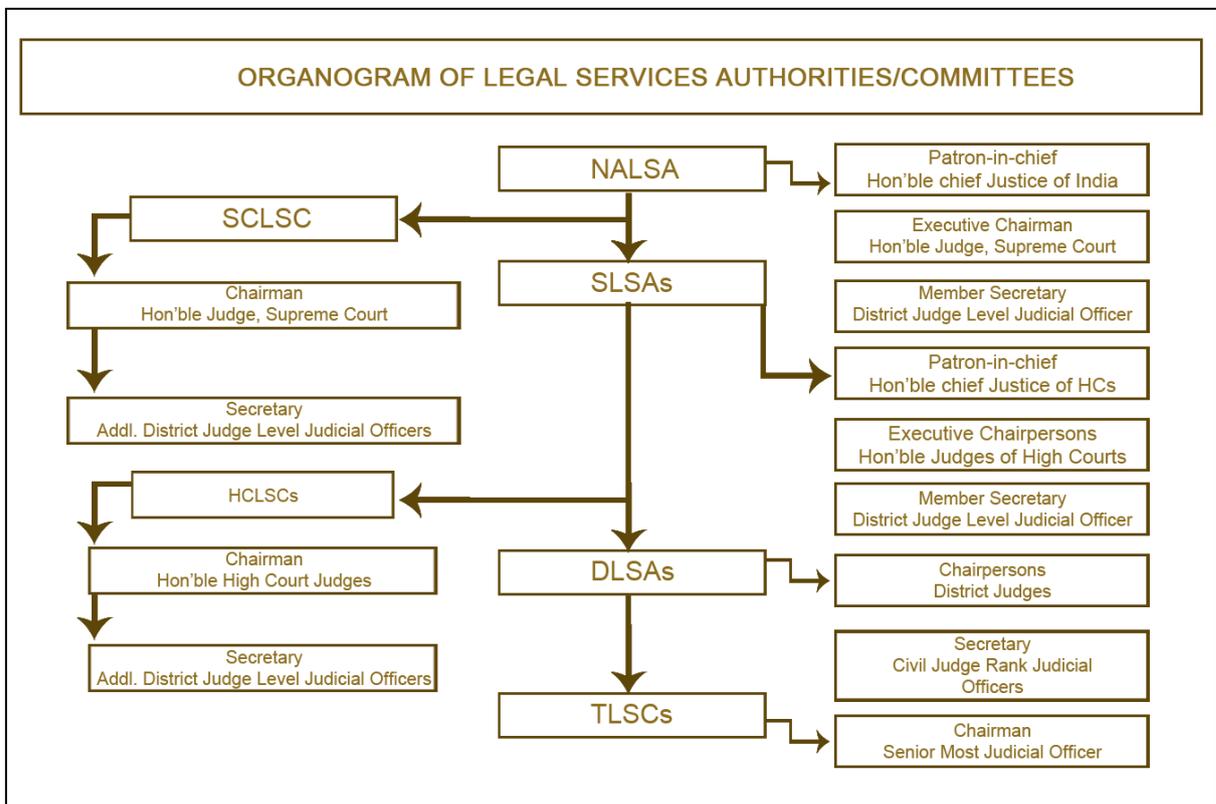
Sl No:	Departments / Offices	Responsibility
1	SRC/OSDMA/S EOC/ Flood Control Room	Supply of information on flood water discharge
2	DEOC/District Administration	<p>Operation of Control Room round the clock</p> <p>Dissemination of any warning to the lower quarter & control rooms at block level</p> <p>Coordination meeting with District level officers & NGOs</p> <p>Organization of flood circles</p> <p>Preparedness for evacuation & relief operation if require</p>
3	DIPRO	Dissemination of information to the general public through miking.
4	Superintendent of Police	<p>Maintenance of law & order</p> <p>Ensure VHF communication system is functional</p> <p>Help in evacuation & search and rescue</p> <p>Provide escort to the relief vehicles</p> <p>Crowd management</p>

5	Chief District Medical Officer	Awareness generation through print media & distribution of leaflets on "Do's and Don'ts" to alert the public Control Room operation Stock piling of Medicines at different PHCs & CHCs Positioning of Staff at all the health centres. Provision of Halogen tabs, ORS etc. with the health workers Provision of mobile health service in the remote & inaccessible areas.
6	Chief District Veterinary Officer	Awareness generation through print media & distribution of leaflets on "Do's and Don'ts" to alert the public to take care of domestic animals. Function of control room stock of the Cattle feed available Sock of medicine & vaccines at all centres make indent to procure if required
7	Civil Supplies officer	Identification of mills for necessary Rice / Chuda Procurement Stock piling of Rice, Chuda, K.oil at inaccessible points Arrangements of candles & matchbox make indent to procure if required
8	Chief District Agriculture Officer	Preparation of flood contingency plan Flood resistance seed procurement and distribution Alternative cropping mechanism
9	Executive Engineer, Irrigation	Stock piling of flood fighting materials like bamboo & sand bags Identification of weak embankments and engaging the officials for close watch
10	Executive Engineer, RWSS	Provision of safe drinking water at vulnerable rural pockets Repair, Maintenance and installation of tube wells Disinfection of tube wells
11	Executive Engineer, PHED	Provision of safe drinking water at vulnerable urban pockets
12	Executive Engineer, R&B	Identification of vulnerable roads in vulnerable pockets Immediate restoration of cut off roads
13	Executive Engineer, WESCO	Immediate restoration of power supply in case of destruction
14	Block Development Officers	Control Room operation Identification of vulnerable pockets Ready for evacuation of people to safe shelters & provide temporary shelter Constitution of relief party Arrangement of free kitchen Supply of drinking water Distribution of relief materials Coordination with District Administration & reporting
15	Tahasildars	Control Room operation Assist BDO for evacuation & relief distribution Assessment of damages, Joint verification & reporting

16	Fire Officer	Road clearance Clearance of debris Evacuation, Search & Rescue
17	RTO	Traffic control Crowd management Arrangement of vehicles for transportation of relief materials

5.13 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. 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.



5.14 Odisha State Legal Services Authority (SLSA):

Odisha State Legal Services Authority is a Statutory Body established under the Legal Services Authorities Act, 1987. Hon'ble Chief Justice of High Court of Odisha is the Patron-in-Chief of the Odisha Legal Services Authority and the Sr. Judge of the High Court of Orissa is the Executive Chairman of the Odisha Legal Services Authority. To look after the legal services pertaining to the High Court, there is High Court Legal Services Committee, which is chaired by a sitting Judge of the High Court and the Registrar (Judicial), Orissa High Court is functioning as the Secretary of High Court Legal Services Committee.

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

5.15 District Legal Service Authority: -

The intervention of Legal Services Authorities should be for coordinating the integrated, strategic and sustainable development measures taken by the government and Disaster management Authorities for reducing the period of crises and for building a platform for early recovery and development. The thrust of the efforts for by the State Legal Services Authorities shall be for strengthening the capacity of the victims for managing the disaster at all levels and to coordinate with the Government departments and non-governmental organizations and also for providing legal aid to the victims.

5.15.1 COMPOSITION OF DISTRICT LEGAL AID AND ADVICE COMMITTEE

Table No-5.5 DLSA composition

Sl No	Designation	Name	Contact No	Position in the committee
1	District & Sessions Judge	Sri Rashmi Mohan Acharya	06654-220493	Chairman
2	DM & Collector	Ms Anya Das	7077010311	Vice-Chairman
3	District Government Pleader	Sri Byomkesh Dash	8249523563	Member
4	Public Prosecutor of the District	Sri Kanheilal Pradhan		Member
5	Two representatives of the District Bar Association	Sri Indramani Dash Sri Narayan Prasad Raiguru		Member
6	One person representing Women to	-	-	Member (Not Nominated)

	be nominated by the State Government			
7	One person representing Scheduled Castes and Scheduled Tribes to be nominated by the State Government	-	-	Member (Not Nominated)
8	One person engaged in Social Work to be nominated by the State Government:	-	-	Member (Not Nominated)

5.15. 2 COMPOSITION OF TALUK LEGAL AID AND ADVICE COMMITTEE

- | | | |
|----|---|---------------|
| 1. | Senior Most Judicial Officer at the Tahasil Headquarters: | Chairman |
| 2. | The Sub-Collector: | Vice-Chairman |
| 3. | The S.D.P.O: | Member |

5.16 National Disaster Response Force (NDRF)

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

Table No- 5.6: Location of National Disaster Response Force

Sl No	Battalion, Location	State	Man power drawn from	Contact Person	Contact No.
3	03 Bn, NDRF, Munduli	Odisha	CISF	Sri Jacob Kispotta, Commandant	09439103170 09437964571 0671-2879711 09437581614

5.17 Odisha Disaster Rapid Action Force (ODRAF)

The Government of Odisha formed Odisha Disaster Rapid Action Force (ODRAF) vide notification No.939/CD dated 07.06.2001. ODRAF is a multi-disciplinary, multi-skilled, high-tech force for all types of disasters. ODRAF aims at

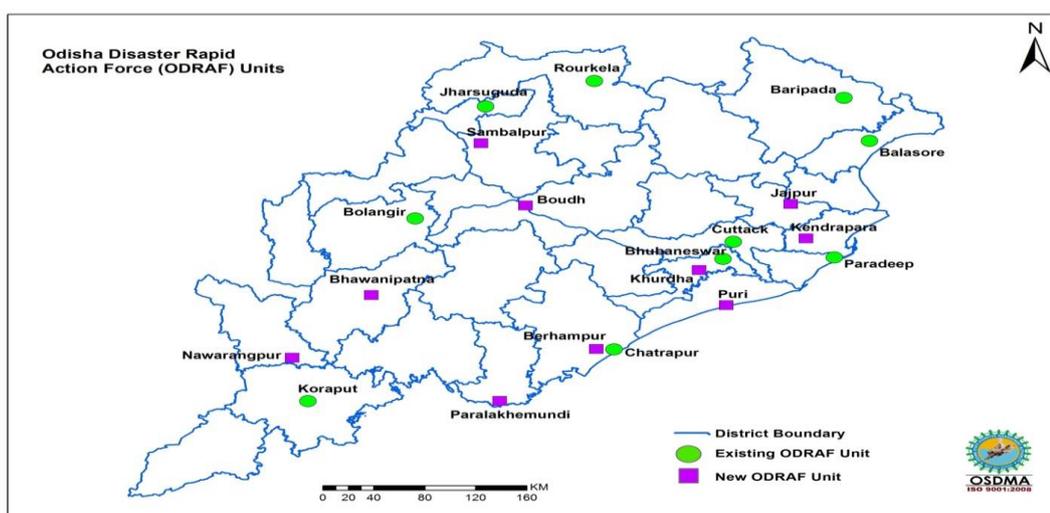
reducing casualties, clearance of communication channels, quick deployment of personnel and equipment and minimize expenditure and time lag and support institutional arrangement. Twenty units of ODRAF have been set up. The ODRAF units are strategically located throughout Orissa. Locations of these units are identified on the basis of vulnerability profile to cut down the response time for their deployment. The ODRAF Units do not have any geographical /territorial restrictions in terms of area of operation.

Table No 5.7 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 spbbs.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,spjps.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	Ph: 0661 -2600980 (O)- 2600434 (R) Fax: 0661 -2600980 comdt4thbn.odpol@nic.in
11	IR Battalion, Boudh	2015-2016	Boudh	43	Phone: 06841-222238 7684872156 (M) 9437232275 (M) 9437109404 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) comdt8thsplirbn.odpol@nic .in
17	6th IR Battalion, Khurda	2015- 2016	Khurdha	50	8895856633 (M) comdt6thirbn.odpol@nic.in
18	1st IR Battalion, Upper Kolab, Koraput	2015- 2016	Koraput	43	Phone: 06852-252167 (O) 06852-211320 (CR) comdt1stfirbn.odpol@nic.in
19	7th Special IR Battalion, Upper Kolab, Koraput	2015- 2016	Koraput	44	Phone: 06852-251067(O): 06852-229007 (CR) comdt7thsplirbn.odpol@nic .in
20	2nd IR Battalion, Rayagada, Gunupur	2015- 2016	Rayagada	48	Phone: 0658-725110 (O), Fax: 0685- 725110 (CR),comdt2ndirbn.odpol@ nic.in

Map_5.1_: Location of ODRAF Units



5.18 Other Disaster Response Teams in the district

Table No 5.8 Other Disaster Response Teams

Sl No.	Name of the Institutions	Name of the Chief Coordinator of the Organization	Designation	Contact Number	Alternate Contact Number	Number of Volunteers
1	Civil Defence	-	-	-	-	Not Available
2	Reserve Police	Sri Saroj Kumar Behera	Reserve Police Inspector (R.O)	8847887267		90

4	Home Guards	Sri Kanhu Charan Marandi	Reserve Police Inspector (HG)	9439092744	8327714121	283
5	National Service Scheme (NSS)	Sri Dharendra Ku. Nayak,	Lecturer	9937802575		80
6	National Cadet Corps (NCC)	Laxman Bhoi	DEO	9439394820		150
7	Nehru Yuva Kendra (NYK)	Prabir Padhan	District Coordinator	9438402497		12
8	Red Cross	Sri Satya Narayan Hota	VC, DRCB	9438203387		29

5.19 NGOs volunteers

Table No- 5.9 NGOs functioning in this district

Sl No	Name of the NGO	Address	Name of Sec/ President	Contact No
1	RARE-Research Academy for Rural Enrichment	AT/Po-Sonepur	Ananga Negi	9937618884
2	NRDC- National Rural Development Council	AT/Po- Sonepur	Pradip ku Mahapatra	9437151893
3	SNJK-Subarna Nari Jagaran kendra	At/Po- Sonepur	Manjula Mishra	9437330010
4	NRDC- National Rural Development Cooperation	At/Po-Tarbha	Hemanta Ku Mohanty	9437195974
5	AYESA- Association of Youth for Economic & Social Advancement	At/Po- Sonepur	Kamalkanta Sa	9437330102
6	PRAYAS-Progressive Rurally Active Youth Association for Society	At/Po- Kamsara Tarbha	Bhabani Shankar Panda	9437933002
7	ANJANA	At-Telenda Po-Pancmahala Ullunda	Debakinandan Mishra	9437707406
8	SEAWA- Society for Environment & Agriculture Welfare Action	At-Nuagaon Po-Hikudi Ullunda	Pabitra Mohan Negi	9437240911
9	Magadheswar Club	At/Po- Ullunda	Sri Santanu Karna	9937788159
10	JJJS-Juba Jyoti Jubak Sangha	At- Gokarneswar para Sonepur	Jaya Singh	9438530830
11	JAWARD	Birmaharajpur	Sri Laba Meher	9938789272
12	Global green	Sonepur	Sri Sambit Nanda	9437428922
13	Anchalika Jana Seba Anusthan	Birmaharajpur		9937924994
14	SIKHA	Nandanmal, Sonepur	Sri Baladev Bishi	9438530429
15	Yuba MahaSangh	Ullunda	Mahesh Purohit	7750967879
16	AWAZ	Dunguripali	Dharmendra Biswal	7978946623
17	Binka Sports Club	Binka	Somanath Mishra	9937219060
18	Gramothan	Sonepur	Aswini Ku Satpathy	8600469606
19	H2O	Binka	Srujan Ku Panda	9937074267
20	SSIYA	Khandahata Birmaharajpur	Dillip Padhan	7894554030

5.20 List of Helipads/Mounds

List of fields for Helicopter Landing in Subarnapur District

Table No- 5.10 Helipads/Mounds

SINo	Name of Block	Place
1	Birmaharajpur	Birmaharajpur Mini Stadium
2	Dunguripali	Dunguripali College Field
3	Sonepur	Royal Field, Gandhi Stadium & Rameswar Indoor Stadium, Sonepur Municipality
4	Binka	Siali Padia Helipad
5	Binka	Binka Sishu mandir field

5.21 Multipurpose Flood Shelters (MFS) in the district

Table No- 5.11 Multipurpose Flood Shelters

Sl	Name of the FS	Location	Name of President	Contact No.	Name of Secretary	Contact No.
1	Sonepur W. No -12	Near Circuit House	Manoranjan Panda, E.O Sonepur (M)	9938720555	Gangadhar Taria	8114801567
2	Sonepur W. No -01	Near SP Res Office	-do-	9938720555	Susanta Bag	9777476372
3	Mundoghat	Near Dharmasala H.School	Keshan Jagdala	9178846608	Sibaprasad Padhan	9777207789 7008662411
4	Binka NAC	Near Siddhartha College	Satyanarayan Pradhan. EO Binka NAC	9178854689	Manoj ku Das	9937655582 9348731310
5	Digisira	Digisira	Koushalya Meher	9937485450	Satyanarayan Meher	8018962186
6	Tikirapada, Subalaya	Tikirapada, Subalaya	Pramod ku Mohapatra	9937477453	Chakradhar Padhan	8018237375 9827136927

5.22 Details of equipment provided to Multipurpose Flood Shelters

OSDMA has provided the following equal nos. of equipment to six MFSs of this district.

Item	Quantity	Item	Quantity	Item	Quantity
Lifebuoy	05Nos.	Wheel Chair	02 Nos	Dari	02 Nos
Life Jacket	05Nos.	Steel Almirah	01 No	Tarpaulin	02 Nos
Florescent Jacket	50Nos.	Steel Rack	01 No	Karnamental Rope	02 Nos
Safety Shoes	10pair	GI Trunk	01 No	Nylon Rope	02 Nos
Hand Gloves	10pair	Plastic Chair	10 Nos	Notice Board	01 No
Safety Helmet	10 Nos	Handhold Tools	01 set	Free kitchen utensil	01 set
Rain Suit	10 set	Solar Lantern	02 Nos	Chain Saw	02 Nos
Foldable Stretcher	02 Nos	Siren (Electrical)	01 No	Inflatable Tower Light	02 Nos
First Aid Box	01 box	Radio	01 No	Telescopic Tower Light	01 No
Search light	01 No	Water Filter	04 Nos		
Fire Extinguisher CO2 4.5 Kg	01 No	Handhold Megaphone	01 No	Wall supported extension ladder	01 No

5.23 Other identified Safe temporary shelters in the district

Table NO-5.13

SI 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	Sonepur	Haradakhol	Baidyanath	Baidyanath Govt.Primary School/ Flood Shelter	RCC	4	2	1	
		Chhakormal	Davlong	Davlong UP School	RCC	8	4	1	
			Balpur	Balpur UP School	RCC	5	1	1	
		Kalapathar	Panisiali	Panisiali Pry.School	RCC/ Asbestos	2	2	1	
			Sardhapali	Sardhapali UP.School	RCC	4	4	2	
			Nandanmal (Chasagoth)	Bhoipali Pry.School	RCC	2	4	1	
		Lachhipur	Lachhipur	G.P.Higher Secondary School, Lachhipur	RCC	5	2	0	
				Bhursapali UP.School	RCC/ Asbestos	4	2	1	
2	Dunguripli	Beheramal	Beheramal	Beheramal High school	Pucca (cement concrete)	3	2	Yes	1125 sqft
		Sukha	Sukha	Sukha UP school	Pucca (cement concrete)	5	4	Yes	1274sq ft
		Sukha	Kendutikra	School Building	RCC		Yes	Yes	
		Digsira	Digsira	HighSchool Building	RCC	--	Yes	Yes	
		Digsira	Digsira	UPSchool Building	RCC	--	Yes	Yes	
3	Tarbha	Charbhata	Basasankar	Primary School, Basasankar	Pucca	3	1	Yes	2000 Sq.F
		Charbhata	Sukhilasar	Primary School, Sukhilasar	Pucca	2	2	Yes	1800 Sq.F
		Balikhamar	Karlamuhan	High School, Karlamuhan	Pucca	5	2	Yes	1/2 acer
		Balikhamar	Sindhoh	Primary School Sindhoh	Pucca	5	2	Yes	2500 Sq.F
		Singhari	Junani	Primary School, Rengasa	Pucca	3	0	Yes	3000Sq .F
		Singhari	Jadapal	Community Hall, Jadapal	Pucca	1	0		2000Sq .F
		Singhari	Chirabahal	Primary School, Chirabahal	Pucca	2	0		1000Sq .F
		Singhari	Badtenda	Primary School, Balipata	Pucca	5	1	Yes	2000 Sq.F

		Singhari	Jharbadjore	Primary School, Jharbadjore	Pucca	3	1	Yes	1500 Sq.F
		Singhari	Balipata	Primary School, Balipata	Pucca	5	1	Yes	2000 Sq.F
		Kamsara	Kayapadar	Primary School, Kayapadar	Pucca	2	1	Yes	1000 Sq.F
		Brahmani	Brahmani	UP School, Brahmani	Pucca	5	2	Yes	6000 Sq.Ft
		Brahmani	Bhurad	Primary School, Bhurad	Pucca	3	1	Yes	3000 Sq.F
		Brahmani	Bahiramuhan	Primary School, Bahiramuhan	Pucca	2	1	Yes	2500 Sq.F
		Maradugochha	Maradugochha	High School, Maradugochha	Pucca	7	2	Yes	4 Acar
		Katapali	Bijapadar	UP School, Bijapadar	Pucca	6	2	Yes	1/2 acer
		Katapali	Satrupali	Primary School, Satrupali	Pucca	2	2	Yes	8000 Sq.Ft
		Sibtula	Rambhasindhol	Primary School, Rambhasindhol	Pucca	6	2	Yes	1 acar
		Sibtula	Rambhasindhol	Primary School, Rambhasindhol	Pucca	6	2	Yes	1 acar
		Sibtula	Ghatakaintara	Club & SHG Building	Pucca	2	0	Yes	4000 Sq.Ft
		Deulpadar	Deulpadar	Nodal UP School, Deulpadar	Pucca	6	2	Yes	10000 Sq.Ft
		Menda	Menda	Primary School (Gadvitar), Menda	Pucca	2	1	Yes	1000 Sq.F
				Menda College	Pucca	5	2	Yes	
		Tulunda	Tulunda	UP School, Tulunda	Pucca	4	2	Yes	3000 Sq.F
		Tulunda	Narda	Primary School, Narda	Pucca	3	1	Yes	2000 Sq.F
		Tulunda	Nadhara	Primary School, Nadhara	Pucca	3	1	Yes	2000 Sq.F
4	Binka	Sindurpur	Sindurpur	S G H S, Sindurpur	Rc Roof	8	4	Yes	1200Sq ft
		Sindurpur	Ganeshpur	Ganeshpur UP.School	Pucca (Cement Concrete)	4	2	Yes	800sqft
		Sindurpur	Bishalpali	Bishalpali UPS			2	Yes	Single Storied
		Sindurpur	Balaranga	Balaranga PS			2	Yes	Single Storied

		Seledi	Seledi	K.G.B.V Seledi	Pucca (Cement Concrete)	8	6	Yes	1600sq ft
		Seledi	seledi	Seledi Nodal UPS			2	Yes	Single storied
		Seledi	Tundupali	Tundupali PS			2	Yes	Single storied
		Mahadevpali	Kartang	Kartang High School	Pucca (Cement Concrete)	7	8	Yes	1260sq ft
		Mahadevpali	Ghodadhar	Ghodadhar UPS	Pucca (Cement Concrete)	4	5	Yes	800sqft
		Bausuni	Bausuni UPS	Bausuni UPS	RCC		2	Yes	Single
		Kaintara	Kaintara	Kaintara UPS	RCC		2	Yes	Single
		Bankighiridi	Kukudajholi	Kukudajholi UPS	RCC		2	Yes	Single
		Mahada	Choukamal	Choukamal PS	RCC		2	Yes	Single
		Jullunda	Amamunda	Amamunda UPS	RCC		2	Yes	Single
		Babupali	Talmunda	Talmunda UPS	RCC		2	Yes	Single
		Sankara	Kaudiamunda	Kaudiamunda UPS	RCC		2	Yes	Single
		Silati	Silati	Silati PS	RCC		2	Yes	Single
		Singhijuba	Singijuba	Singhijuba UPS	RCC		2	Yes	Single
		Bhandar	Antarda	Antarda UPS	RCC		2	Yes	Single
		Charada	Phulmuthi	Phulmuthi UPS	RCC		2	Yes	Single
		Meghla	Meghla	Meghala UGHS	RCC		4	Yes	Single
5	Birmahar ajpur	Uffula	Khambeswar pali	Khambeswar pali PS	Rc Roof	6	Yes		
				OAV Rathapur	RCC	32	Yes		
				Ufula High Schoo	RCC	4	2	Yes	1200 sqft
				Tangarsahi Pry.School	RCC	8	2	Yes	2000 sqft
		Bagbar	Bagbar	Bagbar HS	RCC	5	5	Yes	2000 sqft
				Womens College	RCC	8	4	Yes	3000 sqft
			Kendupali	UGME Kendupali	RCC	14	5	Yes	5000 sqft
		Jatesingha	Jatesingha	Jatesingha HS	RCC	4	5	Yes	1500 sqft
		Subalaya	Subalaya	Subalay Degree College	RCC	8	8	Yes	6500 sqft
				Subalaya Boys HS	RCC	6	4	Yes	3000 sqft
				Subalaya Girls HS	RCC	6	4	Yes	3000 sqft
				Subalaya Junior College	RCC	4	4	Yes	4000 sqft

				Subalaya Primary School	RCC	5	3	YES	900 sqft
			Tikirapada	Tikirapada MFS	RCC	4	7	Yes	2200 sqft
		Pitamahul	Pitamahul	Pitamahul UGHS	RCC	6	4	Yes	2000 sqft
				Pitamahul ME School	RCC	5	3	Yes	1500 sqft
			Duleswar	Duleswar UPS	RCC	5	Yes		
				Duleswar HS	RCC	6	Yes		
			Kamira	Kamira High School	RCC	5	3	Yes	1500 sqft
				Kamira ME School	RCC	4	2	Yes	1200 sqft
6	Ullunda	Sindhol	Sindhol	Anchalika Mohavidyalaya	RCC	7	4	no	
		Mundo ghat	Dharmasala	Dharmasala HS	RCC	6	Yes	Yes	
				Dharmasala College	RCC	6	Yes	No	
			Hikudi	Hikudi PS	RCC	3	Yes	Yes	
		Bishipada	Badhila	Baqdhila UPS	RCC	3	Yes	Yes	
			Khajuriapali	Bishipada HS	RCC	5	Yes	Yes	
		Nimna	Dasharajpur Pandiaphal	Dasharajpur UPS	RCC	5	Yes	Yes	
			Dashrajpur Pandafal	Dasharajpur UPS	RCC	5	Yes	Yes	
			Nimna	Nimna PHS	RCC	5	Yes	Yes	
				Nimna Govt UPS	RCC	5	Yes	Yes	
		Panchmahala	Panchmahala	Ganeswar HS Panchmahala	RCC	8	4/4	Yes	
				Panchmahala Nodal UPS	RCC	4	Yes	Yes	
			Didimal	Didimal UPS	RCC	5	Yes	Yes	
		Mahada	Apatnuagarh	Apatnuagarh PS	RCC	4	Yes	Yes	
			Bhudobar	Bhudobar PS	RCC	3	Yes	Yes	
		Sindhol	Sindhol	Anchalik Mahavidyalaya	RCC	7	4/4	No	
		Chadei pank	Chadeipank	Chadeipank HS,	RCC	4	4/4	Yes	
			Jharbahali	OAV Jharbahali		36	yes		
		S.Patrapali	Keutipali	Keutipali High Schol	pucca	03	2/2	Yes	
7	BINKA NAC	ULB	Ward No 06	BINKA HIGH SCHOOL	RCC	10	2	1	

8	Sonepur Municipality		Ward No 12	MFS building near panthasala	Concrete	02(Hall)	M-02 F-02	Yes	100/100mtr
			Ward No 1	MFS near S.P. Res.	Concrete	02(Hall)	M-02 F-02	Yes	100/100mtr
				Block School U.P.	Concrete	02	M-02 F-02	Yes	100/100mtr
			Ward No 2/3/4	Adarsha School	Concrete	02	M-02 F-02	Yes	80/80mtr
			Ward No 5	Govt. Girls High School	Concrete	10	M-02 F-02	Yes	200/200mtr
			Ward No 6	Town School U.P.	Concrete	02	M-02 F-02	Yes	20/20mtr.
				Gundicha Mandir mandap	Concrete	01(Hall)	No	Yes	30/30mtr.
			Ward No 7/8/9/ 10/11	Town Hall	Concrete	01(Hall)	M-01 F-01	No	100/100mtr
			Ward No 12	Badbazar School U.P.	Concrete	04	M-02 F-02	Yes	200/200mtr
				Sureswari UPSchool	Concrete	02	M-02 F-02	Yes	50/50mtr.
			Ward No 13	Bhagawati Pathagar	Concrete	02	M-02 F-02	Yes	100/100
			Ward No 14	Chandra Sekhar Temple Mandap	Concrete	01 (Hall)	No	Yes	20/20mtr
			Ward No 15	Khambeswari community center	Concrete	01 (Hall)	M-01 F-01	Yes	50/50mtr
9	NAC Tarbha	ULB	Ward No 2	Marwadi Dharmasala	Concrete	6	6	Yes	5000 sqft
				Govt. Girls H. School	Concrete	6	4	Yes	6000 sqft
			Ward No 3	Dataram Dharmasala	Concrete	4	4	Yes	4000 sqft
			Ward No 6	Govt. Boys High School	Concrete	10	8	Yes	6000 sqft
			Ward No 1	Govt. Girls Primary School	Concrete	4	2	Yes	3000 sqft

5.24 Large open spaces for camp.

Table No- 5.14 Large open spaces

Sl. No.	Block Name	GP Name	No. of Mounts
1	Sonepur	Sonepur MPL	Royal Field, Sonepur Municipality
2	Sonepur	Sonepur MPL	Gandhi Stadium & Rameswar stadium, Sonepur
3	Birmaharajpur	Champamal	Birmaharajpur Mini stadium
4	Dunguripali	Dunguripali	Dunguripali College Field
5	Binka	Binka NAC	Binka Sishu mandir field

5.25 Storage Facility / Safe Places

During flood season food stuffs such as Chuda, Rice and kerosene oil are stored in advance in the vulnerable pockets of this district. GP go downs are the storage place for the above said relief materials.

5.26 List of Govt powerboats

Table No-5.17 List of Govt power boats supplied by SRC, Odisha kept under the disposal of different Govt Offices

Sl. No	Name of the Block	Name & Address of the Boat owner	Type of Boat	Size/ Capacity of the boat	Name of the river system	Location of the Boat
1	Sonepur	Sub-Collector, Sonepur	SOB-7	12 persons	Mahanadi	Tentulighat, Sonepur
2	Birmaharajpur	BDO, Birmaharajpur Block	AL-22	10 persons	Mahanadi	Birmaharajpur
3	Binka	BDO, Binka Block	AL-21	10 persons	Mahanadi	Binka
4	Ullunda	BDO, Ullunda Block	AL-23	12 persons	Mahanadi	Ullunda
5	Tarbha	BDO, Tarbha Block	AL-24	10 persons	River Tel	Tarbha

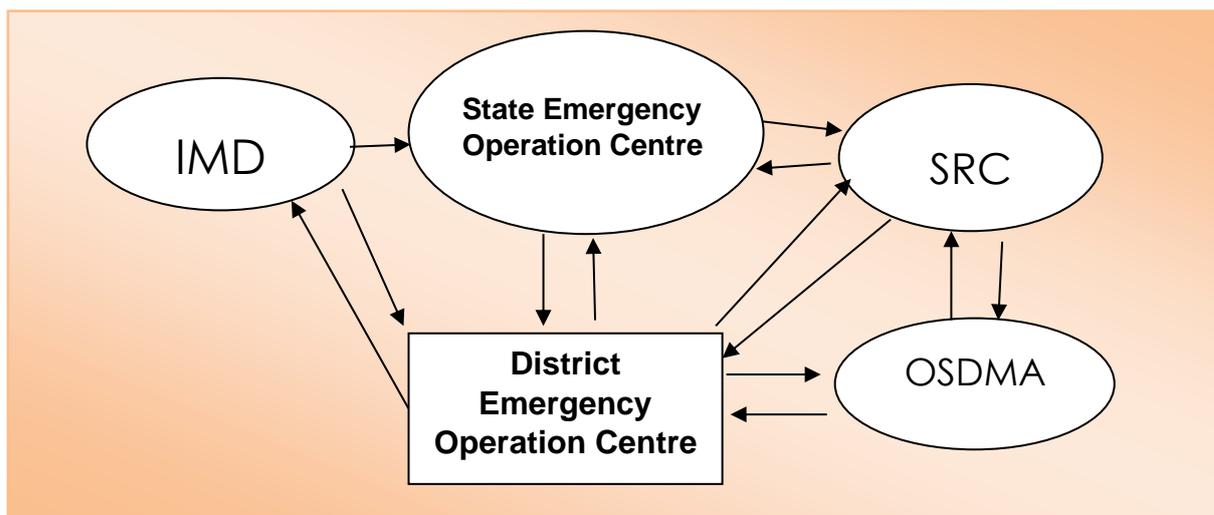
The list of country boat has been annexed in Vol-II as annexure-7.

5.27 Emergency Communication System- ICS

5.27.1 State Emergency Operation Centre (SEOC)

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

Figure 5. 2 Information flow Chart from SEOC to Districts



5.27.2 District Emergency Operation Centre (DEOC)

LOCATION: COLLECTORATE, SUBARNAPUR

TEL: 06654- 291374 & 1077 (Toll free)

Structure of DEOC:

District Emergency Operation Centre plays a vital role in the Emergency Operation activation. As per the Government of India national framework for disaster management, the districts are being assisted to set up control rooms/emergency operations centres (EOC) district level. The DEOC Subarnapur has been set up & running under the administrative and supervisory control of the District Magistrate & Collector, Subarnapur. The other officers/members who take active part in functioning of DEOC are

1. Addl. District Magistrate, Subarnapur
2. District Emergency Officer, Subarnapur
3. Jr. Revenue Assistant-1, Emergency Section, Subarnapur
4. Jr. Revenue Assistant-2, Emergency Section, Subarnapur
5. District Project Officer, OSDMA
6. Data Entry Operator, Emergency Section, Subarnapur
7. Other Officers & staff of different offices of this district.

Function of DEOC:

During disaster the DEOC functions round the clock & facilitate the response. It is a centre for decision-making and help flow of information horizontally and vertically to the respected departments for smoother relief operations. Emergency Operation Centre monitors different disaster mitigation programme and co-ordinates with different organization. It also conducts evaluation of the programmes, and immediately takes up necessary measures. After disaster it focuses on recover, restoration & rehabilitation. Generally, DEOC work continuously on preparedness, prevention and mitigation activities.

1. Collecting information about the vulnerable areas.
2. Sharing data related to disaster and vulnerable areas with all the line departments and other organization and stakeholders.
3. Carrying out assessment of damage in disaster prone areas.
4. Coordination for preparation, mitigation and response with all the responsible parties.
5. Receive and process disaster alerts and warnings from nodal agencies and other sources and communicate the same to all designated authorities and stakeholders.
6. Monitor emergency operations.
7. Facilitate coordination among Departments/Agencies.
8. Requisitioning additional resources during the disaster phase.
9. Consolidate, analysis, and disseminate of damage, loss and needs assessment data.
10. Policy-making and planning.
11. Information gathering and record keeping on disaster events.
12. Public information and communication (IEC) on DM.
13. Early warning dissemination.
14. Resource management.

Table No 5.20 Equipment provided to DEOC and their operational status

SI No.	Equipments	Unit	Status		Remarks
			Operational	Non-Operational	
1	Desktop Computer	4	Yes		
2	Laser Printer	1	Yes		
3	UPS	2		Yes	Damaged
4	Scanner, Printer, Xerox (3 in1)	1	yes		
5	Fax	2	Yes (1No)	Yes (1No)	Damaged
6	Multi Utility Machine (Printer, Scanner, Fax,)	2	Yes (1No)	Yes (1No)	1 No damaged by supply of high voltage
7	Laptop	1	Yes		
8	GPS Unit	0			1 unit returned to OSDMA
9	Satellite Phone	1	yes		Kept under PA to Collector
10	Portable Diesel Generator	1		Yes	damaged
11	Inverter with Battery	2 inverters with 4 Batteries	1 inverter & 2 batteries	1 inverter & 2 batteries	1 No damaged due to supply of high voltage
12	Inflatable Tower Light	2	Yes		Supplied to Sub collector, SNP & Tdr- Binka
13	Power Saw	-			Supplied to Tahasil Sonapur & Binka 1no each
14	Life Jacket	-			5 Nos supplied to Tahasil Offices
15	Life Buoy	-			do
16	Aluminum Ladder	1		yes	
17	Fire Extinguisher	2		yes	
18	Siren	1	Yes		
19	Megaphone	1	Yes		
20	Colour TV/Stand	1		Yes	Damaged
21	Mobile Phone	1	Yes		
22	Computer Table/Chair	2	yes		
23	Book Case	1	Yes		
24	GI Trunk	1	yes		
25	Commando Search Light	1	yes		
26	Steel Almirah	4	Yes		
27	Camera	1	yes		

Figure 5.3: Information flow chart from District Emergency Operation Centre (DEOC) to Villages with early warning

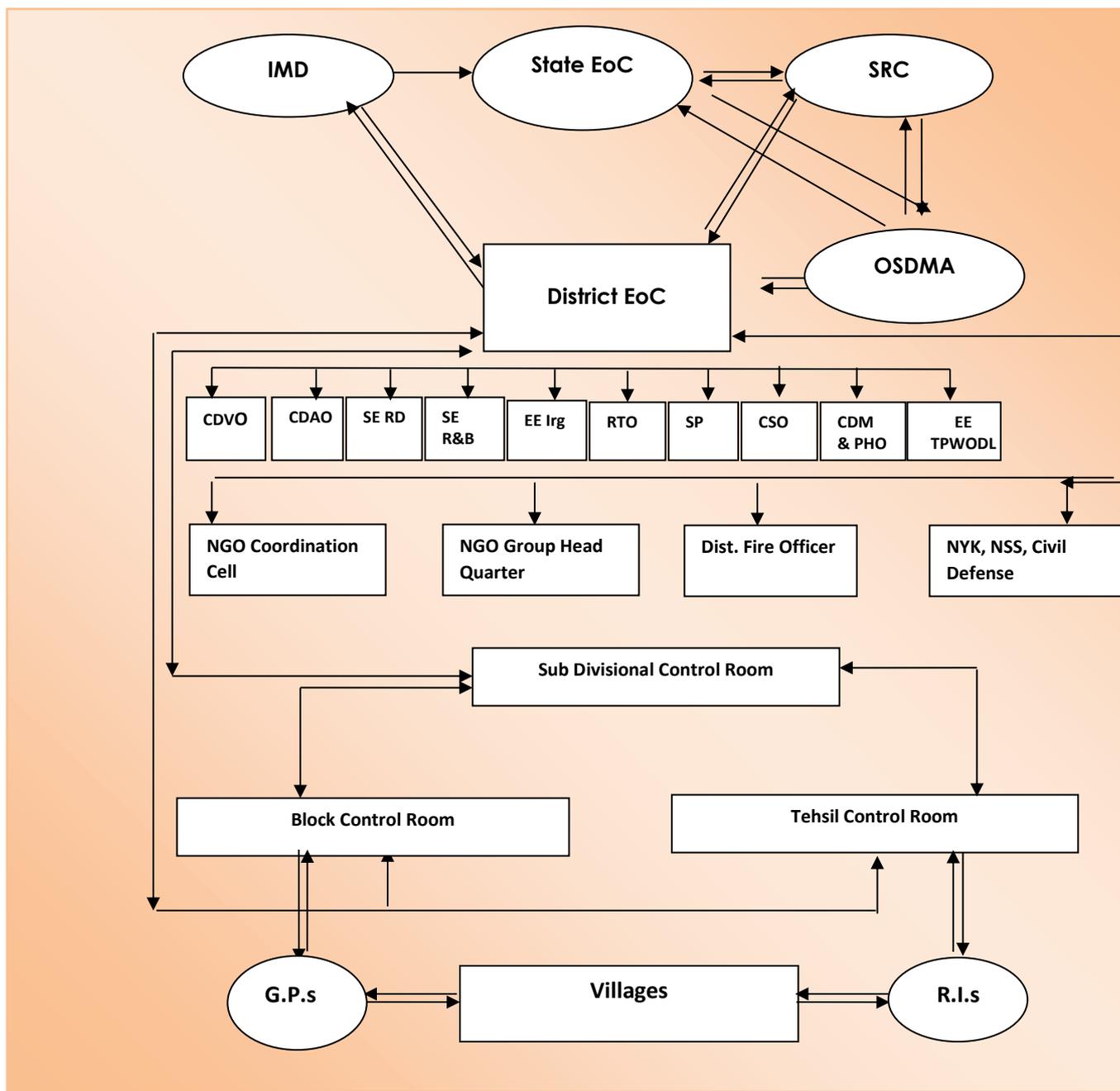
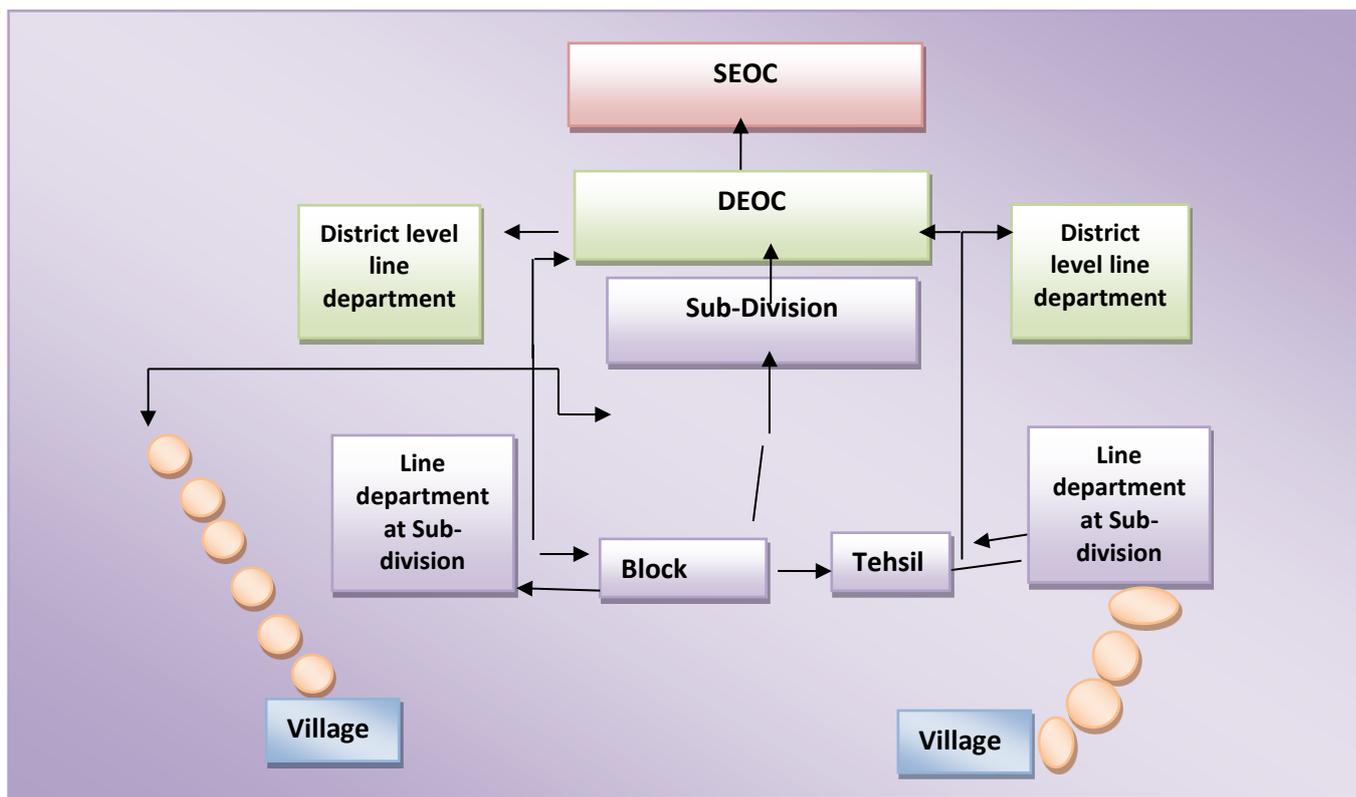


Table No- 5.21 Important Departments at the District.

SI No.	Department	Head of the Department at District/ Block	Name of the Nodal Officer	Contact No.
1	Police	Superintendent of Police	Sri Yaspratap Shrimal	9438916580
2	Health	CDM&PHO I/c	Dr. Durgadutta Dash	9439987555
3	Animal Husbandry	CDVO	Dr Paramananda Sethy	9437074571
4	Irrigation, Embankment (Tel Irrigation)	Executive Engineer	Sri Jitendra Ku Padhi	9439766768
5	Irrigation-Canal	Supertending Engineer	Sri Madan Mohan Sethi	9437529912
6	Irrigation –Minor	Executive Engineer	Er. Arun Ku Jotirmaya	9438733071

7	OLIC	Executive Engineer	Sri Prafulla Behera	7978793912
8	Rural Development	Superintending Engineer	Er. B. Nareen Kumar Reddy	9437255334
9	Road & Buildings	Superintending Engineer	Sri Damodar Kaibarta	9437158500
10	TPWODL	Executive Engineer	Sri Ashok ku Mishra	9437061869
11	RWS & S	Superintending Engineer	Sri Tapan Padhan	9437451674
12	PHD	Asst. Executive Engineer	Sri A. Kumar Murty	9438253015
13	Agriculture	CDAO	Sri Bibhuti Bhusan Mishra	9937981009
14	Horticulture	ADH, Sonapur	Sri Hrushikesh Dash	9437284257
15	Fishery	Dist Fisheries Officer	Sri Prasanna Patnaik	7978945590
16	Forest & Environment	DFO	Sri Madanlal Sharma	9437039132
17	Civil Supply	CSO	Sri Suresh Panigrahi	9438200059
18	Transport	RTO	Sri Akshaya Ku Jena	6370936718
19	Fire Service	Asst. Fire Officer	Sri Dhanjaya Mallik	9438061659
20	W & CD	DSWO	Ms Anupama Panda	9937219899
21	DIC	Gen. Manager	Sri Bipin Ku Dehury	9348831355
22	Textile	Dy. Director	Sri Binayak Prusty	9437560750
23	Education	DEO	Sri Laxman Bhoi	9439394820
24	Labour	DLO	Sri Dileswar Khaka	7681872900
25	Employment	DEO	Smt. Sanju Sahu	9853288456
26	Telecom	SDO	Sri Jitendranath Mishra	9437961379
27	Dist. Information	DIPRO	Sri Aswin Ku Bhoi	9938347678
28	Soil conservation & WS	PD, Watershed	Sri Debaraj Das	8249460440
29	OAIC	DM, OAIC	Sri Ramyaranjan Mishra	8249078736
30	Welfare	DWO	Sri Achyutananda Singh	9348544779

Figure 5.4: Information flow chart from Villages to District Emergency Operation Centre (DEOC) without early warning



5.27.3 Block Emergency Operation Centre (BEOC)

As per the standing instruction of Dist. Administration the Control rooms at Block Office shall operate from the month of April and continued up-to November. Control room operates from April & May for Heat wave condition whereas from June to November for Flood like situation. The staff assigned for the control room duty to look after the situation and report compliance if required. Similarly control room operates in Tahasil offices too. There is no institutional arrangement for BEOC at the block level, only control room and report return done by the existing staff of the Blocks.

- | | | |
|-----------------------|---|--------------------------|
| 1. BDO, Binka | - | 06654-291643 |
| 2. BDO, Birmaharajpur | - | 06651-254236 |
| 3. BDO, Dunguripali | - | 9438337303 |
| 4. BDO, Sonapur | - | 7008102693 |
| 5. BDO, Tarbha | - | 06654-286036, 7848825004 |
| 6. BDO, Ulunda | - | 06651-243501 |

Similar to the District Control room, at subordinate offices, control rooms are also formed at Sub-division, Tahasil and Block levels which will be supervised by the Zone Officer during emergency periods. The procedures lay down for these control rooms are as follows:

- Control Rooms are managed by a clerk/Revenue Supervisor/Extension officer and a peon.

- Immediately after getting warning about flood/cyclone, one Gazetted Officer along with the above staff may be deployed in the control room.
- The Head of office will ensure proper working of the control room telephones.
- A register will be maintained in the control room to record the messages and warning received over telephones and action taken thereon.
- The Sub-ordinate Control Rooms will keep constant touch with the District Control Room during and after occurrence of any calamity
- In case any message of devastating nature is received, this should immediately be passed on to Collector/Addl. Dist. Magistrate/concerned Sub-Collector or District Control Room and necessary action will be taken according to their instructions.

Table No- 5.22 Important Line Departments at the Block

SI No.	Department	Head of the Department at Block	Name of the Nodal Officer	Contact No.
1	Revenue	Tahasildar, Sonapur	Ms. Soumaya Roopa Rath	8763968082
		Tdr, Birmaharajpur	Ms. Poonam Mahapatara	8144966763
		Tahasildar, Binka	Sri Sitaram Bhoi	9938668935
		Tahasildar, Rampur	Sri Bimal Patra	9938420638
		Tahasildar, Tarbha,	Sri Tula Muduli	9439760722
		Tahasildar.Ullunda	Sri Prasanta Ku Maharana	9654658969 6370840960
2	Panchatiraj	BDO, Sonapur	Sri Soumya Ranjan Swain	8093613741
		BDO, Tarbha	Sri Anil Kumar Kullu	8456878263
		BDO, Birmaharajpur	Ms. Priyadarshini Mirdha	9776016761
		BDO, Dunguripali	Sri Bipin Bihari Deep	9078563058
		BDO, Binka	Sri Pramod Ch. Meher	9437541254
		BDO.Ullunda	Ms Karishma Besra	9777068336
3	Health	MO SDH, Birmaharajpur	Dr. Rabindranath Panda	7894019279
		MO, CHC Binka	Dr.Satyanarayan Panigrahi	9777141918
		MO, CHC Dunguripali	Dr. kiran prabha Dungdung	9437339577
		MO, CHC, Ullunda	Dr Mukesh Ku Meher	9777429049
		MO CHC Tarbha	Dr kshirod ku Mishra	9437119494
		Mo CHC Naikenpali	Dr. Ramsankar Tripathy	9692632321
4	Agriculture	CDAO Sonapur	Sri Bibhuti Bhusan Mishra	9937981009
		BAO, Sonapur	Pranatirani Pradhan	8117840191
		BAO, Tarbha	Smt. Sushreesmita Panda	8018557220
		BAO, Binka	Sri Jyotiranjana Pradhan	7894955224
		BAO, Dunguripali	Sri Chandiprasad Mahalik	9439415317
		BAO, Ullunda	Sri Rashmikiranjan Tappo	7008643673
		BAO, BMPur	Sri Makardwaj Patel	9937127282

5.27.4 Any other Alternative Emergency Operation Centre in the district

At district level, the District Emergency Operation Centre in the collectorate premises is functioning round the clock. The Subdivisional level, & other departmental emergency operation centres are also functioning. Emergency operation centres at both Sub Collector office, CDM&PHO office under Health dept, CDVO office under Animal Husbandry dept, RWS & S dept, Dept of PHD, Irrigation dept under Water Resource dept, RD/RW dept, R & B dept, DDA office under Agriculture dept and all the ULBs under H & UD dept are functioning round the clock to tackle the hazardous situation in Subarnapur district.

1. Sub-Collector office, Sonapur 06654-220231
2. Sub-Collector office, Birmaharajpur 06651-254234

3. CDM&PHO, Subarnapur	7846850553
4. CDVO, Subarnapur	9437613786
5. S.E., RWSS, Subarnapur	8280408249, 1996(toll free)
6. A.E., PHED, Sonapur	06654-291325,18003456783 (toll free)
7. CDAO, Subarnapur	06654-220216
8. E.E., RW Division, Subarnapur	06654-221436
9. A.E., R & B, Sonapur	06654-220257
10. EE, Tel Irrigation, Sonapur	06654-295185
11. Executive Officer, Sonpur(M)	06654-220475
12. Executive Officer, Binka (NAC)	06654-283270
13. Executive Officer, Tarbha (NAC)	06654-246015

Function: -

- Control Rooms are managed by a clerk/Extension officer and a peon.
- Immediately after getting warning about flood/cyclone, one Officer along with the above staff may be deployed in the control room.
- The Head of office will ensure proper working of the control room telephones.
- A register will be maintained in the control room to record the messages and warning received over telephones and action taken thereon.
- The Sub-ordinate Control Rooms will keep constant touch with the District Control Room during and after occurrence of any calamity
- In case any message of devastating nature is received, this should immediately be passed on to Collector/Addl. Dist. Magistrate/concerned Sub-Collector or District Control Room and necessary action will be taken according to their instructions.

5.28 State Crisis Group (SCG)

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

- The State Crisis Group shall meet at least once in three months and follow such procedure for transaction of business as it deems fit.
- 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.

5.28.1 Composition of the State Crisis Group

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

Table No 5.23 Composition of State Crisis Group

Sl	Members	Designation
1.	Chief Secretary, Odisha	Chairman
2.	D,C-cum-A.C.S & Chairman, SPCB	Member
3..	Secretary to Government, Labour & ESI Department	Member Secretary
4.	Secretary to Government, Home Department	Member

5.	Secretary to Government, Forest & Environment Department	Member
6.	Secretary to Government, Health & FW Department	Member
7.	Secretary to Government, Industries Department	Member
8.	Secretary to Government, H&UD Department (PH Engineering)	Member
9.	Special Relief Commissioner, Odisha	Member
10.	Secretary to Government, Transport Department	Member
11.	Labour Commissioner	Member
12.	D.G. Police, Odisha	Member
13.	D.G. of Police, Fire Services	Member
14.	Director of Factories and Boilers	Member
15.	Head, NDRF, Odisha, Bhubaneswar	Member
16.	Head, Tata Steel Ltd. Kalinga Nagar	Member
17.	Head (safety), IOCL, Paradeep	Member
18.	Prof. G.K. Roy, Ex-Director and HOD (Chemical Engg.), NIT, Rourkela	Member
19.	Director, RLI, (Directorate General of Factory Advice Kolkata, Gol	Member
20.	Regional Director, Mines Safety (DGMS, Bhubaneswar, Gol	Member

5.28.2 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.

5.29 District Crisis Group

As prescribed in the chemical accidents (emergency planning, preparedness, and response) rules, 1996, the District Crisis Group has to be constituted. The District Crisis Group is the apex body in the district to deal with major chemical accidents and to provide expert guidance for handling chemical accidents. Without prejudice to the functions specified under sub-rule (1). the District Crisis Group shall-

1. Assist in the preparation of the district off-site emergency plan
2. Assist the district administration in the management of chemical accident
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.

5.29.1 Composition of the District Crisis Group

Table No: 5.24

SI No	Member	Designation
1	Ms. Anya Das, IAS, DM & Collector, Subarnapur	Chair Person
2	Sri Yashpratap Shrimal, Superintendent of Police, Subarnapur	Member
3	Sri Rabindranath Kanhar, ADM, Subarnapur	Member
4	Sri Suraj Kumar Patnaik, Sub-Collector, Sonapur	Member
5	Sri Lalatendu Si, Sub-Collector, Birmaharajpur	Member
6	Miss. Subhashree Rath, Dist. Emergency Officer, Subarnapur	Member
7	Sri Krushna Mohan Singha, Revenue Officer, Collectorate	Member
8	Sri Dileswar Khaka, District Labour Officer, Subarnapur	Member
9	Dr. Durga Dutta Dash, CDM&PHO, Subarnapur	Member
10	Sri Bibhuti Bhusan Mishra, CDAO, Subarnapur	Member
11	Sri Akshaya Ku Jena, RTO, Subarnapur	Member
12	Sri Madanlal Sharma, DFO, Subarnapur	Member
13	Sri Bipin Kumar Dehury, GM, DIC, Subarnapur	Member
14	Sri Aswini Ku Bhoi, DIPRO, Subarnapur	Member
15	Sri Sisir Kanta Singh, Asst. Fire officer, Subarnapur	Member
16	Sri Biswanath Nayak, DPO, OSDMA	Member
17	Sri Ramesh Chandra Ekka, RO, PCB, Sambalpur.	Member
18	Sri Swadhin Ku Behera, Asst. Director of Factories & Boilers, Bolangir	Member convener

5.30 Local Crisis Group

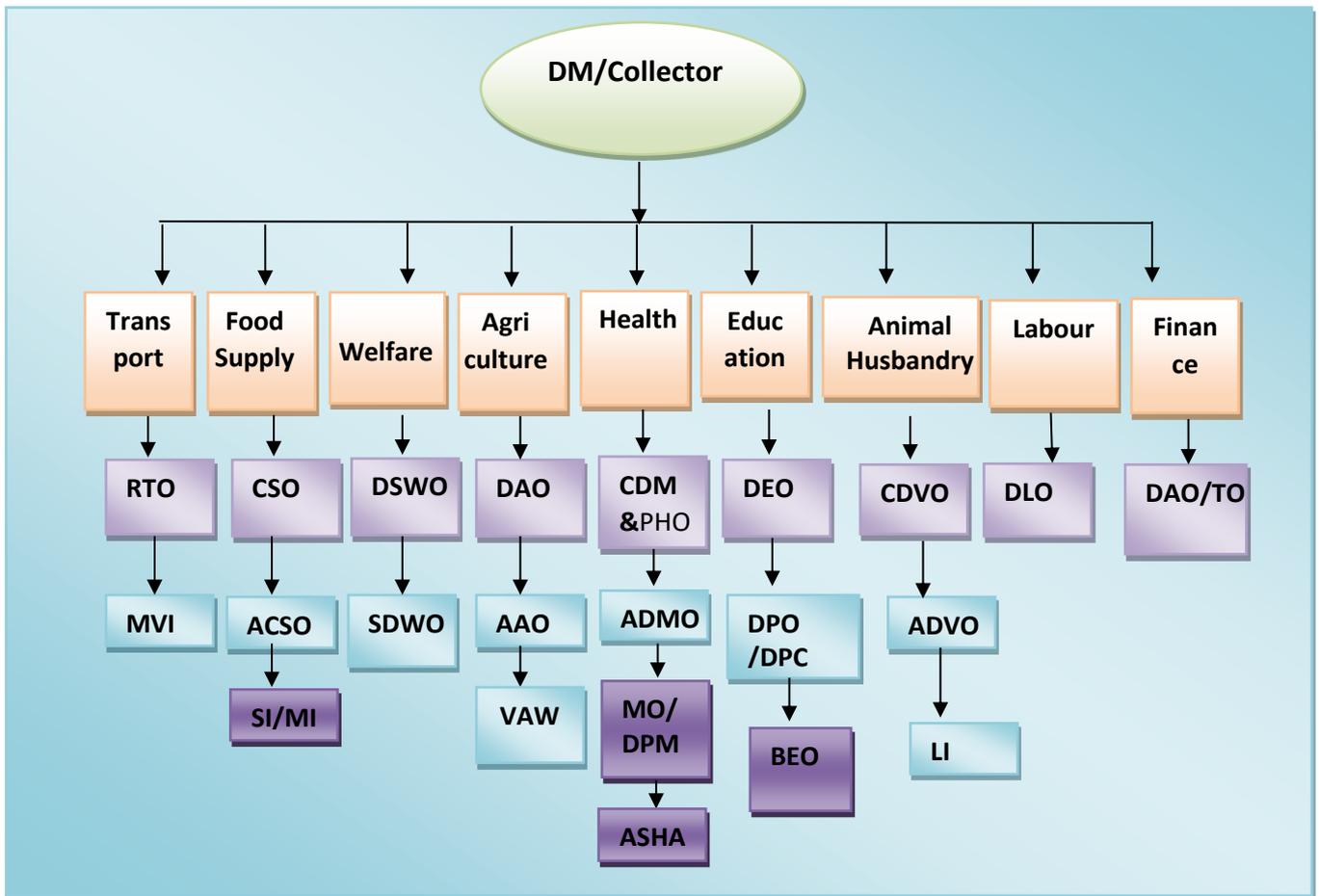
The Local Crisis Group shall be the body in the industrial pocket to deal with chemical accidents and coordinate efforts in planning, preparedness and mitigation of a chemical accident. Without prejudice to the functions specified under sub-rule (1), the Local Crisis Group shall,

1. Prepare local emergency plan for the industrial pocket;
2. Train personnel involved in chemical accident management;
3. Ensure dovetailing of local emergency plan with 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.

5.30.1 Composition of the Local Crisis Group

The Asst. Director Factories and Boiler, Bolangir has been requested to constitute the Local Crisis Group. It is not constituted yet.

5.31 Coordination structure at the district level and down the line Figure 5.5



5.32 GO-NGO Coordination before and after disaster in the district

Section 30 (2) (xix) of the DM Act mandate that the DDMA for collaboration with stakeholder agencies including NGOs for the purpose of improving the effectiveness of DM. Similarly, the Act mandates NGOs to act in an equitable and non-discriminatory manner for the purpose of assisting or protecting the disaster affected communities or for providing relief to the affected communities or while dealing with any effects of threatening disaster situations and has fixed the responsibility to monitor this on DDMA's vide section 34 (I).

Section 30 (2) (xix) of the Act stipulates that the DDMA shall advise, assist and coordinate the activities of the Departments of the Government at the district level, statutory bodies and other governmental and non-governmental organizations in the district engaged in the disaster management and Section 34 (I) lays down that the DDMA shall ensure that the non-governmental organizations carry out their activities in an equitable and non-discriminatory manner.

The NGOs may perform the following activities before, during & post disaster situation

- IEC activities on disaster management
- Community mobilization
- Disseminate all government aided programme to the community
- Ensure regular mock drill
- Encourage regular bleaching/use of disinfectants in drinking water sources

- Organize workshops seminar meeting/training on community-based disaster management
- Facilitate that Medical and Para Medical Staffs are available in their respective villages.
- Provide information of evacuees sheltered in different locations to the medical team.
- Facilitate Charitable Organizations work hand in hand with UPHC Medical Team.
- Facilitate and Co-ordinate village task forces/CBOs Institutions reach the spot without any bottlenecks
- Inform PHC to take immediate action and seek the support of District Administration if any epidemic is noticed.

5.33 The Role of Corporate Sector:

The corporate sector is an integral part of the society. As a member of the community, it is its responsibility to contribute to sustainable development and to integrate social and environmental concerns in its business operations as well as in its interaction with other stakeholders. It also contributes for the economic development through sustainable livelihoods. The corporate sector can play an essential role in leading and supporting the community in comprehensive risk management activities. Corporate sector has the potential for strengthening and promoting its own safety and protection against natural catastrophes as well as in assisting the community at large in reducing its vulnerability to disasters. For the holistic Disaster Risk Management, the corporate sector has the following responsibilities.

1. Awareness Generation.
2. Conducting Training.
3. Conducting Mock Drills
4. Development of on-site and off-site Disaster Management Plans
5. Preparation of inventory of resources
6. Sensitization programmes
7. Organization of an annual event

CHAPTER – 6

PREVENTION & MITIGATION MEASURES

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

Risk of destruction and casualties associated with different disasters can substantially be reduced by introduction of prevention and mitigation measures. Mitigation embraces all measures taken to reduce both the incidence and effect of the hazard itself and the structural and non-structural conditions of vulnerability, in order to reduce the impact of a future disaster.

Mitigation can take place before a disaster. The term is most often used to refer to **preventive actions** against potential disasters. Examples of mitigation measures which are **hazard specific** include but not limited to, modifying the occurrence and intensity of the hazard e.g. through water management in drought prone areas, avoiding the hazard by sifting people away from the hazard zones and by strengthening structures and capacities to reduce damage when a hazard occurs. In addition to these physical measures, mitigation aims at reducing the physical, economic and social vulnerability to hazards and the underlying causes for this vulnerability.

Mitigation is generally categorized into two main types of activities i.e. structural and non-structural. **Structural mitigation** refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant protective structures and infrastructure. **Non-structural mitigation** refers to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk with related impacts.

6.1.1 Hazard wise structural and non-structural prevention & mitigation measures described below.

Table No: - 6.1

Disaster Type	Sl. No.	Name of the Department/ Office	Structural Measures	Non-Structural measures	Date of completion
Flood	1	District office & the line departments		Function & management of control room round the clock. Coordination with SRC, OSDMA & line departments	May/june
	2	Irrigation Dept.	Strengthening and raising the height of weak points of embankments,	Identification of vulnerable points	Before onset of monsoon
			Storage of flood fighting materials like sand bags, bamboo's mats, bullahas, petromax light etc.		
			Repair of identified vulnerable points		
			Reservoir & Canal maintenance		
	3	R & B, RD Dept	Regular maintenance of Bridges.	Identification of vulnerable points	Throughout the year
			Maintenance of Roads / Building		
			Construction & maintenance of culverts		
	4	PWD, RD, Block	Repair of main and alternative routes.	Identification of vulnerable points	Throughout the year
			Repair of identified vulnerable points.		
Encourage waterways ferrys.					
Conversion of Fairweather roads to all weather pucca roads in all villages.					
5	Sub-Collector, BDO, NGO	Ensure establishment & maintenance of the Flood shelters	Chalk out the planning for supply of relief materials & organization of relief camps.	Throughout the year	

			Construction of mounds and cattle shelters	Planning for evacuation	
			Maintenance of Block Level / GP Level Storage go-down	Mock drill, training and awareness of community	
6	BSNL & SP (Signal)		Maintenance of Telephone, FAX, WLL Phones, Wireless & VHF sets		April-May
			Setting of Wireless Stations in District & Block offices		
			Installation of VHF / HAM Radio in all the Block Headquarters		
7	RWSS & PHD		Installation & repair of Tube wells & raising of platforms.	Assessment of functionality of Tube wells & make necessary arrangements	Throughout the year
			Installation of Pipe water Supply and sintex tank	Supply of disinfectant & regular dis-infection of tube wells, dug Wells & Ponds.	
8	TPWODL		Maintenance of Electric Sub Stations, Power grids	Ensure uninterrupted power supply to the control rooms during disaster period.	Through out the year
			Install Solar Lamps nears flood & Cyclone shelters & ensure its maintenance		
9	Health Dept, (CDM&PHO)			Procurement & stocking of First Aid, lifesaving vaccines, medicine mask gloves	Throughout the year
				Conducting workshops, training for staff ASHA, village level volunteers, taskforce members	
				Distribution of leaflets, posters & wall painting,	

	10	Veterinary (CDVO)		Procurement & stocking of medicine, vaccines & regular vaccination of domestic animals	Throughout the year
	11	Civil Supply (CSO)		Stocking of rice & wheat	Before onset of monsoon
	12	DIPRO & NGO Co-ordination Cell.		Dissemination of information & warning. Awareness generation, Coordination with NGO, CBO	Throughout the year
	13	Insurance companies/ Banks/ARCS		Insurance of life, livestock, Crop & small business units etc.	Throughout the year
Drought	1	District Administration		Identification of vulnerable pockets	On apprehension of drought based on weather data
				Necessary steps for drought eradication and provision for supply of input subsidy	
	2	PD, Watershed	Construction of water harvesting structures like check dam, farm pond		Throughout the year
	3	DDA/ADH	Promoting micro irrigation projects like drip and sprinkle irrigation	Training and capacity building of farmers and member of PACS Awareness campaigning for crop diversification, mixed cropping and short duration crops	Throughout the year
	4	EE, Irrigation		Supply of water through canal	During Kharif and Rabi.
	5	Banks/ Insurance companies/ ARCS		Farmer awareness and promoting insurance coverage Provision of credit	Before Kharif and Rabi crop season.
	6	DFO	Promotion of social forestry, agro forestry & plantation		Throughout the year
	7	TPWODL		Supply of electricity to the points to draw the ground water	Throughout the year

	8	EE, OLIC	Installation of lift irrigation points	Farmer awareness	Throughout the year
	9	BDOs		Adequate provision of alternative livelihood under MGNREGA.	On occurrence of drought.
Heat Wave	1	District Administration/DIPRO		Functioning of control room Awareness creation. Issue of instructions to the Line departments. Review of the situation time to time.	March-June
	2	CDM&PHO, CDVO,	Earmarking room/ward for treatment of heat wave affected patients	Advance stocking of adequate quantity of ORS packets, essential medicines, ice packs and saline at all levels. Keep Mobile health units and 108 Ambulance in ready to reach the heat stroke affected patients. Awareness creation	March-June
	3	E.E., RWSS, BDOs & PHD	Repairing of all defunct tube wells and piped water supply.	Identification of scarce water pockets. Make alternative arrangement of water supply through tankers in water scarcity areas.	Before March
			Installation of new tube wells in uncovered areas.		March-June
	4	BDOs and Eos of ULBs/NGOs		Opening of Jalachatras in places of public congregation	March-June
	5	DFO		Arrangement for drinking water for human habitats in the reserved forest and as well as for the wild & stray animals and birds in the forest.	March-June
6	DEO		Rescheduling of schools to morning hours	W.e.f 1 st of April	
			Completion of all examinations and rescheduling of any		

				necessary examinations to morning hours.	
				Ensure availability of ORS packets, drinking water in the school premises and prevent exposure.	
	7	DLO, E.E. R&B Division, E.E., RW Division, P.D, DRDA, E.O.s of all ULBs and all BDOs		Ensure that the implementing agencies, executants of public works to reschedule working hours to avoid peak heat hours.	
				Adequate arrangement for drinking water with ORS packets and rest shed at work site and access to emergency medical aid in case of necessity.	
	8	RTO		Rescheduling of bus timing.	
				Ensure drinking water, ORS packet & first aids are kept available for passengers	
	9	EE, WESCO		Uninterrupted power supply in summer	Throughout the year
				Provision of electricity in uncovered habitats	
Fire Hazard	1	EE R&B & EO of ULBs		Implementation of building code.	Throughout the year
				Retrofitting of public buildings. e.g. Hospitals, offices, community centers.	Throughout the year
	2	EE, WESCO	Safety maintenance of transmission lines and electrical equipment.		Throughout the year
	4	DFO		Regulation of use of inflammable substances or fire generating activities within forest area.	Throughout the year
	5	Fire officer		Regulation of fire safety at public	Throughout the year

				congregations and buildings Awareness generation through mock drill.	
	6	CDM&PHO/ GED	Safety of electrical installations in hospitals		Throughout the year
Lightning	1	District Administration		Awareness creation through leaflet & posters	Throughout the year
	2	EE R&B	Installation of lightning arresters.		Throughout the year
	3	DEO	Inclusion of Safety measure in the school and college curriculum		Throughout the year
	4	BDO		Regular and extensive training of rural masses, PRIs, ULBs, School teachers and students, Aanganwadi, health, water & sanitation workers Govt. Institutions.	Throughout the year
	5	EE, TPWODL	Safety of electrical grids and transmission lines		Throughout the year
	6	DFO	Plantation of palm trees		
Snake bite	1	CDM&PHO	.	Stocking of adequate anti-venom at all levels	Throughout the year
				Ensure availability of emergency ambulance services to victims	
				Public awareness on first aid and immediate medical care through ASHA	
Road Accident	1	EE R&B, EE NH Section	Widening of roads		Throughout the year
			Installation of reflectors		
			Putting of signage in accident prone areas and diversions.		
			Repair of potholes and construction of speed breakers.		

	2	RTO		Smooth traffic management	Throughout the year
				Public awareness on road safety measures.	
	3	EE, WESCO/EO, Municipality	Street lighting		Throughout the year
Pest Attack	1	District Administration /DIPRO/NGOs / CBOs		Identification of vulnerable pockets.	In the beginning of Kharif
				Provision for input subsidy	
	2	DDA/ADH		Protective seed/seedlings supply	Throughout the year
				Promote crop diversification, mixed farming	
		Ensure supply of original& qualitative pesticides			
	3	Banks/ Insurance companies/A RCS		Provision of crop insurance	Throughout the year
Forest Fire	1	DFO	Provision for afforestation/ new plantation	Security provision for watch & ward of the forest	Throughout the year
				Ready with the equipment like fire extinguisher, air blower	
				Ready with the water tankers	
	2	Fire service		Ready with equipment to extinguish fire	
Drowning	1	BDO/NGOs		Awareness & Capacity building of local health workers, PR representatives, village youths and local NGOs.	Throughout the year
	2	CDM&PHO		Ensure availability of Ambulance service	
	3	Fire Service		Ready for rescue	
Building Collapse	1	R&B and RD	Breakdown of the dilapidated buildings	Identification of old & dilapidated buildings	Throughout the year
				Ensure for adherence of NBC Ensure safety measures under taken during construction	

	2	DLO		Capacity building of masons	
	3	DEO/DPC		Implementation of School safety measures	
Dam Burst	1	Irrigation	Regular repairing & maintenance of reservoir	Regular inspection of dam	Before & after Monsoon

The following mitigation activities have been completed in 2023 by TEL irrigation, Subarnapur.

Sl No	Name of the Embankment Work	Length (in Km)	River	Block
1	Construction of FPE on Nibrutijore right from Tarbha to Jhartarbha from RD 195 M to 947 M	0.752	Nibrutijore	Tarbha
2	Raising and Strengthening of Flood Protection Embankment on left of River Ong near village Digsira from RD 00M to RD 1800M.	1.80	Ong	Dunguripali
3	Construction of FPE on Mahanadi left near village Kapsira from RD 00 M to RD 270 M.	0.27	Mahanadi	Ullunda
4	Construction of FPE on Mahanadi left near village Khambewsaripali from RD 00 M to RD 270 M.	0.27	Mahanadi	Birmaharajpur
5	Construction of FPE on Mahanadi left near village Apatnuagarh from RD 00 M to 275 M.	0.275	Mahanadi	Birmaharajpur
6	Construction of FPE on the river Menkajore connected to the river Mahanadi left near village Telenda from RD 00 M to RD 480 M.	0.48	Mahanadi	Ullunda
7	Construction of FPE on left of river Ong near village Sansamura from RD 00 M to RD 750 M.	0.75	Ong	Binka
8	Construction of FPE on left of river Ong near village Kendutikra (Sukha) from RD 400 M to RD 850 M.	0.45	Ong	Sonepur
9	Raising of FPE from Tarabha PWD Road to New bridge from RD 00 M to 170 M.	0.17	Nibrutijore	Tarbha
10	Construction of FPE on Tel left from RD 00 M to RD 450 M D/s near village Budelmunda	0.13	Suktel	Tarbha
11	Construction of F.P.E on Mahanadi left from Manamal to Telenda from RD 00 M to 2400 M	2.40	Mahanadi	Ullunda
	Total	7.747		

The following mitigation activities has been planned by Tel irrigation, Subarnapur for flood mitigation 2024 in Subarnapur district.

Sl No	Name of the Embankment Work	Length (in Km)	River	Block
1	Construction of FPE on river Ong left from Sukha to Pahandi from RD 00M to RD 5000M	5.0	Ong	Dunguripali
2	Construction of FPE on Nibrutijore right from Antarda to Tarbha from RD 0.00 M to 2000 M	2.0	Nibrutijore	Tarbha
3	Construction of FPE on Nibrutijore right at Narda from RD 00 m (RD Bridge) to 600 m	0.6	Nibrutijore	Tarbha
4	Construction of FPE on Mahanadi right from Jharapada-I to Golapada from RD 00 m to RD 3840 m.	3.84	Mahanadi	Binka

5	Construction of FPE on Mahanadi right at Rohila to Ong bridge at Pandikital from RD 00m to RD 11000M.	11.0	Mahanadi	Binka
6	Construction of FPE on Nibrutijore right from Tarbha to Thakapali from RD 0.00 M to 5000 M	5.0	Nibrutijore	Tarbha
7	Construction of FPE on right bank of Kulthijore tributary of river Mahanadi from Raksha bridge to Jogigumpha Anganbadi Kendra from RD 00m to RD 310m	0.31	Mahanadi	Ullunda
8	Construction of FPE on left bank of Chowkijore (Fulmukhi) nallah tributary of river Mahanadi from Jabada Basudev Bastia Farm to Kulpada at Binika NAC area from RD 00m to RD 190m	0.19	Chowkijore	Binka
9	Construction of FPE on right bank of Hariharjore from downstream of existing embankment from RD 165m to RD 565m near village Hilung	0.40	Hariharjore	Birmaharajpur
10	Construction of FPE on Suktel left at Kumunde from RD 00m to RD 850m	0.85	Suktel	Tarbha
11	Construction of FPE on Murmuri nallah tributary of Mahanadi at Rampur from PWD bridge to cremation ground.	0.15	Murmuri nallah	Binka
12	Construction of FPE on Kukudajore right from Mahule to Kukudajore bridge at Kharjura	0.30	Kukudajore	Sonepur
13	Construction of Flood restoration left bank of river Mahanadi near village Kelgaon from RD 00m to RD 250m.	0.25	Mahanadi	Birmaharajpur
14	Construction of FPE on right bank of Hariharjore from up-stream of existing embankment from RD 00m to RD 120m near village Patharghat	0.12	Hariharjore	Birmaharajpur
15	Restoration to FPE on Tel left at village Baidyanath	0.45	Tel	Sonepur
16	Restoration to FPE on Suktel left from Malsirigudi to Kutsira	0.14	Suktel	Sonepur
17	Construction of F.P.E including renovation of Baiganjuri nallah on Mahanadi right from PWD Bridge to Panisiali from RD 0.00 m to 1750 m U/s	1.75	Baiganjuri nallah tributary of Mahanadi	Sonepur
18	Construction of FPE on left bank of river Ong from village Haldi to Cherupali from RD 4430m to RD 5145 m	0.715	Ong	Dunguripali
19	Construction of F.P.E on Mahanadi left from Nimna to Nuagaon from RD 00 M to 3900 M	0.39	Mahanadi	Ullunda
20	Construction of FPE on Tel left from Karlamuhan to Maraduguccha from RD 00m to RD 7500m and from RD 18000m to RD 28500M.	18.0	Tel	Sonepur & Tarbha
21	Construction of FPE on Tel left from Gaterkela to Tel Bridge from RD 0.00 M to 6000 M	6.0	Tel	Sonepur
	Total	57.455		

Blocks have chalked out GP wise mitigation activities for different disaster. The mitigation activities to be taken up by Panchayat Samiti are mentioned below.

Mitigation activities planned by Binka Block

Sl No.	Name of the Gram Panchayat	Hazard Specific Mitigation Plan for	Required Intervention	Executing Departments	Fund Required
1	BABUPALI	Lightning	Palm plantation in Singhijuba beat under Babupali G.P	Forest/ MGNREGA	2.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	70.00 Lakh
2	BANKIGHIRDI	Lightning	Palm plantation in Singhijuba beat under Bankighirdi G.P	Forest/ MGNREGA	2.00 Lakh
		Flood	Renovation of Bankighirdi Nallia at Bankighirdi	Minor Irrigation	50.00 Lakh
			Renovation of Sarangapali bandha nallah at Sarangapali	Minor Irrigation	50.00 Lakh
			Renovation of Chelpadia nallah at Hutuma	Minor Irrigation	50.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	97.00 Lakh
2	BAUSUNI	Lightning	Palm plantation in Kantapali beat under Bausuni G.P .	Forest/ MGNREGA	2.00 Lakh
		Flood	Consturction of FPE at Bausuni on Ong river	Tel irrigation	80.00 Lakh
			Construction of wing wall and stone pitching satbasa nal at Bausuni	PR and DW	50.00 Lakh
			Construction of culvert I on phabsi jam nal at Phabsi	PR and DW	50.00 Lakh
			Construction of earthen bond on Basuni minor (main canal)	Rand B Division	01.00 Cr
			Construction of culvert on Kadam Bhag at Bausuni	PR and DW	50.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	71.00 Lakh
4.		Lightning	Palm plantation in	Forest/	2.00 Lakh

	BHANDAR		Singhijuba beat under Bhandar GP	MGNREGA	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	63.00 Lakh
5	CHARDA	Lightning	Palm plantation in Gargadbahal beat under Charada G.P .	Forest/ MGNREGA	2.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	50.00 Lakh
6	JULLUNDA	Lightning	Palm plantation in Banjipali beat under Jullunda G.P .	Forest/ MGNREGA	2.00 Lakh
		Flood	Construction of culvert on Khajurtal Nallah at Jullunda	PR and DW	50.00 Lakh
			Construction of culvert on nakatamunda nal near school at Naktamunda	PR and DW	50.00 Lakh
			Construction of earthen bond on Julunda baniataal canal at Jullunda	Tel Irrigation	80.00 Lakh
			Construction of culvert on Khajurdhuba nal at Amamunda	PR and DW	50.00 Lakh
			Construction of stone pitching and on Baltikra nal at Jullunda	PR and DW	50.00 Lakh
			Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW
7	KAINTARA	Lightning	Palm plantation in Kantapali G.P under Kaintara G.P .	Forest/MGNREGA	2.00 Lakh
		Flood	Construction of culvert on Jamu sor nal at Kaintara	Tel Irrigation	80.00 Lakh
			Construction of Culvert on Tal tal nal Mahada to Banjipali road	PR and DW	50.00 Lakh
			Construction of earthen bond on Bhaira kanta at Banjipali	Minor irrigation	80.00 Lakh
			Construction wing wall Handal dil nal at Kantapali	PR and DW	50.00 Lakh
			Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW

8	KUHIBAHAL	Lightning	Palm plantation in Banjipali G.P under Kuhibahal G.P .	Forest/ MGNREGA	2.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	47.00 Lakh
9	MAHADA	Lightning	Palm plantation in Banjipali G.P under Mahada G.P .	Forest/ MGNREGA	2.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	71.00 Lakh
		Flood	Constnction of side wall on Mahada jor at Mahada	Tel Irrigation	80.00 Lakh
			Constnction of culvert on Choukamal jor at Choukamal	PR and DW	50.00 Lakh
			Constnction of flood protection wall at Siali on Ong river	Tel Irrigation	80.00 Lakh
10	MAHADEVPA LI	Lightning	Palm plantation in Gargadbahal beat under Mahadevpali	Forest/ MGNREGA	2.00 Lakh
		Flood	Renovation of Pandakital Nallah at Pandakital	Minor Irrigation	50.00 Lakh
			Construction of earthen bond on Dandaghat Nallah at Ghodadhar	Minor Irrigation	80.00 Lakh
			Construction of earthen dam on Jam Nallah at Sansamura (Deherigot)	Minor Irrigation	50.00 Lakh
			Construction of high altitude road from sansamura (Deherigot) to Anganadi road	R and B division	01.00 Cr
			Construction of Flood Protection wall at Pandakital on Mahanadi river	Tel Irrigation	50.00 Lakhs
			Wing wall and minor stone pitching on Machimunda nallah at Ghodadhar	PR and DW	50.00 Lakh
			Culvert construction on Jam Nallah Sansamura	PR and DW	50.00 Lakh
			Culvert construction on Telli nallah at Sansamura	PR and DW	50.00 Lakh

			Construction of high altitude road from Sansamura to Mauligudi	R and B Division	01.00 Cr	
			Construction of multi purpose flood shelter on Kartang	OSDMA	01.00 Cr	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	60.00 Lakh	
11	MEGHALA	Lightning	Palm plantation in Siali beat under Meghla G.P .	Forest/ MGNREGA	2.00 Lakh	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	54.00 Lakh	
12	SANKARA	Lightning	Palm plantation in Gadgadbahal beat under Sankara G.P .	Forest/ MGNREGA	2.00 Lakh	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	33.00 Lakh	
13	SELEDI	Lightning	Palm plantation in Gadgadbahal beat under Seledi G.P .	Forest/ MGNREGA	2.00 Lakh	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	44.00 Lakh	
		Flood		Construction of Flood protection wall at Tulundupali on Mahanadi river	Tel Irrigation	50 Lakh
				Renovation of Gomni jor Nallah at Tulundupali	Minor irrigation	30.00 Lakh
				Renovation of Bilei nallah at Tulundupali	Minor irrigation	30.00 Lakh
				Construction of FPE on Mahanadi at Seledi	Tel Irrigation	01.00 Cr
				Construction of multipurpose flood shelter on Gargadbahal	OSDMA	01.00 Cr
14	SILATI	Lightning	Palm plantation in Banjipali beat under Silati G.P .	Forest/ MGNREGA	2.00 Lakh	
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	61.00 Lakh	
15	SINDURPUR	Lightning	Palm plantation in Singhijuba beat under Sindurpur G.P .	Forest/MGNREGA	2.00 Lakh	
		Flood		Culvert on puner jor nallah at Ganeshpur	Tel irrigation	80.00 Lakh
				Culvert on Dhuba jor at Jharapada (Manigaon)	Tel irrigation	80.00 Lakh

			Constuction of FPE on Mahanadi at Manigaon	Tel irrigation	80.00 Lakh
			Construction of multipurpose flood shelter on Cherupali	OSDMA	01.00 Cr
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	79.00 Lakh
16	SINGHIJUBA	Lightning	Palm plantation in Singhijuba beat under Singhijuba G.P .	Forest/MGNREGA	2.00 Lakh
		Pest attack	Installation of light trap at crop field	Dept. of Agril. & FW	80.00 Lakh

Mitigation activities planned by Birmaharajpur Block

Sl No	Name of the Gram Panchayat	Hazard Specific Mitigation Plan for	Required Intervention	Executing Departments	Fund Required
1.	Subalaya	Flood	Const of Guard wall & Protection Wall	Panchayat Samiti, Birmaharajpur	5,00,000
			Drain at Nuapada	Panchayat Samiti, Birmaharajpur	7,00,000
			Const of earthen bond from Subalaya Play ground to Mahanadi	Panchayat Samiti, Birmaharajpur	10,00,000
			Protection wall with Stone packing at Kelgaon	Irrigation	12,00,000
			Construction of culvert on the road from Gobindpur to Tikirapada	Irrigation	15,00,000
		Lightning	Palm tree plantation at Tikirapada	Forest	500000
2.	Pitamahul	Flood	Raising of height of road from Thakurpur to Kunjamahul	Rural Development	12,00,000
			Raising of height of Highway Road from Thakurpur to Duleswar	Rural Development	7,00,000
			Construction of Guardwall at PurunaTevepadar	Irrigation	8,00,000
			Raising of height of Road from Tevapadar to Mahanadi	Rural Development	7,00,000
			Raising of height of Road from Tevapadar to Buromal	Rural Development	7,00,000
			Raising of height of Road from PWD road to Mahanadi with Box	PWD	12,00,000

			Culvert		
			Raising of height of Road from Pitamahul to Kasalpur	Rural Development	7,00,000
			Flood control embankment at Tevapadar Surubalijor	Irrigation	10,00,000
			Construction of Flood shelter at Duleswar	OSDMA	25,00,000
		Drought	Installation of lift irrigation points	OLIC	3000000
			Extension of canal	Irrigation	4000000
			Construction of Farm Ponda	PR&DW	2000000
		Lightning	Palm tree plantation at Pitamahul	Forest	500000
3.		Flood	Raising of height of road from Khameswari pali to kamalpur with bridge	Rural Development	27,00,000
			Raising of height of Road from tithipali Mahanadi road to ferighat khameswari pali with approach road, flood protection wall near gentinala	Irrigation	1000000
	Ufula		Improvement of road from Tithipali Mahanadi Road to Rathapur with construction of bridge, flood protection wall over Dahanijor	Irrigation	10,00,000
			Construction of flood protection wall at Dahanijor Tithipali	Irrigation	15,00,000
			Const of Banya Ashraya Sthala with flood control wall at Khameswaripali	Irrigation	60,00,000
4	Bagbar	Flood	Const of Banya Ashraya Sthala at Bagbar	D&M	3000000
			Construction of flood protection wall at Deuli	PS	1500000
			Embankment raising at Buroghat	Irrigation	3000000
5	Kamira	Flood	Construction of earthen bond at Kamira	PR&DW	1000000
		Drought	Installation of lift irrigation points	OLIC	3000000
			Construction of canal	Irrigation	4000000
			Construction of Farm Ponds	PR&DW	2000000
6	Jatesingha	Flood	Construction of earthen bond at keutipali	PR&DW	7,00,000

			Construction of earthen bond at Godhaneswar	PR&DW	7,00,000
		Drought	Installation of lift irrigation points	OLIC	3000000
			Construction of canal	Irrigation	4000000
			Construction of Farm Ponds	PR&DW	2000000
7	Khandahata	Drought	Construction of canal	Irrigation	4000000
			Construction of Farm Ponds	PR&DW	2000000
			Installation of lift irrigation points	OLIC	3000000
		lightning	Palm plantation	Forest	500000
8	Sangrampur	Drought	Construction of Farm Ponds	PR&DW	2000000
			Installation of lift irrigation points	OLIC	3000000
			Construction of canal	Irrigation	4000000
		lightning	Palm plantation	Forest	500000

Mitigation activities planned by Dunguripali Block

Sl No.	Name of the Gram Panchayat	Hazard Specific Mitigation Plan for	Required Intervention	Executing Departments	Fund Required
1	Digsira	Flood	Construction of flood protection wall on Ong River at Digsira	Irrigation	70lakh
		Lightning	Palm Plantation at Digsira	Forest	10.LAKH
		Pest Attack	Light Trap	Agriculture	50.lakhs
Awareness on mixed cropping	Agriculture		1.0 lakh		
2	Andharibanji	Lightning	Palm Plantation at Adakasa(puja dunguri)	Forest/MGNREGA	10.00 Lakh
		Drowning	Construction of Steps in Puja Dunguri Tank	PR & DW Dept.	10.00lakh
3	Beheramal	Flood	Construction of Flood protection wall at Kudadera Nalla,	R&B	50 Lakh
			Plantation at Rabanguda	Forest dept	50 Lakh
			Construction of Earthen bond at Beheramal	PR & DW Dept	50.00
		Pest Attack	Light trap	Agriculture	10.00
			Awareness on mixed cropping	Agriculture	1.0 lakh
4	Sukha	Flood	Construction of Flood protection wall on Ong River at Kendutikra	Irrigation	70.00 lakhs
			Construction of Multipurpose	OSDMA	1.5 Crore

			Flood Shelter at Sukha		
		Pest Attack	Light trap	Agriculture&Horticulture	10.00 LAKHS
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lightning	Palm tree plantation at Near Kendutikra, Haldi	Forest & MGNREGS	10.00 Lakhs
5	Dunguripali	Road accident	Create awareness on road safety	Road and Transport	1.00L
			Construction of speed breaker	Road and Transport	1.00L
		Lightning	Palm Plantation at Chingerkata	Forest & MGNREGS	5.00 Lakhs
		Pest attack	Light Trap	Agriculture	25.Lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
6	Mayabarha	Drowning	Construction of step at Sarasmal tank	PR dept	5.00Lakhs
		Lightning	Palm tree plantation at Sarasmal, Dadar,	Forest & MGNREGS	10.00 Lakhs
		Road accident	Creation of awareness on road safety	Road and Transport Dept	1 lakh
7	Bhimtikra	lighting	Palm plantation at Salepali RF	FOREST&MGNERGA	10.00L
		Pest Attack	LIGHT TRAP	Agriculture	10.00 L
			Awareness on mixed cropping	Agriculture	1.0 lakh
8	Rampur	Road accident	Awareness on road safety	Road and Transport	1.00L
			Speed Braker	Road and Transport	1.00L
		Lightning	Palm Plantation at Katapali	Forest & MGNREGS	02.50 Lakhs
		Pest Attack	Light trap	Agriculture	5.00L
			Awareness on mixed cropping	Agriculture	1.0 lakh
9	Lingmarni	Pest Attack	Light trap	Agriculture	5.00L
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lightning	Palm Plantation at Lingmarini	Forest & MGNREGS	02.50 Lakhs
10	Samleichuan	Flood	Const. of embankment and bridge near Sadhapali Nalia	R&B	80.00 Lakhs
		Lightning	Palm Plantation near jatra padia	Forest & MGNREGS	02.50 Lakhs
			Light trap	agriculture	5.00lakh

		Pest attack	Awareness on mixed cropping	Agriculture	1.0 lakh
11	Sargul	Pest attack	Light trap	Agriculture	5.00 Lakhs
		Lightning	Palm Plantation near Champaduli	Forest & MGNREGS	02.50 Lakhs
12	Sunapali	Pest attack	Light trap	agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
13	Sahala	Lightning	Palm Plantation at Gandapali	Forest & MGNREGS	02.50 Lakhs
		Pest attack	Light trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
14	Baidupali	Flood	Construction of Embankment at Phatamunda Nalia	Irrigation	80.00 Lakhs
		Pest attack	Light trap	Agriculture	5.00 Lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
Lightning	Palm Plantation at Lariabahal	Forest & MGNREGS	05.00 Lakhs		
15	Bandhpali	Pest attack	Light trap	Agriculture	5.00L
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lightning	Palm Plantation at	Forest & MGNREGS	02.50 Lakhs
16	Tamamura	Pest attack	Light trap	Agriculture	5.00 LAKH
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lightning	Palm Plantation at GADHAPALI	Forest & MGNREGS	02.50 Lakhs
17	Kapasira	Flood	Construction of bridge and embankment at Baghhandijor (kapasira)	R&B	16.00 CRORE
18	Badkarley	Pest attack	Light Trap	Agriculture	5.00 LAKHS
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lighting	Plantation at sialinali J	Forest & MGNREGS	02.50 Lakhs
19	Tangerkarley	Pest attack	Light Trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lightning	Palm Plantation at San Bhalipali	Forest & MGNREGS	02.50 Lakhs
20	Gajbandh	Pest attack	Light Trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh

		Lightning	Palm plantation at Brahminipali	Forest & MGNREGS	02.50 Lakhs
21	Nakenpalipali-Pandkital	Road accident	Construction of speed Braker	Road and Transport	1.00lakhs
			Creation of awareness about Road Accident	Road and Transport	1.00 lakhs
		Pest attack	Light trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
22	Karlajuri	Lighting	Palm Plantation at Dumerpali	Forest & MGNREGS	02.50 Lakhs
		Pest attack	Light trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
23	Chinajuri	Pest attack	Light Trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
		Lighting	Palm plantation at Titerkunda	Forest & MGNREGS	02.50 Lakhs
24	Cherupali	Lighting	Palm Plantation at Nuapali	Forest & MGNREGS	02.50 Lakhs
		Pest attack	Light trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
25	Icchapur	Pest attack	Light Trap	Agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh
		lighting	Palm plantation at Phatamunda	Forest & MGNREGS	02.50 Lakhs
26	Bankipali	Lighting	Palm plantation at Bhagitkra	Forest & MGNREGS	02.50 Lakhs
		Pest attack	Light trap	agriculture	5.00 lakhs
			Awareness on mixed cropping	Agriculture	1.0 lakh

Mitigation activities planned by Sonepur Block

Sl No.	Name of the Gram Panchayat	Hazard Specific Mitigation Plan for	Required Intervention	Executing Departments	Fund Required
1	Baladi	Flood	Flood protection embankment on Suktel at Matikod	Tel Irrigation	80 Lakh
2	Baladi	Lightning	Palm Plantation at Budelbahali	Forest/ MGNREGA	2.00 Lakh
3		Drought	Installation of Lift Irrigation Points	OLIC	
4			Construction of Farm Ponds	PR & DW Deptt.	
5	Bisimunda	Lightning	Palm Plantation at	Forest/	2.00 Lakh

			Budelbahali	MGNREGA	
6		Drought	Construction of Farm Ponds	PR & DW Deptt.	
7	Chhakormal	Flood	Flood protection wall at Tangar Nalla, Balpur	Tel Irrigation	50 Lakh
8			Flood protection wall at Khajuri Nalla, Matiapali	Tel Irrigation	50 Lakh
9			Flood protection embankment on Ong right at Balpur	Tel Irrigation	1.00 Crore
10	Chhakormal	Draught	Renovation Of Sukha Kata Dabbling	Minor Irrigation	80.00 Lakhs
11		Drought	Installation of Lift Irrigation Points	OLIC	
12			Construction of Farm Ponds	PR & DW Deptt.	
13		Lightning	Palm tree plantation at Chahatakhol, Chhakormal, Dablong, Baslat & Baslat R.F periphery	Forest & MGNREGS	10.00 Lakhs
14	Hardakhhol	Flood	Flood protection embankment on Tel River at Baidyanath	Tel Irrigation	02.00 Crore
15			Flood protection embankment on Tel River left at Lakarma	Tel Irrigation	80.00 Lakhs
16		Lightning	Palm Plantation at Arjunpur R.F Periphery	Forest & MGNREGS	05.00 Lakhs
17		Drought	Installation of Lift Irrigation Points	OLIC	
18			Construction of Dug well	PR & DW Deptt.	
19			Construction of Farm Ponds	PR & DW Deptt.	
20	Janmura	Flood	Const. of FPE on Tel River at Janmura	Tel Irrigation	01.00 Crore
21		Lightning	Palm tree plantation at Chhanchhan Dungri periphery, Piplipali, Janmura, Dngripali	Forest & MGNREGS	10.00 Lakhs
22		Drought	Installation of Lift Irrigation Points	OLIC	
23			Construction of Farm Ponds	PR & DW Deptt.	
24	Kalapathar	Flood	Const. of FPE on	Tel Irrigation	80.00 Lakhs

			Ong River at Dhaurakhaman			
25			Const. of FPE on Baiganjuri Nallah at Baiganjuri	Tel Irrigation	80.00 Lakhs	
26		Lightning	Palm Plantation at Bankabija Kalapathar	Forest & MGNREGS	02.50 Lakhs	
27		Drought	Installation of Lift Irrigation Points	OLIC		
28			Construction of Dug well	PR & DW Deptt.		
29			Construction of Farm Ponds	PR & DW Deptt.		
30	Khaliapali	Flood	Const. of FPE on Ong River Khaliapali	Tel Irrigation	80.00 Lakhs	
31		Drought	Const. of Check Dam at Khaliapali Nallah	Minor Irrigation	25.00 Lakhs	
32				Installation of Lift Irrigation Points	OLIC	
33				Construction of Farm Ponds	PR & DW Deptt.	
34			Lightning	Palm Plantation at Kudopali	Forest & MGNREGS	02.50 Lakhs
35	Khari	Flood	Const. of FPE on Suktel River left from Tareikela to Suktel Bridge at Khari	Tel Irrigation	80.00 Lakhs	
36		Drought	Const. of Check Dam at Tareikela Nallah	Minor Irrigation	50.00 Lakhs	
37				Installation of Lift Irrigation Points	OLIC	
38				Construction of Farm Ponds	PR & DW Deptt.	
39				Land Development works	PR & DW Deptt.	
40			Lightning	Palm Plantation at Bandhapali	Forest & MGNREGS	02.50 Lakhs
41	Kharjhura	Flood	Const. of FPE on Tel River at Kharjhura	Tel Irrigation	01.00 Crore	
42		Drought	Renovation of Kharjhura Nallah	Minor Irrigation	10.00 Lakhs	
43				Installation of Lift Irrigation Points	OLIC	
44				Construction of Farm Ponds	PR & DW Deptt.	
45				Land Development works	PR & DW Deptt.	
46			Lightning	Palm Plantation at	Forest &	02.50 Lakhs

			Bahirkhamaan R.F Periferry	MGNREGS	
47	Lachhipur	Flood	Const. of Flood Protection Wall at Utali Nallah	Tel Irrigation	50.00 Lakhs
48			Const. of Flood Protection Embankment on Ong River at left side of Lachhipur	Tel Irrigation	01.00 Crore
49		Lightning	Palm Plantation at Dabpali	Forest & MGNREGS	02.50 Lakhs
50		Drought	Installation of Lift Irrigation Points	OLIC	
51			Construction of Farm Ponds	PR & DW Deptt.	
52	Mallikmunda	Lightning	Palm Plantation at Gadia	Forest & MGNREGS	02.50 Lakhs
53		Drought	Construction of Farm Ponds	PR & DW Deptt.	
54	Mayurudan	Flood	Const. of FPE at Rugudipali on Ong River	Tel Irrigation	80.00 Lakhs
55		Drought	Const. of Check Dam at Mayurudan Nallah	Minor Irrigation	35.00 Lakhs
56			Construction of Farm Ponds	PR & DW Deptt.	
57		Lightning	Palm Plantation at Kirtipur and Kinful	Forest & MGNREGS	05.00 Lakhs
58	Narayanpur	Flood	Const. of FPE at Malisirigudi on Suktel near Shiba Mandir	Tel Irrigation	01.00 Crore
59		Drought	Renovation of Narayani Kata at Narayanpur	Minor Irrigation	60.00 Lakhs
60			Construction of Farm Ponds	PR & DW Deptt.	
61			Land Development works	PR & DW Deptt.	
62		Lightning	Palm Plantation at Kadalipali	Forest & MGNREGS	02.50 Lakhs
63	Rengali	Drought	Const. of Check Dam at Bisalpali Nallah	Minor Irrigation	15.00 Lakhs
64			Const. of Check Dam at Bankatentuli Nallah	Minor Irrigation	30.00 Lakhs
65			Construction of Farm Ponds	PR & DW Deptt.	
66			Lightning	Palm Plantation at Rengali	Forest & MGNREGS

Mitigation activities planned by Ullunda Block

SI No .	Name of the Gram Panchayat	Hazard Specific Mitigati on Plan for	Required Intervention	Executing Departments	Fund Required
1	,Mundoghat	Flood	Construction of Flood protection wall at Bhajbalpur	PR &DW Deptt.	5 lakh
			Construction of earthen bond at Bijepur	PR &DW Deptt.	5 lakh
			Construction of Flood protection wall at Lankabahal	PR &DW Deptt.	5 lakh
			Construction of MFS at Hikudi	OSDMA	1.5cr
			Construction of MFS at Bhajbalpur	OSDMA	1.5cr
2	Bishopada	Lightening	Palm tree Plantation at Nuagaon	PR &DW Deptt.	3 lakh
			Palm Plantation at Khajariapali	PR &DW Deptt.	3 lakh
		Flood	Construction of Flood protection wall at Badhila	PR &DW Deptt.	5 lakh
3	Nimna	Flood	Construction of Flood protection wall at Bhajbalpur	PR &DW Deptt.	5 lakh
			Construction of Earthen bond at Telenda	PR &DW Deptt.	3 lakh
4	Panchamahala	Flood	Construction of Flood protection wall at Badmal	PR &DW Deptt.	5 lakh
		Lightening	Palm Plantation at Kapasira	PR &DW Deptt.	3 lakh
5	Ullunda	Lightening	Palm Plantation Badali	PR &DW Deptt.	3 lakh
		Drought	Construction of canal	Irrigation	
			Land Development works	PR &DW Deptt.	
			Installation of more LI points	OLIC	
			Construction of Farm ponds & dug well	PR &DW Deptt.	
Supply of short duration drought resistant seed	Agriculture				
6	Chadeipank	Flood	Construction of Flood protection wall at Patrapali	PR &DW Deptt.	5 lakh
			Construction of Flood protection wall at Mankadbahal	PR &DW Deptt.	5 LAKH

7	Sindhol	Flood	Construction of flood protection wall	PR &DW Deptt.	5 lakh
			Construction of MFS at Sindhol village	OSDMA	1.5cr
			Construction of Flood protection wall at Lamtul	PR &DW Deptt.	5 lakh
			Construction of Check dam at Mundomohul	PR &DW Deptt.	3 lakh
			Construction of Flood protection wall	PR &DW Deptt.	5 lakh
		Lightening	Palm plantation Budhijharan	PR &DW Deptt.	3 lakh
8	, Mahda	Flood	Construction of Earthen Bond at Apatnuagarh	PR &DW Deptt.	3 lakh
9	Lastala	Drought	Construction of canal	Irrigation	
			Construction of Farm ponds & dug well	PR &DW Deptt.	
			Land Development works	PR &DW Deptt.	
			Supply of short duration drought resistant seed	Agriculture	

The following activities have been chalked out for drought mitigation in Subarnapur district.

Sl.No	Interventions	Rs. (in Rs)
1 (a)	Climate Resilient Production System (a). Incentive to farmers for cultivation of Stress tolerant varieties of paddy through DBT through OSSC for 400 Ha @ 3800 involving 800 beneficiaries	15,20,000
1 (b)	Climate Resilient Production System (b). Incentive to farmers through DBT for diversion from paddy to low duty non paddy crops for 150 ha @ 3800 involving 300 beneficiaries	5,70,000
2	Improving the water holding capacity (WHC) of soil in upland and medium land (Assistance to farmers for use of organic/green manure/hydrogel/cover crops etc. through DBT) for 600 ha @1000 involving 800 beneficiaries	6,00,000
3	Protective Irrigation (Provision of subsidy through farmers max. upto Rs.15000 for purchase of diesel/solar pump set (5HP) 100 nos.	15,00,000
4	Orientation and Capacity Building Programs for 1 prog for 50 beneficiaries	6000
5	Strengthening of FPOs 800 nos prog @200 involving 1600 beneficiaries	1,60,000
6	Controlled Irrigation for vegetable production (Assistance to farmers for using drip irrigation system for sustainable vegetable cultivation for 10 programmes @90000	9,00,000

6.2 Scope for Integrating Different Scheme for Disaster Risk Reduction (DRR) Activities.

Mainstreaming DRR involves incorporating disaster risk reduction into development policy and practice. It means radically expanding and enhancing disaster risk reduction so that it becomes normal practice, fully institutionalized

within an agency's relief and development agenda. Mainstreaming has three purposes:

- (a) To make certain that all the development programmes and projects that originate from or are funded by an agency, are designed with evident consideration for potential disaster risks and to resist hazard impact,
- (b) To make certain that all the development programmes and projects that originate from or are funded by an agency, do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment,
- (c) To make certain that all the disaster relief and rehabilitation programmes and projects that originate from or are funded by an agency are designed to contribute to developmental aims and to reduce future disaster risk.

Mainstreaming DRR into the developmental plans is an important mandate of the Disaster Management Act 2005.

Steps for ensuring the incorporation of DRR into various ongoing programmes/plans are as follows:

- (a) Identification of key programme/projects of Government of India,
- (b) Identification of entry points within the programme for integration of DRR (structural, non-structural and other mitigation measures) at various levels viz. National, state and district levels,
- (c) Close coordination with concerned departments such as State Planning Commission and Finance Department for promoting DRR measures into development plans and policies,
- (d) Advocacy for allocation of dedicated budget for DRR within the departmental plans,
- (e) Preparation of guidelines for integration of disaster risk reduction measures into development plans of various departments at the district and sub-district levels.

Table No-6.2 Schemes/Project for DRR

S l.	Scheme	Possible activities for DRR
	State Plan –River Embankment	Construction and restoration of Flood Protection Embankments along the rivers under Subarnapur District for flood mitigation
	State Plan –Flood Restoration	do
	RIDF-NABARD	do
	State Plan - Pipe Line Projects	do
	CAPEX Scheme	do
	PMKSY	Drip & Sprinkler Irrigation for drought management
	MGNREGA	The scheme is being implemented by several departments for sustainable livelihoods, flood & drought mitigation through construction of embankments/earthen bonds, Guard wall, Check Dam etc
	PMAY	Construction of pucca houses for all.
	PMFBY	Crop insurance

CHAPTER- 7

CLIMATE CHANGE ADAPTATION

The climate is extreme. It is hot and moist. The mean maximum temperature 43.3°C goes up to 45°C. In the hot weather season from March to May, weather is generally dry and uncomfortable. Winters are very cold with temperature as low as 7°C. The mean minimum temperature is 13°C. The summer is followed by the rainy season, which starts with the outbreak of the south-west monsoon in June. It reaches its peak in August and retreats in the middle of October. It experiences fairly good rainfall and high degree of humidity. The actual rainfall varies from block to block. About 84% of rainfall is received during the period from June to September. The normal average rainfall is not uniformly distributed. The annual rainfall of the district is 1418.5 mm in 61.6 rainy days. This District mostly faces four seasons in a year, i.e., winter season from December to February is followed by the pre-monsoon or hot weather season from March to May. The period from June to September constitute the south-west monsoon season and the period of October and November is the post-monsoon season.

Climate change adaptation is a complex concept. To define climate change adaptation the following points can be taken into consideration.

WEATHER: It describes the day-to-day temperature, humidity, precipitation activity, wind and atmospheric pressure.

CLIMATE: It is the statistical distribution of weather patterns over long periods of time.

CLIMATE VARIABILITY: It is the term used to describe a range of weather events that, when averaged together, describe the climate of a region. That is: weather conditions that vary in a particular season but is not regularly repeated.

CLIMATE CHANGE (CC): is a shift in weather conditions that occur and persist for an extended period, typically decades or longer.

VULNERABILITY: 'Degree to which a system is susceptible to the adverse effects of climate change, including climate variability, climate extremes and related direct and indirect impacts.

EXPOSURE: Nature and degree to which a system is exposed to significant climatic variations and/or its consequences and impacts.

SENSITIVITY: The degree to which a system is affected either adversely or beneficially, by climate related stimuli.

ADAPTIVE CAPACITY: Ability to adjust to climate change, to moderate the potential damage from it, to take advantage of its opportunities, or to cope with its consequences.

CLIMATE CHANGE MITIGATION (CCM): An anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases.

CLIMATE CHANGE ADAPTATION (CCA): Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effect, which moderates harm or exploits beneficial opportunities.

Weather and climate are the result of complex interactions between anthropogenic and Natural factor. Evidence of global climate change include higher average temperature, changes in precipitation, Ocean warming, ocean acidification, sea level rise, decreasing seaice, and changes in physical & 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.

Climate change reduces resilience of and increases the human vulnerability. Those with least resources have least capacity to adapt and are most vulnerable. Climate changes bring loss in functional biodiversity and pose threat to food security. Extreme weather events, a manifestation of climate change, significantly increases the human suffering due to loss of life and property.

7.1 Greenhouse Gases (GHGs)

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 Green house Gas : 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 Co2 emission (PPM)	Ranking as per CO2 Emission (in the district)	Other major pollutants emitted (PPM)	Action taken for cutting down émission
	Nil					

No large industries exit in Subarnapur district. Some Rice Mills are existing in Subarnapur. Emission of Carbon dioxide may be low in the district.

7.3 Important Green house Gas : Methane (CH₄)

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

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

Table: 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 Green house Gas : Nitrous Oxide(N₂O)

The third most significant greenhouse gas (contributes ~6% to total radiative forcing by long-lived GHGs) can stay 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 Green house Gas : Fluorinated Gas

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 sulphur hexafluoride (SF₆).

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

Table: 7.5

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

7.6 Important Green House Gas : Chlorofluorocarbones (CFCs)

Chlorofluorocarbones (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, chlorofluorocarbones (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

SI 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 Séquestration

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

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

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

Major Greenhouse Gases Contributors (Anthropogenic) to Climate Change

Table: 7.7

Greenhouse Gas	Human Source (Examples)	% of Total Global GHG Emissions (2010)
Carbon dioxide (CO ₂)	Fossil fuel combustion, land use changes, cement production, etc	76%
Methane (CH ₄)	Fossil fuel mining/distribution, livestock, rice agriculture, landfills, etc	16%

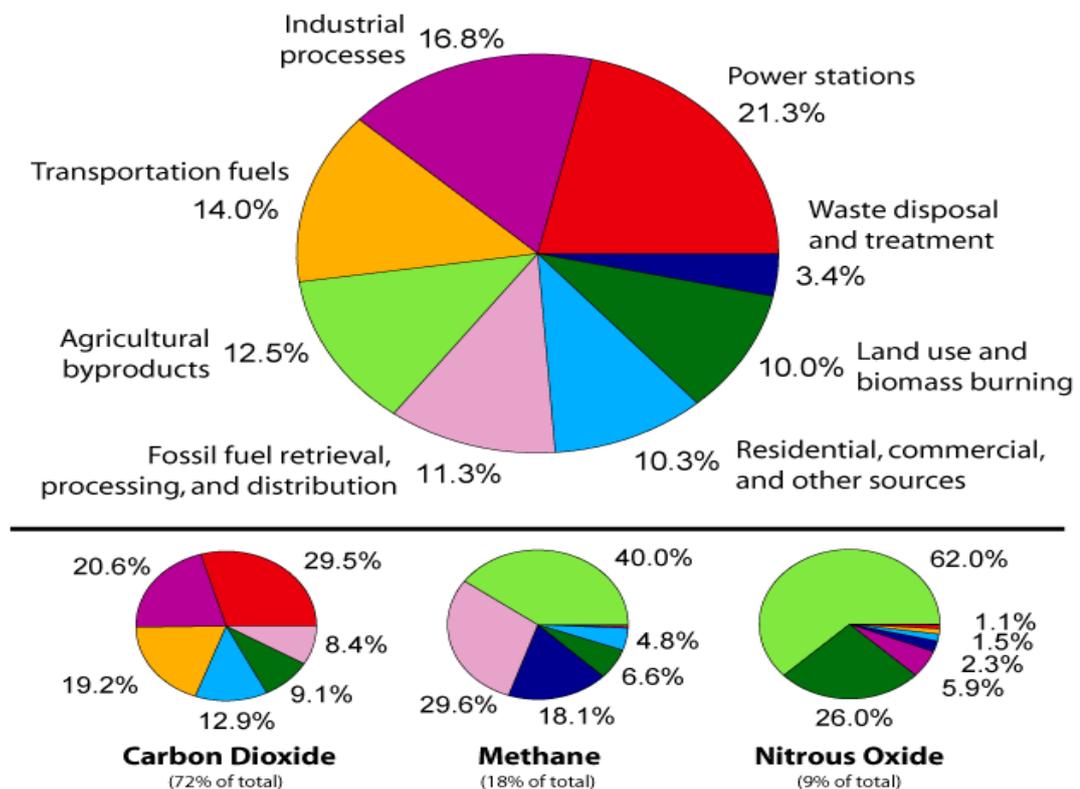
Nitrous oxide (N ₂ O)	Agriculture (fertilisers) and associated land use change, etc	6%
Hydrofluorocarbons (e.g. HFCs)	Liquid coolants, etc	< 2%
Perfluorocarbons (e.g. PFCs)	Refrigerant, electronics industry and aluminium industry, etc	< 2%
Sulphur hexafluoride (SF ₆)	Insulator in electronics and magnesium industry, etc	< 2%
Nitrogen trifluoride (NF ₃)	Electronics and photovoltaic industries, etc	< 2%

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

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

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

Annual Greenhouse Gas Emissions by Sector



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

Reserved Forest / Protected Forest (in Sq. KM)	Revenue / Village Forest (in Sq. KM)	Private owned Forests (in Sq. KM)	Others (If any) (in Sq. KM)	Total (in Sq. KM)
391.94475	21.105	-	15.70495	428.7547

7.8 Sectors with High Mitigation Potential

(Table : 7.9)

SI	Sectors	Mitigation Options
1	Energy	<ul style="list-style-type: none"> • Use of renewable heat and power (hydropower, solar, wind, geothermal and bio-energy) • Improved supply and distribution efficiency • Carbon capture storage (CCS) • Combined heat and power
2	Transport	<ul style="list-style-type: none"> • More fuel-efficient vehicles • Use of alternative energy sources (biofuels, cleaner diesel, etc.) • Better land-use and transport planning • Shift from individual transport to public transport systems • More efficient driving practices • Non-motorized transport (cycling, walking)
3	Industry	<ul style="list-style-type: none"> • Process-specific technologies that improve efficiency and reduce emissions • Material recycling and substitution • Heat and power recovery/cogeneration • Control of greenhouse gas emissions
4	Agriculture	<ul style="list-style-type: none"> • Manure and livestock management to reduce CH₄ emissions • Improved fertilizer application techniques to reduce N₂O emissions • Improved crop and grazing land management to increase soil carbon storage • Restoration of cultivated peaty soils and degraded lands • Agro-forestry practices
5	Forestry	<ul style="list-style-type: none"> • Reduced deforestation • Afforestation/reforestation • Forest management • 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	Housing & Public works	<ul style="list-style-type: none"> • The building or infrastructure consider the safety measures as per National Building Code. • Adopt innovative technology & designs for low cost, eco-friendly & hazard Resilient housing with locally available resources. • Conduct Social & environmental assessment for infrastructures. • Capacity building of architects, engineers & masons on latest techniques for safe buildings.
8	Health	<ul style="list-style-type: none"> • Stock of medicines

	<ul style="list-style-type: none"> • Available ambulance service • Constitute health teams & prepare resource inventory • Mobilize the medical team & resources. • Capacity building of staffs.
--	---

7.9 Sector specific climate change mitigation projects : (Table : 7.10)

SI No	Sector	Project Title	Period		Mitigation Targets
			From	To	
	Forest & Environment	MGNREGS	2024	2025	Agro Forestry 570000 Nos, ANR 280 Ha, AR 475 Ha. Avenue 10 RKM, TCOF 1510000 Nos.UTP 11000

7.10 Impact of Climate Change & expected actions: Table No 7.11

SI		Impact	Expected action
1	Extreme heat	Unusual &unprecedented spells of hot weather may occur. High temperature would prevails & heatwave cases may arise	Urban planning is needed to counter the effect. Plantation of more trees. Awareness generation
2	Change in rainfall Pattern	An abrupt change in monsoon could precipitate drought & flooding. Dry years are expected to be drier & wet years wetter	Improvement in hydro-meteorological system for weather forecast. Enforcement of Building Codes
3	Drought	Frequent drought may occur. Fall in crop yielding	Conservation of rain & ground water. Drought resistance crops to be practised.
4	Ground water	Ground water level may fall down	Judicious use of ground water. Improvement in irrigation, development of water harvesting techniques
5	Food Security	Seasonal water scarcity, rising temperature would threaten crop yielding, jeopardising the food security.	Crop diversification, more efficient water use, improved soil management practice & practice of drought resistance cropping system.
6	Energy security	Decrease in the flow of river can pose challenge to hydropower plants. Decrease in availability of water & increase in temperature will pose risk factor to thermal power generation.	Water conservation through dams.
7	Health	Malnutrition, Health disorder & increase of vector borne diseases	Awareness creation. Health consciousness
8	Migration	Climate change impacts on agriculture & livelihoods which lead to migration.	Food for Work should continue. Alternative source of livelihoods may be introduced.

7.11 Hazard specific mitigation measures: -

Table No 7.12

Sl no	Hazard Type	Structural mitigation measures	Non-structural measures
1	Flood	<ul style="list-style-type: none"> • Construction, maintenance & protection of flood control structures like embankment, ring bunds & raising of embankment • Construction of flood protection wall, guard wall & stone pitching at weak points. • Construction of safe shelters & mounds at high land. • Construction of Dams & Levees to be used as temporary storing space to reduce the chances of lower parts getting flooded. 	<ul style="list-style-type: none"> • Boats to be made available. • Awareness generation • Line listing of vulnerable pockets, persons/HH for evacuation, list of temporary shelters etc
2	Drought	<ul style="list-style-type: none"> • Construction of irrigation channels. • Construction of water harvesting structures. 	<ul style="list-style-type: none"> • Promote & support for rain water harvesting. • Awareness on judicious use of water resources • Undertake food for work programme • Promotion of drought resistance cropping.
3	Fire	<ul style="list-style-type: none"> • Establish fire stations • Maintain proper exits points in the building. • Prevent overheating & ignition from electrical faults. • Placement of fire extinguishers 	<ul style="list-style-type: none"> • Awareness on fire incidents • Organization of fire evacuation drills.
4	Whirl Wind/Hail Storm	<ul style="list-style-type: none"> •Construction of multipurpose shelters. •Repair of road, culverts & bridges for communication link •Drainage clearance •Availability of communication system 	<ul style="list-style-type: none"> • Awareness campaigning.

Humans have been adapting to their environment through the history by developing practices, culture & livelihoods suited to local conditions. Climate change raises the possibility that existing societies will experience climatic shifts. Everyone have to take prompt action to stop global warming otherwise the result would be irreversible. We must avoid such a tomorrow. Therefore, we should understand the climate change, educate key policy-makers and the public about the causes and potential consequences of climate change and to assist the communities in developing practical and effective solutions to this important environmental challenge.

Chapter- 8

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 (MDG) 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 person 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 understand 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. The survey conducted by SSEPD Department, Subarnpur reveals that there are 8942 number of persons are PWDs out of the total population of 610183 of this District. The PWDs constitute 1.46% of total population of Subarnapur District. Further, Mentally Retarded constitute 700 numbers with 0.114% of total population of Subarnapur.

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).

Table-8.1-Information on PWD

Information on Population Requiring Special Care										
Sl. No.	Block	No. of Gram Panchayat	No. of Village	Total No. of HHs	Total Population	No. of HHs Having by PWD	No. of Persons with Physical Disability (PWD)		No of persons with Mental disability	
							M	F	M	F
1	Binka	16	99	23327	91118	1365	1038	456	69	55
2	Birmaharajpur	15	182	23591	95398	1163	743	580	131	88
3	Dunguripali	26	112	31441	123838	1349	797	523	16	13
4	Sonepur	14	159	19348	80775	1180	825	386	72	34
5	Tarbha	21	184	20512	84974	1930	656	343	41	32
6	Ullunda	17	227	22352	89811	1062	907	388	88	35
7	Sonepur (Mun)	ULB	15 Ward	4448	30777	150	155	86	5	10
8	Binka NAC	ULB	12 Ward	3785	15765	230	161	85	3	1
9	Tarbha NAC	ULB	12 Ward	1934	8334	105	74	39	5	2
	TOTAL	109/3	963/39	150738	620790	8534	5356	2886	430	270

Table-8.2- Information on vulnerable women and children

Name of Block	No. of HHs headed by Women	Child Population		No. of Widow	No. of Orphans	
		0-5 Years	6-14 Years		Male	Female
Binka	2369	7074	9685	3449	65	54
Birmaharajpur	2132	9053	12062	3183	152	126
Dunguripali	3231	9344	13650	5178	61	50
Sonepur	2316	7112	11303	3012	88	90
Tarbha	1919	5036	8006	4935	138	142
Ullunda	2289	7339	10052	3419	73	64
Sonepur (Mun)	669	1752	2102	1570	13	10
Binka NAC	657	1311	1959	680	2	1
Tarbha NAC	153	510	843	826	26	21
TOTAL	15735	48531	69662	26252	618	558

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	Total No. of HHs	Total Population	No. of Aged Persons (60 and above)		No. of Pregnant and lactating mothers
						M	F	
1	Binka	16	99	23327	91118	5584	5768	1211
2	Birmaharajpur	15	182	23591	95429	4462	4412	1311
3	Dunguripali	26	112	31441	123838	7915	8252	1557
4	Sonepur	14	159	19348	80775	4580	4465	1389
5	Tarbha	21	184	20512	84374	5145	5005	1205
6	Ullunda	17	227	22352	89780	4958	4842	1329
7	Sonepur (Mun)	ULB	15 Ward	4448	20770	911	847	352
8	Binka NAC	ULB	12 Ward	3785	15765	1072	1091	204
9	Tarbha NAC	ULB	12 Ward	1934	8334	416	402	87
	TOTAL	109/3	963/39	150738	610183	35043	35084	8645

After compiling the database of the people who need special attention in the wake of a disaster, it is evident that focus must be given for the physically challenged & mental retarded persons at any disaster situation. Hence District Administration

has taken steps for taking care of them in any disaster incidents and planning has been made accordingly for the safety of PWDs.

- **Pre-Disaster:**

Identification of special needs of physically challenged and mentally challenged persons have been made through the Block Social Security Officers. They have been entrusted the safe evacuation of the PWDs with prioritization. District Social Security Officer will lead from the front. The frontline workers will be trained.

- **During Disaster:**

For appropriate relocation of the physically challenged and mentally challenged people in the Multipurpose Flood Shelter, an earmarked room has been kept with special facilities. Wheel chairs have been kept for them. In other identified safe shelters, the PWDs will be kept with special care. Necessary medical attention will be given to them during their stay in the shelters

- **Post disaster:**

The physically challenged and mentally challenged persons will be returned safely to their home with utmost care. Relief will be distributed giving priority to the PWDs. During the rehabilitation & restoration they will be in focus points.

Chapter – 9

SAFETY OF SCHOOLS & CHILD CARE INSTITUTIONS

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

School Safety is a major concern in the modern context. The school safety of the children covers the entire period which starts from coming home to school, entire study time & end with reaching home back. During this entire period the safety of the school children relies on the shoulder of the Head Master/Principal of the concerned school. The HM/Principal has to take all the initiatives & responsibilities for the safety of the students. Safety of Schools includes all the safety aspects to create a safe educational environment for the children. To create a safety environment for better & safe education of the children the fear for unwanted risk at the school premises as well as from the mind of the children should be abolished. Hence both structural & non-structural measures are to be taken into consideration.

Children are expected to spend majority of their time at school, safe schools attain very high importance with a view to ensure their safety and wellbeing. School Safety includes safety from large-scale 'natural' hazards of geological/ climatic origin, human-made risks, pandemics, violence as well as more frequent and smaller-scale fires, transportation and other related emergencies, and environmental threat that can adversely affect the lives of children. It draws attention to school children and youth with the aim of making the community at large more aware of the threat of hazards and become better prepared. National Disaster Management Authority has introduced the Guideline on Safety of Schools and its implementation will reduce the risk of any hazard in the school premises.

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 follow:

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

- Quarterly compliance reports from the Chief Secretary to MHRD and NDMA on the actions taken.

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

State & District Level	School Level:
Policy for safety audits in all schools 'Stability certificate' by Government certified engineer. Manual for fire safety procedures and other safety precautions The National Building Code of India, 2005, to construct fire-safe buildings. (Revised 2016)	Schools must take appropriate safety measures and an emergency response plan that delineates staff responsibilities, communication modes, and training and updating procedures for all members of the faculty, staff and students. Fire insurance coverage should be made mandatory for all schools. Ensuring that the kitchen in the precincts of the school has adequate safety mechanisms.

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.

9.2.1 Vision:

- i. The Guidelines stand for a vision of India where all children and their teachers, and other stakeholders in the school community are safe from any kind of preventable risks that may threaten their wellbeing during the pursuit of education.
- ii. 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.

9.2.2 Approach and Objectives

a. All hazard approach-

Natural as well as manmade, structural & non-structural hazards, visible & invisible risk that come on suddenly or develops gradually are need to be dealt with for the safety of all schools and all the stakeholders i.e students their teachers & parents. Natural hazard includes flood, earthquake etc and the manmade hazard includes fire accidents, road accidents etc. Structural factors include dilapidated buildings, poorly designed structures, faulty construction, poorly maintained infrastructure, loose building elements, etc. And 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.

b. Strengthening existing policy provisions to make schools safer:

- All existing and new infrastructure is resilient to locally relevant hazards through the design and construction processes must be ensured.
 - All development actions taken even in non-emergency times are designed with a view to ensuring their performance during emergencies.
 - Strengthening & capacity building of the existing institutions to take the responsibility of school safety planning & action.
- c. School Safety as an indicator of quality for continued planning, execution and monitoring ie development & adaptation of new methodology & approach.
- d. Primary objective is to ensure the creation of safe learning environment for children.
- e. Also seek to highlight specific actions towards school safety that can be undertaken by different stakeholders within the existing framework of delivery of education.

9.2.3 Applicability

- a. 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.
- b. They apply to all stakeholders involved in delivery of education to Children in India

9.2.4 National disaster Management act-2005

- This Act lays down the institutional, legal, financial & coordination mechanism for Disaster Management.
- Promotion of safety awareness among stakeholders including teacher & students.

9.2.5 National Policy on Disaster Management (NPDM)- 2009

- Highlights the need for structural & non-structural safeties in schools & educational institutions.
- Provision for designing the school buildings/hostels with earthquake resilient features & equip them with appropriate fire safety measures.
- Promotion of Disaster Management training in all educational institutions.
- Suggest for introduction of subject of Disaster Management in the curriculum.

9.2.6 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 fulfils the norms and standards specified in the schedule.
- One of the key standards is in relation to access to “all weather buildings”; in “areas with difficult terrain, risk of landslides, floods, lack of roads and in general, danger for young children in the approach...”

- the State Government / Local Authority shall locate the school in such a manner as to avoid such dangers”.
- The Act lays down the formation of the School Management Committee for planning of infrastructure and other requirements with respect to operational functioning of schools.
- The School Development Plan, as laid out by the Act, spells out the physical requirements of additional infrastructure and equipment to meet the norms spelt out in the schedule (in relation to all weather buildings).

9.2.7 Key Action Areas

1. Institutional strengthening at the State & District levels

- Co-opting senior officials of the Department of Education in SDMA and DDMA.
- Formation of School safety advisory Committees at District, Block & School level.
- 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

4. Disaster Management in Core Curriculum

Educational institutions are the factory for the production of social human beings. Educational institutions are not only rendering education for knowledge but also for the ultimate livelihood opportunity in future. Mere knowledge cannot help a person to solve all his problem always. Sometimes knowledge of skill helps the person to handle the problem & overcome it. Accordingly, for the management of Disaster that skill knowledge will help. Disaster management as a subject should be included in the curriculum of the study. The state Bard of Secondary Education & other institutions involved in curriculum development need to include age appropriate theoretical as well as practical knowledge on risk of disasters. The basics of disaster management both in theoretically & practically may be imparted in the class room for Disaster Risk Reduction. Practical training on health promotion, disease prevention concepts and health enhancing behaviour and life skills are to be imparted. For promotion of school Safety training is required to TOT of School Safety Focal Point Teachers, Principals, Teachers, School Management Committee & Peer Educators. Training contents should be chosen according to the targeted participants keeping school safety in view. Mock Drills & Awareness programmes have to be organised on School Safety.

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

Implementation of School Safety Policy 2016 introduced by NDMA suggests the constitution of School Safety Advisory committee (SSAC) in every school. This committee is entrusted to make policy for the development & safety of the schools. Every School has to prepare the School Disaster Management Plan in which all kind of safety measures for the school are incorporated. There will be many kinds of structural & non-structural risk in the school. Some new issues on risk & safety may arise time to time. Emergency equipment like fire extinguisher, alarm & First Aid kits etc are to be kept in the school.

Regular monitoring of risk & revision of School Safety Plan is very much essential from safety points of view. District Education Officer (DEO) personally or through the Block Education Officer (BEO) may monitor the whole process for the safety. DEO may reinforce the responsibility of school management to take prevention, mitigation, preparedness & response action with regard to safety of children & teachers. DEO has to verify & ensure all new schools/class rooms being constructed are disaster resilient & the old constructed buildings are in safe position and child friendly. DEO may instruct DIET to include school safety training in the curriculum for training of teachers. DEO may grant authorization to only those schools that comply & continue compliance with safety norms laid out in the building codes & directives of the Hon'ble Supreme Court of India in relation to safety of children. All the safety plans may be reviewed time to time. Safety audits should be conducted & the verification of emergency equipment may be conducted through the fire officer. Regular monitoring of the process may lead to the degree of safety.

9.3 Category & type of schools

Table No 9.1

Name of the Block	Government Schools				Government Aided School		Private School	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				
Binka	96	0	9	0	9	08	09	2
B.M.Pur	137	0	21	0	0	0	14	1
Dunguripali	112	0	16	0	8	12	13	0
Sonepur	115	0	4	0	0	10	10	4
Tarva	121	0	10	0	0	09	8	1
Ullunda	141	0	12	0	0	07	15	2
Binka NAC	0	15	0	2	1	0	5	2
Sonepur MPL	0	8	0	2	0	0	8	5
Tarva NAC	0	4	0	2	0	0	1	1
TOTAL	722	27	72	6	18	46	83	18

9.4 Category & type of students

Table No-9.2

Name of the Block	Government Schools				Government Aided School		Private School	
	Elementary		Secondary		Elementary	Secondary	Elementary	Secondary
	Rural	Urban	Rural	Urban				
Binka	8033	0	1238	0	269	879	614	213
B.M.Pur	6370	0	2936	0	00	00	1886	00
Dunguripali	11134	0	1725	0	212	1363	2678	00
Sonepur	8672	0	1656	0	00	1414	826	1603
Tarva	9058	0	4047	0	00	951	693	80
Ullunda	8093	0	3443	0	00	556	1234	56
Binka NAC	0	1288	0	372	41	00	1303	154
Sonepur M	0	933	0	740	0	0	1458	1685
Tarva NAC	0	163	0	713	00	00	173	349
TOTAL: -	51360	2299	15045	1825	522	5163	10865	4140

9.5 School Safety Advisory Committee (District & Block)

1. Date of Formation: 12.06.2019
2. Institutional Architecture

Table No-9.3

SI	Name & Designation	Contact No.	Email ID	Remarks
1	Ms. Anya Das, IAS, DM & Collector	7077010311	dm-sonepur@nic.in	Chairperson
2	Sri Yash Pratap Shrimal Superintendent of Police	9438916580	spsnp.orphol@nic.in	Co-Chairperson
3	Sri Sisir kanta Singh Asst. Fire Officer	9777274124	asst.fireofficersonepur@gmail.com	Member
4	Sri Achyutananda Singh District Welfare Officer	9348544779	dwosonepur@gmail.com	Member
5	Dr Durga Dutta Dash CDM&PHO	9439987555	cdmphosubarnapur@gmail.com	Member
6	Sri Tapan Kumar Padhan, SE RWS&S	9437451674	dwsn_snpr@nic.in	Member
7	Sri Damodar Kaibarta, SE R&B	9437158500	eepwdsnpr@gmail.com	Member
8	Miss Subhashree Rath Dist. Emergency Officer	8249800031	emgcoll.subarnapur@gmail.com	Member
9	Sri Arjun Majhi Dist Panchayat Officer	9437292575	dposubarnapur@gmail.com	Member
10	Prasanna Ku Sahoo Principal DIET	9861102923	drcsonepurprincipal@gmail.com	Member
11	Laxman Mishra, I/c BEO, Dist. HQ	7077447165	beosonepur.sme.od@nic.in	Member
12	Sri Laxman Bhoi DEO-Cum-DPC	9439394820	deosonepur29@gmail.com	Nodal Officer & Member Convener
13	Two NGO Personnel			Not Nominated

Block level SSAC:

Block level School Safety Advisory Committees have been formed in all six blocks of Subarnapur District.

Table No-9.4

SI	Name of Block	Date of Formation
1	Binka	12.06.2018
2	Birmaharajpur	16.05.2018
3	Dunguripali	21.05.2018
4	Sonepur	07.08.2018
5	Tarbha	23.06.2018
6	Ullunda	18.12.2020

9.6 Details of School Safety in the district**Table No- 9.5**

SI No	Activity	Total School	Achievement
1	Schools having School Safety Advisory Committee (Number)	992	462
2	Schools having Scholl Disaster management Plan (Number)	992	343
3	Schools having conducted Safety Audits (Structural) (Number)	992	162
b	Safety Audits (Non-Structural) (Number)	992	266
4	Schools having conducted Annual Mock Drills (Number)	992	34
5	Schools Having Fire Extinguisher (Number)	992	817
6	Schools Adhering to safety norms in storing inflammable & Toxic Material (Number)	992	326
7	Schools confirming safety standards as per local building bye-laws (Latest) (Number)	992	00
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)	992	32
9	Schools where students & teachers undergo regular training on School Safety & Disaster Preparedness (Number)	992	581
10	Schools where disaster management is being taught as part of the curriculum (Number)	992	589

9.7 Disaster management Education (School Safety and School Disaster Preparedness):**Table No-9.6**

Sl. No.	Name of the Programme	No. of Schools, Colleges and Other Educational institutions to be covered during the year	Time Line	Remarks
1	Awareness generation and mock drills for fire/ earth quake etc.	8 numbers of colleges. 15 numbers of School	July-Dec	Nearby College & school students will be congregated at one venue for a programme
2	Preparation of School Disaster Management Plan	250	July-Dec	

9.8 Role and Responsibility:

Table No-9.7

SL	Stakeholder	Activity
1	DDMA	To include Safety of School in the DDMP
		Provide technical support for preparation of School Disaster Management Plan in each school
		Co-opt senior officials of their department of Education at district level
		Establish a mechanism for monitoring safety parameters in all school
		Prepare block wise inventory of schools
		Organise Mock Drill on School Safety in all schools
2	District Education Officer	Ensure all schools include safety measures
		Ensure district level School Safety Advisory Committee
		Appoint technical agencies to advise school on local adaptation in school design on local condition focusing school safety
		Issue of Recognition Certificates to those schools comply the safety norms
		Review progress on non-structural safety measures in schools
		Evolve mechanism to monitor the safety parameters regularly in all schools
		Ensure formation of Block level SSAC & School level SSAC in all schools
		Regular capacity building of the teachers, SMCs & Parents.
Ensure Mock Drills conducted regularly in all schools		
3	DIET	Train the teachers on school Safety & disaster management.
4	HM/ Principals	Orient all teachers and students at the beginning of the session regarding the school safety plan
		Regular meeting with teachers and members of SMC
		Ensure display of the School Safety and Disaster Evacuation plan at prominent places in the school
		Regular health check-ups of students
5	Teachers	Adhere the curriculum on School Safety
		Take extra classes on school safety
		Prepare a healthy class room environment
		Highlight the strengths of every child & vigilant and observant about unusual behaviour and signs of stress or depression in students & discuss with parents.
6	Parents	Regularly attending the Parent Teacher Meetings
		Following guidelines circulated by the school from time to time on child safety and security
		Developing a friendly relationship with the child so as to have hesitation/fear-free dialogues
7	Students	Every student needs to follow the guidelines on the safety and security
		Act as peer support or peer educator for other students
		Stay physically active
8	R&B and RD Dept.	Provide the technical guidance for construction of disaster resilient buildings pertaining to NBC-2009
		Identification of dilapidated buildings
9	Health Dept/ CDM&PHO	CDM& PHO may direct all CHC &PHC to coordinate with the HM/Principal for health check-up of the students
		Organization of Awareness camp for health Tips & prevention of diseases

10	RWSS/PHD	Provision for supply of safe drinking water
		Guide for proper sanitation system
11	Dept of Fire	Inspection of the Fire safety measures taken in the schools
		Provide technical support for the regular verification of the fire extinguishers & other fire safety equipment
12	RTO	Verification of the feasibility & safety of the vehicles used by schools (If it is found not feasible, ban the permit)
13	SMC	Report to concerned authority about untoward incidents like physical/sexual violence, bullying etc & ensure non repetition of the incident.
		Ensure physical safety of school infrastructure
		Ensure quarterly inspection
		Conduct regular meeting & discussion on issues of school safety
14	NGO	NGOs may create awareness on School safety & disaster management

9.9 Child Care Institutions:

Children in need of care and protection include several categories of children with varying needs. Such children deserve to spend their days in well-designed environments that support their needs and stimulate their learning. Child Care Institution is a children home which provides care and protection to children, who are in need of such services; who are without parental care. Children who have deprived of social justice are also require to stay in child care institution. Child care institutions have been constituted to take care those children. The children are facilitated with all basic necessities like foods, sanitary items; bedding, cloths, books and other daily use items. The children are being facilitated with formal education in the nearby schools.

Three CCIs are existing in Subarnapur District. Out of three CCI two CCI are situated in the jurisdiction of Sonapur Municipality & another CCI is situated at Biseswarpali under Sonapur Block. These three CCIs are taking care about 81 numbers of children. The CCIs are running under the District Child Protection Unit, Subarnapur.

For the safety of the CCI & to save the children from any disaster, SOP should be implemented. For numbers fire extinguishers are available for preventing fire hazard. Some sand buckets are there for this purpose. No other fire safety equipment available in the CCI. Staff of CCIs have been trained on fire safety. Safe spaces for evacuation & alternative safe shelters have been identified for temporary living.

9.10 Principles to be maintained in the CCI:

- (i) **Principle of presumption of innocence:** A Child in child care institute should be assumed as innocent.
- (ii) **Principle of dignity and worth:** A child, in child care institute should be treated with dignity and should be treated equally irrespective of sex, caste, color, religion, etc.
- (iii) **Principle of participation:** A child in child care institute should have right to participation in each and every decision related to him/her.
- (iv) **Principle of best interest:** The decision regarding the child in child care institute should be based upon the best interest of the child.

- (v) **Principle of family responsibility:** The child in child care institute must be taken care of the fact that the best care and the responsibility lies with the family of the child
- (vi) **Principle of safety:** Each child in the childcare institute must ensure that he/she may not be maltreated or abused by any of the staffs in the institute.
- (vii) **Positive measures:** The Child Welfare officer and the staff must ensure that the child have every opportunity to develop and grow in the enabling environment.
- (viii) **Principle of no stigmatizing semantics:** The child should be treated with dignity and should not be stigmatized.
- (ix) **Principle of nonwaiver of rights:** The child's right should not be waived off in any circumstances.
- (x) **Principle of equality and nondiscrimination:** While dealing with children in child care institute, the treatment given to the child should be no discriminating.
- (xi) **Principle of right to privacy and confidentiality:** Every child has right to privacy and his case should be kept confidential and should not be disclosed with other staff members of the child care institute
- (xii) **Principle of institutionalization as a measure of last resort:** Before placing the child in the institution, the agency and the care givers should make ensure that institution should be the last option for the child.
- (xiii) **Principle of repatriation and restoration:** The Child Welfare Officer should make ensure that the children coming under the missing category should be re-united with the family as soon as possible. The efforts should be made to trace the family.

Table No-9.8 Details of Child Care Institutions exist in Subarnapur District

SL NO	Name of the CCI	Address	Block	Total no of Children/inmates	If any type of differently abled inmates mention type of disabilities	Managed By	Contact person	Contact No
1	Children Home	At- Majhipada Po- Sonapur Dist- Subarnapur	Sonapur	47	No	District Administration	Malati Jena	77508 43253
2	Bhima Bhoi Sisu Sadana, Biswearpali	At-Biseswarpali Po- Matia pali Dist- Subarnapur	Sonapur	29	No	Bhima Bhoi Anathasram	Sadhu Pranabanda Das	96680 04772
3	SAA, Subarnapur	At-Talikhapada Near Patabhadi Po- Sonapur Dist- Subarnapur	Sonapur	5	Yes	Juba Jyoti Jubak Sangha	Sumanta Jayapuria	80180 64117

Sl No.	District	Name and Address of the Organization	Boys	Girls	Total No of Children	Name and Contact no. of the Shift-in-Charge	No of Fire Safety Equipment available (Fire Extinguisher, Alarm)	Staff Training on Fire Safety Equipment	Nearby open space for evacuation	Alternative Shelters
--------	----------	--------------------------------------	------	-------	----------------------	---	--	---	----------------------------------	----------------------

1	Subarnapur	Children Home Subarnapur At- Majhipada, Po- Sonapur Dist- Subarnapur	27	20	47	Malati Jena 7750843253	02	5	Open Road	No
2		Bhima Bhoi Sisu Sadana, At-Biseswarpali, Po- Matia pali Dist-Subarnapur	13	16	29	Sadhu Pranabananda Das 9668004772	01	5	Own Available Space	No
3		SAA, At- Talikolha Pada Near Patabhadi Po- Sonapur Dist-Subarnapur	4	1	5	Sumanta Jayapuria 8018064117	01	6	Own Available Space	No

Chapter- 10

Chemical (Industrial), Nuclear and Radiological Disaster

A. Chemical (Industrial) Disaster:

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

A critical analysis of the lessons learnt from major chemical accidents exhibited various deficiencies. Laxity towards safety measures, no conformation to technological 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. In Subarnapur District 34 numbers of small-scale industries like paddy processing units/rice mills are functioning. One spinning mill has been closed since a long period. Newly an Ethanol/motor fuel manufacturing unit namely M/s Mash Bio-Fuels Pvt Ltd has been set up at Panimura of Tarbha Block. Ethanol can create chemical as well as biological hazard. Further, road accident of tankers carrying chemicals cannot be avoided. Subarnapur District is very less vulnerable to any chemical disaster. District Administration is always watchful to handle such kind of hazard.

10.1 Factories or Storage Unit Details of the District:

M/s. Mash Bio-Fuels Pvt. Ltd. is set up at Village-Panimura Jungle, PO-Tarbah of Subarnapur district of Odisha. With 550KL per day production capacity, it is one of the leading manufacturers of Ethanol/Motor Fuel in India. The plant has adopted indigenous process of fermenting to produce grain-based Ethanol from rice husk. Grain based Ethanol production being a new industrial sector in India, Mash Bio-Fuels Pvt. Ltd. aims to lead and excel in this market segment in near future. Use of modern technology permits wide range of options in selecting the raw materials like Rice, Barley, Sorghum, Maize, Bajra and similar other Cereals, tubers like Cassava, Tapioca & beetroots etc. Along with this the plant produces ENA (Extra Neutral Alcohol), CO₂, Impure Spirit, Fusel Oil and DDGS (Distillers Dry Grain Soluble) for cattle feed. It also consists of a 9MW power plant with zero waste discharge to fulfill its own need of electricity.

10.2 Hazardous Chemical Storage Details:

Table no 10.1

Name of industry	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
Mash Bio Fuels Pvt. Ltd.	Large scale	Ethanol 360 klpd extended to 550 klpd.	At-panimura jungle, po-Badbhainro, Block-Tarbha, District-Subarnapur	20°43'24" 83°44'25"	Uma Shankar Verma	GM Project & Operation	umashankar.mbfpl@gmail.com	9542521008

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

There are no critical Facilities/Infrastructure situated within close proximity of the Factories/ Industries or Chemical Storage Points.

10.4 Statutory Compliance of the Factories/Industries

Statutory Compliance			
Organisation Name	Status of licence under different Acts/Rules	Status of Safety & Health Policy	Safety Management System
Mash Bio Fuel Pvt. Ltd.	Obtained as per Factories Act, 1948 & Orissa Factories Rules	Submitted to Directorate/ Asst. Director Factories & Boilers, Odisha Bhubaneswar during registration & grant of licence (FC-3) online	Periodical Inspection by Asst. Director, Factories & Boilers, Bolangir
			Safety certificates of boilers.

10.5 Nearest Fire Station & Hospital Details of the Factories:

No hospital is near the close proximity of the rice mills. The PHC/CHC of that block is the nearest hospital.

Table no 10.2: Fire Station Details

Fire Stations Details									
Organisation Name	Area fire station name	City	Pin code	Lat-long	Fire Officer Name	Fire Officer Designation	Fire Officer Email-id	Fire Officer Mobile Number	Facilities Available
Mash Bio-Fuels Pvt. Ltd	Tarbha Fire Station	Tarbha	767 016	20°73'4929" 83.67'5259"	Anil ku. Mishra	Station Officer	anilkumarmishrafire@gmail.com	8280166 479	All fire-fighting equipment

Table no 10.3: Hospital Details

Hospital Details									
Organisation Name	Nearest Hospitals (Govt/Private) Name	Hospital Address	City	Pin Code	Lat-long	Chief Medical Officer / Hospital Superintendent/ MO Name	Hospital Superintendent Mobile Number	Hospital Superintendent Email	Infrastructural Facilities
Mash Bio-Fuels Pvt. Ltd	CHC Tarbha	Tarbha	Tarbha	7670 16	20.72822 83.67873	Kshirod Ku Mishra	943711 9494	bpmutarvachc1@gmail.com	

10.6 Stakeholders to be informed in case of an Industrial/chemical Accident

Designation	Organisation/ Department name	Name	Mobile Number	Office Phone	Email
Nodal Officer, Controlling Officer, Supervising Officer	SRC	Padmanabh Behera	824914 1558		srcodishagov @gmail.com
DGM, OSDMA	OSDMA	Sunil Ku Sahoo	700824 7745		osdma@osd ma.org
District Emergency Officer, Subarnapur	Revenue & DM	Subhashre e Rath	8280191 246	066542 91374	emgcoll.subar napur@gmail. com
Superintendent of Police, Subarnapur	Home department	Yash Pratap Shrimal	943891 6580	066542 20349	spsnp.orpol@ nic.in
Regional Officer, PCB, Sambalpur	State pollution control board	Ramesh Ch. Ekka	943722 1216		rospcb.samba lpur@ospcb board.org
RTO, Subarnapur	Transport & Commerce	Akshya Ku Jena	637093 6718	066542 20555	rto_sonepur @yahoo.com
Asst. Director, factories & Boilers, Bolangir	Department of Factories and Boiler	Swadhin Ku Behera	993718 6586		factblrs.bolan girzone@gmai l.com
CSO, Subarnapur	Civil Supply	Suresh Panigrahi	943820 0059	066542 20290	sonepurcso@ gmail.com
Commandant, 3 rd Battalion, Muduli, Cuttack	NDRF	Jacob Kispotta	9437581 614	067128 79710	ori03- ndrf@nic.in
Commandant 5 th IRBN, Boudh	ODRAF	Durbasa Naik	943710 9404	068412 22238	comdt5thirbn. odpol@nic.in
Sec-JAWARD, Birmaharajpur	NGO	Sri Laba kumar Meher	9938789 272		jawardlkm@g mail.com
Asst. F.O, Sonepur	FIRE	Sri Kabi Seth	7008645 035	066542 20222	asst.fireofficers onepur@gmail. com
	Oil Industries (HPCL, BPCL, IOCL)		8118052 770, 9238114 321	180034 5757	

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.

Particularly, no Nuclear/Radiological set up is in Subarnapur District. Hence the chances of Nuclear/Radiological emergencies in this district may not arise.

10.7 Hospital Preparedness

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 trained medical staffs being maintained	Name, Designation and Contact Details of the Nodal Officer
1	DHH, Subarnapur	NIL	NIL	NIL	NIL	NIL	-

10.8 Specialized Response Forces

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
1	5 th IRBn, Boudh	44	44	Sri Durbasa Naik	9437109404
2	NDRF 3 rd Battalion, Munduli Cuttack	-	-	Sh. Jacob Kispotta	9437581614 06712879710

10.9 Mock Exercises on Nuclear/Radiological Disaster

Sl No.	During	Stakeholders to be Involved	Process to be followed	Details of the Nodal Officers for the ME
	No Mock Drill requires as no nuclear/radiological set up in Subarnapur District			

Chapter-11

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	CDM&PHO	9439987555
2	Bio Terrorism/ War	Home Department	Superintendent of Police	9438916580
3	Animal Health Disaster	F&ARD Department	CDVO	9437074571
4	Agro - Terrorism	A&FE Department	CDAO	9937981009

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

SI No	Member	Department/ Institution	Contact Details
1	DM & Collector, Subarnapur	Revenue	7077010311
2	Superintendent of Police, Subarnapur	Home	9438916580
3	CDM & PHO, Subarnapur	Health	9439987555
4	CDO-cum-EO, ZP, Subarnapur	PR & DW	9437420164
5	DSSO, Subarnapur	SSEPD	9437223574
6	CDAO, Subarnapur	F & ARD	9937981009
7	CDVO, Subarnapur	A & FE	9437074571

Table 11.3 Task Force (Collect Table data from all Blocks BPMU)

SL	Member	Dept./Instt.	Contact Details
1	Dr Samira Bhoi, Superintendent	CHC Ullunda	9178132036
2	Dr Biswanath Meher, Medical Officer (Ayush)		9437430870
3	Nabakrushna Meher, Pharmacist		9938229246
4	Dr. Manaranjan Panda, MO	PHC Jaloi	7008163756
5	Jitendra Kumar Chand, HW (M)		7978868211
6	Bipin Sahu, Attendant		9938846176
7	Aditya Sritam Rout,	PHC, Kotsamalai	9078645642
8	Medical Officer		9937331795
9	Srabana Nanda, HW (M)		
10	Dr Om Prakash Kalta,	PHC, Sindhol	7751837945
11	Medical Officer		9938321951
12	Dr Dillip Kumar Pandia,		7077395020
13	Medical Officer (Ayush)		
14	Abinash Singh, Pharmacist	SDH, Birmaharajpur	9439987725
15	Dr.Pranab Kumar Mahapatra		9439987641
16	P.Dehuri(HW)M		9937672925
17	UdayanathDehury	PHC Mursundi	9861231257
18	Dr ShibanandaChaulia		9439987654
19	GiridhariSahu HW(M)		9583827994
20	RajibSahu, Pharmacist		

21	Dr.Lipun Kumar Padhan		8984061835	
22	Santosh Kumar Das I/c MPHS	PHC Subalaya	9439987727	
23	DebidattaSahu HW(M)		7735787678	
24	Dr.Monalisha Murmu		PHC Hariharjor	6371686265
25	DibakaraPani Pharmacist	9439987639		
26	Dr.Amit Kumar Muduli	MHT, Birmaharajpur	7978644182	
27	SasmitaPurohit		8895229392	
28	Dr. Rabindranath Panda, MO	CHC Dunguripali	7894019279	
29	Dr. Sanjay.Kumar. Padhan,		9437273409	
30	Sri Rabindra Mohanty, Pharmacist,		9938312265	
31	Dr. Ashish Goyal, MO AYUSH,		9861286636	
32	Anupama Sahu, Pharmacist		7008246932	
33	Bina Samal, ANM, MHT-1		9556177494	
34	Dr. Sushree Pati MO AYUSH,		8339066305	
35	Sri Harihar Padhan, Pharmacist		8327765248	
36	Dr. Alokranjan Panda, MO AYUSH		9437347245	
37	Sri Prakash Sahu, MPH(M),		9439987524	
38	Dr. Sarita Dash, MO AYUSH,		9438306236	
39	Chinmaya Padhan, Pharmacist,		9938004546	
40	Dr. Sarita Dash, MO AYUSH,		9438306236	
41	Dr. Ananda Meher, MO AYUSH		7008420279	
42	Sri Gaura Bariha, MPHS(M)		9439987208	
43	Dr. Suraj Chaudhary, MO AYUSH		8249698588	
44	Durgaprasad Singh, MPH(M),		9439987521	
45	Dr. Kshamanidhi Sahu MO AYUSH		9937387541	
46	Sri Harischandra Suna, MPHS(M)		9439987204	
47	Dr. Kailash Meher MO AYUSH		9348560845	
48	Ramkrishna Meher, MPH(M)		8249418725	
49	Dr. Gayatri Purohit MO AYUSH		9439987683	
50	Sri Dukhishyam Mahaling, MPHS(M),		9439987515	
51	Dr. Swastika Devi MO AYUSH		9439987634	
52	Kambhupani Sahu, Pharmacist		9777553610	
53	Dr. Prakash mahanty, MO AYUSH		Bankigiridi PHC	9777083641
54	Sunil Sahu, Pharmacist			9937523916
55	Dr. Arnapurna Mahapatra		CHC Binka	9556641121
56	Dr. Satyanarayan Panigrahi			9777141918
57	Prakash Mahakud, Pharmacist			9439987601
58	Dr. Bikash Ranjan Baboo, MO Ayush MHT-1,		PHC Mahadevpali	9439277010
59	Dr. Swarnamayee Gadtia, Mo Ayush MHT-1,	7656950654		
60	Neerabati Biswal, ANM MHT-1,	7978673288		
61	Dr.Geetanjali Mishra, MO Ayush	PHC Sankara	9439987709	
62	Sarada Sahu		9861819621	
63	Dr Pramod Kumar Meher, AYUSH MO	CHC Naikenpali	7978733530	
64	Nabakrushna Meher, Pharmacist		9938229246	

65	Santanu Meher, MPHS(M)		9439987191
66	Dr Manas Kumar Nayak, MO MHU	PHC Lachhipur	8763185306
67	Prasanta Sahu, Pharmacist		6371391208
68	Saroj Gan, MPHS(M)		8457045149
69	Dr P.K.Dash, AYUSH MO	PHC Hardokhol	9556551785
70	Jagdish Dash, Pharmacist		9937029437
71	Simanchal Dash, MPHS(M)		9439987176
72	Dr. Pradip Kumar Pradhan, MO Ayush	CHC Tarbha	7077686610
73	Dr. Gyatri Patajoshi, MO Ayush		9438247146
74	Ramakanta Bhoi, Pharmacist		7008523268
75	Dr. Priyadarshini Puja Panda, MO Ayush		7749085250
76	Subodha Pattanaik, Pharmacist		8018683780
77	Dr Premananda Meher, (MO) Charibhata		8847883191
78	Manoj Kumar Majhi, MPHS(M)		9439987556
79	Dr. Sabyasachi Sahoo, (MO) Menda		8456069734
80	Dr. Brundabana Meher, Mo Ayush Menda		9938396212
81	Karuna Sahu, MPHS(M)		9439987558
82	Dr. Khirodra Kumar Mishra		7978310045
83	Dr. Anwesa Dash		7978185284
84	Sri Pradeep Kumar Bishi, Pharmacist		9439987559
85	Tapash Ranjan Panda, PHEO		9439987535
86	Debendra Kumar Meher, Senior helper		9658663361
87	Dr. Manoj Kumar Adabar, DPHO		DHH, SNP
88	Dr Ramesh Chandra Swain ADPHO(DC)	9439987672	
89	Dr Dharanidhar Singh. Sr Epidemiologist	9040569116	
90	Sri Subrat Ku. Panigrahi, DM-IDSP	9861841566	
91	Suchismita Sahu	7855050860	
92	Ballari Dash	8984866161	
93	Pramod Kumar Sahu (MPHS)	7008445190	
94	Narayan Rath	8249035603	

Table 11.4 Technical Experts

SL	Member	Dept./Instt.	Contact Details
1	Dr..Jitaram Bid	Medicine	9437185998
2	Dr.Durgadutta Dash	Surgery	9437240734
3	Dr.. Nandakishor Naik	Paediatric	9437206875
4	Dr. Subas Chandra Panda	General	9583120564 7008294263
5	Dr. Tribikram Pandia	General	9937731067
6	Dr Dharanidhar Singh	Epidemiologist	9040569116
7	Mrs. Suchismita Sahoo	Microbiologist	7855050860
8	Mrs. Ballari Dash	Microbiologist	8984866161

- 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 no- 11.5 Nodal Public Health Institution (Data from DDM / Hospital Mngr)

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
DHH, Sonepur	25	44	Bed-21	Ambulance-2 Oxygen -53 nos.

Table no- 11.6 Collaborative Institutions

Name of the NGO/CSO/ Private Sector	Expertise	Contact Person	Contact Details (Number & Email ID)	Address
RARE	Counselling	Sri Anang Negi	9937618884 raresonepur@hotmail.com	Dhobamunda, Kalapathar, Sonepur
PRAYAS	Counselling	Sri Bhabani sankar Panda	7750853292 prayassonepur@gmail.com	Kamsara, Tarbha, Subarnapur
JubajyotiJubak Sangha	Counselling	Sri Jaichand Singh	9437153132 jubajyoti@gmail.com	Sonepur Subarnapur
JAWARD	Counselling	Sri Laba kumar Meher	9938789272 jawardlkm@gmail.com	Kendupali Birmaharajpur

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 disaster response plan
- Pre-exposure immunisation (preventive, if available any) of first responders against anthrax and smallpox must be done to enable them to help victims' post-exposure.

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

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

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 No 11.8 Infrastructure that can be used as quarantine centres

SI	Infrastructure/ Institution Type	Dept./Instt.	Contact person with contact Details
	DHH	Health Department	9437240734

On outbreak of Biological Disaster, the buildings of Educational Institutions and other Government buildings will be recusation for use as quarantine centre.

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 VHFs are spread readily from person to person by aerosols and require more than standard infection control precautions (gowns, masks with eye shields, and gloves).
- The suspected victims and those who have been in contact with them will be advised to follow simple public health measures such as using masks/ handkerchief tied over the nose and mouth, frequent washing of hands, staying away from other people by at least a metre, etc.
- To handle biological disasters, a hospital DM plan will have the following facilities:
 - Medical and paramedical staff: It is important to train medical staff and paramedics properly in universal safety precautions, use of PPE, communication, triage, barrier nursing, and collection and dispatch of biological samples. A team of specialists must be made available to handle infectious diseases affecting various body systems and they will be suitably immunised against agents such as anthrax and smallpox.
 - Expansion of casualty area: If the hospital casualty ward is unable to accommodate a large number of casualties, provision will be made to use the patients' waiting hall, duly reoriented, to receive the casualties. Each major hospital will cater to at least 50 additional patients at times of disaster.
 - Isolation wards: Adequate number of isolation wards are required to be planned with surge capacity to accommodate a large number of patients of infective disease. If required, side rooms, seminar rooms, other halls can be improvised for this purpose.
 - Security arrangements: Hospital security staff will prepare SOPs to prevent overcrowding of hospitals by visitors, relatives, VIPs, and the media at the time of a disaster. Help of the district administration will be sought, if required.
 - Identification of patients: The process will start at the time of giving first aid and triage. A system of labelling and identifying patients during spot registration by giving a serial number to the patient and putting an identification tag around the wrist can be done. In mass casualties, it can be supplemented by giving colour coded tags, such as red for serious patients, yellow for moderately serious patients, blue for those in need of observation and black for the dead.

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

Table 11.9 (Data from DDM / Hospital Mngr)

Sl	Facility	Unit	Existing Capacity	Extension Capacity	Remarks
1	Medical Staff	152	79	-	
2	Paramedical Staff	417	278	-	
3	Specialists	53	28	-	
4	Technical experts	53	28	-	
5	Casualty Section	1	1	-	
6	Isolation wards	1		-	
7	Security arrangement	1		-	
8	Diagnostics Services	1	1	-	
9	Medical Supplies			-	
10	Blood Bank Services	1		-	
11	Mortuary	1	1	-	
12	Other logistics			-	

- **Mobile Hospitals and Mobile Teams**

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

- To be mobilised to the disaster site for management of cases at times of any epidemic outbreak or biological disaster.
- Provide on-site medical treatment to casualties as per triage and evacuation guidelines. The teams will also make a complete assessment of the situation and transmit information to the appropriate authorities.
- Additional medical teams will be mobilised to assist in handling the large number of casualties in the wake of a mass casualty event.
- Adequate stock of medical stores, including essential drugs, will be stocked and made available to the medical teams.
- The stocking of emergency medical stores shall be done by the state government. Brick of medical stocks capable of treating 25/50/100 casualties will be kept ready to move with mobile units at short notice.
- Drills will be conducted at regular intervals by mobile hospitals and mobile teams to keep them in a functional mode at all times.

Table 11.10 Mobile Hospitals & Health Teams (Data from DDM / Hospital Manager)

SI	Mobile Hospitals & Health Teams	Nodal Person	Contact Details
	7 Number	Dr Daitya Narayan Padhee (ADMO &FW)	9178419345

- **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 (Data from PHarmacy/ Central Drug Store)

SI	Medicine/Drugs	Actual Requirement	Present availability
	Medicines like Paracetamol, Chloroquine, Metronidazole, Azithromycin and Medicine for Malaria, TB Diarrhoea, Typhoid/ Jaundice, Flu, Chicken pox etc	Now it is sufficient	All types of medicines & vaccines are plentifully available at DHH & other health institutions.

- **Public Health Issues**

- Panic is a critical element in a disaster and, therefore, DM plans will address measures to allay public anxiety and fear arising out of Bio Terrorisms.
- Availability of safe food, clean water, and minimum standards of hygiene and sanitation will be ensured. Vulnerable groups such as children, pregnant women, the aged and patients suffering from diseases like HIV/AIDS will be given special attention.
- The routine training of medical undergraduates, nurses and health workers for mental health services is grossly inadequate. There is virtually no emphasis on the mental health aspects of disasters even in the routine postgraduate training in psychiatry. There is a need for coordinated training services and monitoring at the district and state levels.
- Most victims at the scene of a disaster suffer from psycho-social problems. Some people, including relief workers, may develop post-traumatic stress disorders. The plan will involve community level social workers who can help victims of psychosocial problems.
- Complete ban on the press or media is not the right approach in such circumstances. The media is very useful for disseminating proper information and educating the community during a disaster.

- **Emergency Medical Response**

A biological disaster can lead to mass casualty incidences, both intentional or otherwise. The development of infectious diseases depends on various factors such as type of agents, incubation period, immune status of individuals, amount of infectious agent entering the body, etc. However, a large number of cases arising in a short span of time may require prompt establishment of medical posts near the incident site. They would triage the patient, provide basic life-support if require 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 logistics 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 warrant 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
Dr Ramesh Chandra Swain	1	30	nil	Nil

Table-11.13-Collaborative Institutions

Name of NGO/ CSO/ Private Sector	Expertise	Contact Person	Contact Details (Number & Email ID)	Address
RARE	Counselling	Sri Anang Negi	9937618884 raresonepur@hotmail.com	Dhobamunda, Kalapathar Sonapur
PRAYAS	Counselling	Sri Bhabanisankar Panda	7750853292 prayassonepur@gmail.com	Kamsara, Tarbha, Subarnapur
JubajyotiJubak Sangha	Counselling	Sri Jaichand Singh	9437153132 jubajyoti@gmail.com	Sonepur Subarnapur
JAWARD	Counselling	Sri Labakumar Meher	9938789272 jawardlkm@gmail.com	Kendupali Birmaharajpur Subarnapur

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
NIL	-	-	-	-

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. 	<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.

<ul style="list-style-type: none"> • For instance, obtaining information or developing effective survival skills. 	<ul style="list-style-type: none"> • 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, eroism, Solidarity, Optimism
Honeymoon	2 weeks to 3 to 6 months	Great solidarity, Eagerness to rebuild, Sharing of common experience
Disillusionment	2months to 2 years	Withdrawal, Loneliness, Anger, frustration, Community disorganization, Negativity, Hostility, Impulsiveness, Violence, Alcohol and drug abuse
Reconstruction	2-5 years and Lifetime	Acceptance of losses Realistic assessment of the situation, Search for alternatives to rebuild lives

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

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
Anxiety Guilt Embarrassment Depression Hurt Jealousy Feel like dying Cry frequently Moody	Cannot keep relationships Suspicious Gossip Competitive Withdraw Fearful and unassertive Aggressive	Heart rate Headaches Nausea Aches and pain Tremble Fainting Numbness Dry mouth Stomach cramps	Digestion problems Blood pressure Heart problems Tiredness Allergies Low immunity	Substance dependence Sleep problems Tea smoking Restless Eating problems Aggression Irritation	I must do well Life should not be like this I must have what I want

		Sweaty Indigestion	Mental problems	Speech problems Accident prone Eat, talk, walk faster Unkempt and untidy Low productivity Bad time management	This is terrible I cannot take this any longer Everyone should like me Working long hours » Not getting time to relax and take care of personal issues » Not able to contact the family members » The weather in the area etc
--	--	-----------------------	--------------------	--	--

Diverse Stress Responses
Table 11.20

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

<ul style="list-style-type: none"> » Change in content of thinking » Low creativity and change in performance » Less ability to utilise relevant information 			<ul style="list-style-type: none"> » Butterfly sensation in the stomach
---	--	--	--

Relaxation Exercises

Table 11.21

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

**Disaster Psychosocial Referrals
Table-11.22**

<p>Within Caregiver's Control if the Survivor: » Is aware of who s/he is, where s/he is, and what has happened with him/her. » Is only slightly confused or dazed or show slight difficulty in thinking and decision making or finding difficulty in concentrating</p>	<p>Referral if the Survivor: » Is unable to tell/recall his/her name, name of the place and what has happened to him/her in past 24 hours » Complains about what is happening with him/her</p>
Behaviour	
<p>Is restless, mildly agitated and excited » Has sleep difficulty and decreased appetite » Sad, rigid, clenches the fists</p>	<p>Is apathetic, immobile and unable to move around » Is withdrawn and mutilates himself/herself, does not take care of self » Violent and causes harm to others » Uses alcohol or drugs » Repeats ritualistic acts as compulsions</p>
Emotions	
<p>Within Care giver's Control if the Survivor » Is crying and weeping consistently by reiterating about the incident » Has blunt emotions, is numb and hardly reacts correctly to his/her environment » Easily irritated and angered over trivial issues » Shows high spirits or laugh excessively » Very quiet with no emotions</p>	<p>Consider Referral if the Survivor » Is unable to be aroused and is completely withdrawn » Is excessively emotional and shows inappropriate emotions » Is excessively happy, or sad and depressed</p>
Perception	
<p>Has all senses intact and has no perceptual disturbance, like seeing the ghosts of those expired</p>	<p>Hears voices in absence of the actual living organism » Sees things in absence of any living organisms' existence » Has complaints about vague bodily sensations » Takes a constant peculiar body position for days together</p>
<p>Within Care giver's Control if the Survivor » Talks excessively about the disaster » Refuse to talk much » Has rapid or stammered speech</p>	<p>Consider Referral if the Survivor » Is talking irrelevant » Shows overflowing of incoherent speech » Does not talk at all for days together</p>
Thought	
<p>Has a feeling of despair and worthlessness</p>	<p>Is excessively preoccupied with one idea or thought</p>

<p>» 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>	<p>» 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</p>
---	---

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

Chapter – 12

CAPACITY BUILDING MEASURES:

12.1 Approach

Developing a DDMP without building capacity or raising awareness amongst stakeholders can't be 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 Govt. Officials, PRI Members etc.:

Capacity Building program for both Govt and non-govt stakeholders are to be funded out of funds available under different schemes at the district level, for capacity building activities. Besides, funds are also available under State Disaster Response Fund (SDRF). District Administration to prepare the Capacity Building plan for the district and send the same with detailed budget to SDMA for necessary funding.

12.2.1 Capacity Building Program

Table No- 12.1 Indicative list of training programmes 2024-25

Sl No	Training Course	Participants	Total No of trainees	No of participants in a batch	No of batch to be trained	Month of organization	Duration	Level of training	Tentative Expenditure per participant (In ₹)	Fund requirement (In ₹)
1	Search & Rescue	Task Force members of VDMCs	600	50	12	March - April	5 Day	Block level	2820/-	16,92,000/-
2	Preparation of Departmental DM Plan	District & Block level Officers/Line Depts	50	50	1	March	1 Day	District Level	400/-	20,000/-
3	First Aid	Task Force members of VDMCs	600	50	12	May-June	2 Day	Block level	1310/-	7,86,000/-
4	Role of PRIs in Disaster Management	ZP, PS member, Sarpanches & councillors	270	30-50	6	June	1 Day	Block level	400/-	1,08,100/-
5	Role of NGOs &	BDOs, RTO,	40	40	1	June	1 Day	District Level	400/-	16,000/-

	CBOs in Disaster Management	Police personnel, NGO & CBO representatives								
6	Shelter Management	Task Force members of VDMCs	600	50	12	July-Aug	1 Day	GP level	400/-	2,40,000/-
7	Workshop on Incidence Response System	Heads of Line Departments/ Fire	40	40	1	August	1 Day	District Level	400/-	16,000/-
8	Management of Drought & Pest Attack	AAOs, BAOs, VAWs & Krushak Sathies	30	30	1	August	1 Day	District Level	400/-	12,000/-
9	Post Disaster Need Assessment	TDR, RIs AE & JEs of Block & Statistical officer	30	30	1	September	1 Day	District Level	400/-	12,000/-
10	Role of Media in Disaster Management	Print & Electronic media personnel	30	30	1	October	1 Day	District Level	400/-	12,000/-
11	School Safety	Principal & HMs	992	45-50	20	November	1 Day	Block Level	400/-	3,96,800/-
12	Search & rescue (refresher)	Shelter Task Force volunteers	150	25	6	Nov	5 days	Shelter	2820/-	4,23,000/-
13	First Aid (Refresher)	do	150	25	6	Dec	2 days	Shelter	1310/-	1,96,500/-
14	CBDM (refresher)	FSMMC members	150	25	6	June	4 days	Shelter	2565/-	3,84,750
									Total	43,15,150/-

AWARENESS PROGRAM										
Sl No	Content of Awareness	Participants	Venue for organization	To be conducted by	Average No of participants	No of batches	Month of organization	Duration	Fund requirement (In ₹)	
1	Snakebite/ Lightning/ Drowning/ HW/Fire Safety	Villagers/ students	Villages/ Schools/ Colleges	Dist. Health Dept/ Fire Service	100	90 (All six Blocks)	November to December	2 Hours	2,25,000/-	

12.3 District/ Block level Mock Drills:**Table No-12.2**

Sl. No.	Type of Mock Drill	Officials/ Institutions to be involved	Month/ Date	Remarks
1	Flood	BDOs, FSMCs, PRI members, community members, block level field offices, fire services, ODRAF, Police, NSS etc	19 th June	At District/ Block/ FSMMC Level
2	Fire Accidents	CDM&PHO, GED, TPWODL, fire services	March, November	At DHH
		BDOs, fire services, PRI members, WESCO, community members.	March	At Block level
3	Mock Drills on School safety (FAMEX)	School & College students	Throughout the year	As per the instruction of OSDMA

12.4 Community Capacity Building and Community Based Disaster Management:

Table no-12.3

Sl. No.	Block Name	No. of vulnerable villages to be covered during 2024-25	No. of VDMC and task force member to be oriented	No. NGOs to be involved	Time line	Remarks
1	Tarbha	120	120 nos of VDMC 600 Task Force Members	04	March - June	

12.5 Capacity building of Flood Shelter Maintenance & Management Committee and Task Force members:**Table No-12.4**

Sl. No.	Name of the Course/ Training	Participants	No of Participants	Duration of the Training Programme	Month of Organization	To be Organized by	Resource Person to be hired from	Remarks if any
1.	Training on Search & Rescue	FSMMC & Task Force members (DMT)	150	5 days	November	DDMA	ODRAF Boudh/ Civil Defence	In 6 Shelters
2	Training on First Aid	FSMMC & Task Force members (DMT)	150	2 days	Dec	BDO	ODRAF Boudh/ Civil Defence	In 6 Shelters
3	Shelter Management	FSMMC & Task Force members (DMT)	150	4 days	June	BDO	Trained NGOs	In 6 Shelters

12.6 Shelter level mock drills:

Table No- 12.5

Sl.	Type	No. of Flood Shelters to be covered	No. of villages to be covered.	Month/ Date
1	Flood Mock drill	6	6	19 th June

District Administration has always tried to make people aware on Disaster Management. For awareness generation among the stakeholders FAMEX/ Community Awareness programme is being organised in regular intervals. IRB 5th Batalion, Boudh and the Fire Service personnel will conduct Awareness and Famex programs at regular intervals.

CHAPTER – 13

PREPAREDNESS

13.1 Relief Lines: District to Blocks

Table No- 13.1

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (Blocks)
	From	To			
1	Subarnapur	Binka	Black tapping 40 KM	NIL	Sonepur & Binka
2	Subarnapur	Birmaharajpur	State Highway (25 K.M.)	NIL	Ullunda & Birmaharajpur Block
3	Subarnapur	Dunguripali	NH & Black tapping, 65 Km	NIL	Sonepur, Binka and Dunguripali
4	Subarnapur	Sonepur	PWD, road-2 K.M	NIL	Sonepur Sadar
5	Subarnapur	Tarbha	NH,32 Km	Road at Ghatkaintara may be submerged	Sonepur and Tarbha
6	Subarnapur	Ullunda	15KM (State Highway)	NIL	Sonepur & Ullunda

13.2 Relief Line Channels: Block to GPs & Villages

Table No: 13.2

Sl. No	Name of the Road		Type of Road & Length	Vulnerability of the route (Description of the Vulnerability)	Coverage (In Nos.)	
	From	To			Village	Population
1	Binka	Seledi	Black tapping 10 KM	Manigaon & Ganeshpur road of 2 km towards GP HQ may be submerged in flood	Tulundupali (Jharapada)	633
2	Binka	Mahadevpali	Black tapping 12 KM	Pandkital village road can be submerged	Gariapali Jharapada	205 303
3	Binka	Sindurpur	Black tapping 08 KM Kuchha 2 KM	Katrang to Gariapali 1.5 km road submerged In flood and a down bridge is also submerged.	Manigaon Jharapada	523
4	Binka	Sindurpur	Black tapping 08 KM Kuchha 3 KM	Katrang to Gariapali 1.5 km road submerged In flood and a down bridge is also submerged	Ganeshpur Jharapada	292
5	Birmaharajpur	Uffula	PMGSY Road 3 KM	NIL	1	392
6	Birmaharajpur	Bagbar	PMGSY Road 6 KM	NIL	6	2491
7	Birmaharajpur	Jatesingha	S.H.10 KM	NIL	4	1043

8	Birmaharajpur	Subalaya	S.H.12 KM	NIL	4	5424
9	Birmaharajpur	Pitamahul	S.H. 19 KM	NIL	4	2043
10	Birmaharajpur	Kamira	S.H.15 KM	NIL	2	951
11	Sonepur	Baladi	NH to RD - 34 Kms	NIL	7	5327
12	Sonepur	Bishimunda	RD -18 Kms	NIL	9	5969
13	Sonepur	Chhakormal	RD ROAD-60 Kms	NIL	9	7723
14	Sonepur	Haradakhohol	NH & RD- 25 Kms	NIL	12	6971
15	Sonepur	Janmura	RD-13 Kms	NIL	11	4437
16	Sonepur	Kalapatihar	SH & RD- 15 Kms	NIL	11	5701
17	Sonepur	Khaliapali	NH & RD-25 Kms	NIL	04	4302
18	Sonepur	Khari	NH & RD-35 Kms	NIL	11	6675
19	Sonepur	Kharjhora	NH & RD- 30 Kms	NIL	08	4070
20	Sonepur	Lachhipur	NH & RD- 40 Kms	NIL	05	6615
21	Sonepur	Mallikmunda	NH & RD- 25 Kms	NIL	07	6889
22	Sonepur	Mayurudan	NH & RD- 30 Kms	NIL	10	5094
23	Sonepur	Narayanpur	NH & RD- 40 Kms	NIL	05	4258
24	Sonepur	Rengali	NH & RD- 50 Kms	NIL	15	6441
25	Ullunda	S.Patrapali	25 KM PWD	No	4	3993
26	Ullunda	Sindhohol	15 KM	No	2	2084
27	Ullunda	Chadeipank	12 KM	No	3	2824
28	Ullunda	Mundoghat	17 KM PWD	No	3	2158
29	Ullunda	Nimna	12 Km	Road may submerge near Nimna due to Nimna nala	3	2000
30	Ullunda	Panchmahala	9 KM	No	3	2000
31	Ullunda	Bishipada	7 KM	No	2	1135
32	Ullunda	Badhila	8KM	No	3	2205
33	Ullunda	Mahada	15 KM	No	5	5225
35	Tarbha	Charbhata	RD Road -25 KM		4	840
36	Tarbha	Balikhamar	RD - 26 KM		4	2308
37	Tarbha	Singhari	RD & PMGSY - 20 KM		6	1090
38	Tarbha	Kamsara	RD Road-14 KM		1	309
39	Tarbha	Brahmani	RD & PMGSY-14 KM		3	2466
40	Tarbha	Maraduguchha	PMGSY ROAD-10 KM		6	2755
41	Tarbha	Katapali	PMGSY ROAD-10 KM		4	1129

42	Tarbha	Sibtula	RD - 3 KM		3	2653
43	Tarbha	Deulpadar	RD & PMGSY-14		1	3578
44	Tarbha	Menda	RD & PMGSY-17		1	3866
45	Tarbha	Tulunda	RD & PMGSY- 8 KM		3	2606
46	Dunguripali	Andharibanji	PWD (Black Tapping) Road - 30KM		Andharibanji	635
47	Dunguripali	Sargul	RD & PMGSY -5 KM		Sargul	2100
48	Dunguripali	Badkarley	PWD & RD (20 KM)		Badkarley	3108
49	Dunguripali	Tangerkarley	PWD & RD (30 KM)		Tangerkarley	1062
50	Dunguripali	Baidupali)	PWD & RD (4 KM)		Baidupali	1744
51	Dunguripali	Bandhpali	RD & PMGSY-4 KM		Bandhpali	1493
52	Dunguripali	Bankipali	PWD (15 KM)		Bankipali	1535
53	Dunguripali	Pandkital	PWD (18 KM)		Pandkital	1596
54	Dunguripali	Cherupali	PWD (6 KM)		Cherupali	1883
55	Dunguripali	Sukha	PWD & RD (10 KM)		Sukha	4752
56	Dunguripali	Chinajuri	PWD (5 KM)		Chinajuri	562
57	Dunguripali	Digsira	PWD & RD (10 KM)		Digsira	3425
58	Dunguripali	Beheramal	PWD & RD (10 KM)		Beheramal	1637
59	Dunguripali	Lingmarni	PWD & RD (18 KM)		Lingmarni	1032
60	Dunguripali	Bhimitkra	PWD & RD (35 KM)		Bhimitkra	1266
61	Dunguripali	Tamamura	RD (08 KM)		Tamamura	1821
62	Dunguripali	Rampur	PWD-20 KM		Rampur	5156
63	Dunguripali	Gajbandh	RD & PWD-35 KM		Gajbandh	2049
64	Dunguripali	Ichhapur	RD & PWD-15 KM		Ichhapur	1560
65	Dunguripali	Samleichuan	PWD-7 KM		Samleichuan	1781
66	Dunguripali	Karlajuri	RD & PWD-13 KM		Karlajuri	2467
67	Dunguripali	Mayabarha	RD & PWD-20 KM		Mayabarha	849
68	Dunguripali	Sahala	RD-5KM		Sahala	3825
69	Dunguripali	Sunapali	RD-7 KM		Sunapali	2564
70	Dunguripali	Pahandi	RD-7 KM		Pahandi	4670

13.3 PROCEDURE FOR USING INMARSAT ISAT PHONE 2

1. Stand outside with a clear view to the sky with the phone antenna pointing upwards.
2. There must be a clear line of sight between the phone's antenna and the satellite.
3. Point the antenna towards **South-East** direction.

4. Switch on the phone by pressing the Red power button of the phone for few seconds. Until the screen lights up.
5. Align the antenna for getting the maximum satellite signal strength (minimum two bars) 
6. The screen will show "searching for satellite" "registering with network".
7. The screen will show "ready for service". Inmarsat name will come in top right corner.
8. Then the phone is ready to operate
9. Simply dial the desired number:
 - i. From satellite to landline: Dial **00** + Country code 91+ **STD code (without 0)** + desired **Telephone number**
 - ii. From **Satellite to mobile**: Dial 00 + 91+ Mobile Number
 - iii. From **Satellite to satellite**: 00+ satellite phone number
 - iv. From **Landline** (should have ISD facility) to **satellite**: 00 + satellite phone number
 - v. From **Prepaid mobile** (should have ISD facility with sufficient balance) to **satellite**: 00 + satellite phone number
10. To end the call Press 'red' button

NOTE:

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

For more detail information please follow the **User Guide document**.

13.3.1 Allotted Satellite Phone Numbers (Table13.3)

SI	Districts/Offices	Numbers	SI	Districts	Numbers
1	Collector, Angul	8991118454	30	Collector, Sundargarh	8991118483
2	Collector, Balasore	8991118455	31	ODRAF Cuttack, OASP 6th Battalion	8991118484
3	Collector, Bargarh	8991118456	32		8991118485
4	Collector, Bhadrak	8991118457	33	ODRAF Bhubaneswar, OSAP 7th Battalion	8991118486
5	Collector, Bolangir	8991118458	34		8991118487
6	Collector, Boudh	8991118459	35	ODRAF Baripada, OSAP 5th Battalion	8991118488
7	Collector, Cuttack	8991118460	36		8991118489
8	Collector, Deogarh	8991118461	37	ODRAF Rourkela, OSAP 4th Battalion	8991118490
9	Collector, Dhenkanal	8991118462	38		8991118491
10	Collector, Gajapati	8991118463	39	ODRAF Koraput, OSAP 3rd Battalion	8991118492
11	Collector, Ganjam	8991118464	40		8991118493

12	Collector, Jagatsinghpur	8991118465	41	ODRAF Jharsuguda, OSAP 2nd Battalion	8991118494
13	Collector, Jajpur	8991118466	42		8991118495
14	Collector, Jharsuguda	8991118467	43	ODRAF Chhatrapur, OSAP 8th Battalion	8991118496
15	Collector, Kalahandi	8991118468	44		8991118497
16	Collector, Kandhamal	8991118469	45	ODRAF Balasore	8991118498
17	Collector, Kendrapada	8991118470	46		8991118499
18	Collector, Keonjhar	8991118471	47	ODRAF Bolangir	8991118500
19	Collector, Khorda	8991118472	48		8991118501
20	Collector, Koraput	8991118473	49	ODRAF Jagatsinghpur	8991118502
21	Collector, Malkangiri	8991118474	50		8991118503
22	Collector, Mayurbhanj	8991118475	51	State Fire Office	8991118504
23	Collector, Nabarangpur	8991118476	52	Commissioner of police	8991118505
24	Collector, Nayagarh	8991118477	53	R & DM Department	8991118506
25	Collector, Nuapada	8991118478	54	MD OSDMA	8991118507
26	Collector, Puri	8991118479	55	O/o Chief Secretary	8991118508
27	Collector, Rayagada	8991118480	56	O/o Chief Minister	8991118509
28	Collector, Sambalpur	8991118481	57	SRC Office (SEOC)	8991118510
29	Collector, Subarnapur	8991118482	58	M.D, OSDMA	8991118511

13.4 Resources available: Response force & Volunteers

Table NO- 13.4

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	1065	1065	1065	1065	Sh. Jacob Kispotta	9437581614 06712879710
2	ODRAF	42	37	34	41	Sri Amit Kirtania	9438446063
3	IRB	44	44	44	44	Durbasa Naik	9437109404
4	Police	222			222	Yash Pratap Shrimal, SP	9438916580
5	Reserve Police	90			90	Saroj ku Behera, Reserve Inspector	8847887267
6	Home Guards	263	-	-	-	Kanhu Charan Marandi Reserve Inspector	9439092744 8327714121
	Civil Defence	Not available					
7	NCC- Sonepur College MR High school	100 50	100 15			Ananta Narayan Dash Padmanabh Karna, CTO	9937817273 9437637942
8	NSS- Sidhartha college Binka	80				Sri Dharendra Ku. Nayak, Lecturer	9937802575
9	NYK Volunteers	12	0	0	0	Prabir Padhan	9438402497

10	Trained Task force RED CROSS- SNP	29	0	25	4	Dr Satyanarayan Hota, VC, DRCB	9438203387
----	--------------------------------------	----	---	----	---	--------------------------------	------------

13.5 Preparedness at District level:

Table No- 13.5

Task	Officer responsible	Activity	
District Emergency operation Centre (DEOC)	Collector/DDMA	Assignment of zones for monitoring evacuation and other DM activities. Assignment of duties to the district Level officials and Tahasildars/ BDOs	
	District Emergency Officer	Setting up Control Room and ensuring round the clock functioning	
	DIPRO/RTO	Arrangement of vehicles and public announcement system with RTO& DIPRO for warning dissemination.	
	DEOC		NGO coordination and assignment of duty
			Awareness generation among public on natural hazards
			Ensure Mock drill
		Early warning dissemination	
	Observer and Dy. Observer (weather report), collectorate.	Test Check-up of all communication Interfaces, rain recording systems and weather observatory in regular interval	
	Observer and Dy. Observer (weather report), collectorate.	Regular weather monitoring and monitoring IMD bulletins.	
Upward & Downward Communication	Nodal Officers of all line department	<ul style="list-style-type: none"> Have a list of Nodal persons with contact details Establish regular linkages with all important stakeholders Contact SEOC regularly	
Meeting of DDMA (Heads of the department & stakeholder)	DDMA	DDMA must meet quarterly every year & before any disaster (Preparatory meeting on Heat Wave in March 1 st week & DLCNC meeting on Flood preparedness in the month of May and again in November to review the drought situation)	
		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	
Police	Superintendent of Police	Ensure functioning of warning system	
		The VHF Control Room located at hqtrs and at each police Post has been kept ready round the clock to channelize and transmit urgent signal as to the Disaster from pre warning period to post disaster period.	
		Formation of team to combat the situation of any sort of natural calamities to protect the life & property of people all police post have been suitably instructed to remain alert and Rapid Action	
		Team has been kept in readiness in Dist. Hqtrs to act as an auxiliary force to ODRAF team	
Capacity Building	DEOC	<ul style="list-style-type: none"> Identifying & designating Nodal Officer for different Dept. Capacity building & skill upgradation of ODRAF/Fire services/ Police/Home Guard identify Volunteer like Civil Defence/Flood shelter Task Force/NCC/NSS/Scout & Guide & train them on Search & Rescue, First aid, evacuation etc. 	

		<ul style="list-style-type: none"> • Take stock of required materials for search & rescue, first aid, casualty management, evacuation, relief etc. & update IDRN portal regularly • Arrangement of Awareness programme on each natural hazard • Assess preparedness through Mock drill at District, Block & Community level
Shelter Management	BDO/Sarpanch	<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	Observer & Dy. Observer	<ul style="list-style-type: none"> • Collect & transmit Rain fall data regularly • Collect & transmit weather report regularly • Proper record keeping and transmission of information to all the levels • Ensure preparation of Disaster Management Plans & Safety plans at all levels • Capacity building of all Stake holders • Integrate the District plan with block & Village disaster management Plans • Develop healthy media partnership
Other departmental Preparedness		
Police Dept	Superintendent of Police	<ul style="list-style-type: none"> • Ensure functioning of the warning system (The VHF Control Room located at Hqtrs and at each Police Post has been kept ready round the clock to channelize and transmit urgent signal as to the Disaster from pre warning period to post disaster period.) • Formation of team (To combat the situation of any sort of natural calamities to protect the life & property of people all police post has been suitably instructed to remain alert and Rapid Action Team has been kept in readiness in Dist. Hqtrs to act as an auxiliary force to ODRAF Team.) • Delegation of areas (Each IIC/ OIC has been designated as a special officer to mobilize the force and conduct the rescue programme in their respective areas.) • Details of anti-social elements. • Adequate equipment for communication. • List of swimmers.
Revenue	Tahasildar	<ul style="list-style-type: none"> • Arrangement of boats and transport, based on the risk assessment, for evacuation • Provision/arrangement of rescue kit at risk prone area. • Formation of team for damage assessment • Prepare a map of disaster-prone areas in the district, history of the district, geographical conditions occupational details, settlements, rain, irrigation and industries etc. • Prepare a safe alternative route chart to utilize during disaster in the disaster-prone areas. • Review of disaster-prone areas, risks, response plan, resource and utility of resources and equipment.
Health	CDM&PHO	<ul style="list-style-type: none"> • Verification & management of Stock position of the sub-centre and PHC/AWCs • Capacity building of staffs • Arrange for mobile health unit for inaccessible areas • Arrangement of vehicle for uninterrupted mobility • Keep a list of private practicing doctors / medical facilities.

Irrigation	Executive Engineer,	<ul style="list-style-type: none"> • Arrangement & stocking of flood fighting materials like sand bags, bamboo mats • Identification of Vulnerable points & its repairing • Location of water level gauge station for flood situation. • Keep the contact list of swimmers
RWS&S	Executive Engineer	<ul style="list-style-type: none"> • Identification of water scarce area • Repair of defunct Tube wells • Installation of new tube wells • Arrangement of tankers • Preventive measures for water borne diseases and chlorination of water
RD, R&B	Executive Engineer	<ul style="list-style-type: none"> • Identification of weak-points • Repair of weak roads/structures/canals before hazard season • Arrangement of equipment for road clearance • Inspection of damage prone roads, bridges
Animal husbandry	CDVO	<ul style="list-style-type: none"> • Awareness Campaign & vaccination • Arrangement of mobile health unit for inaccessible area • Stock arrangement of medicines & vaccines
Electricity	Executive Engineer	<ul style="list-style-type: none"> • Stocking of required equipment & accessories • Replacement of old & damaged poles by installing new poles. • Capacity building of staffs • Team formation for quick assessment of faults & its repair.
Agriculture	DDA	<ul style="list-style-type: none"> • Identification of vulnerable areas • Awareness for Crop diversification & short term crops • Awareness for crop insurance • Coordination with insurance company • Formation of team for damage assessment
Regional Transport	RTO	<ul style="list-style-type: none"> • Awareness for road safety • Coordinate with traffic police to avoid traffic jam • Preparation of list of vehicles • Planning for road clearance in the narrow road • Arrangement of reflectors, cones for road safety
Forest & Environment	DFO	<ul style="list-style-type: none"> • Assessment of water scarcity in the forest. • Make arrangement of drinking water for inhabitants in the forest • Trimming of branches & cutting of old dead trees near to human habitats & roadside • Repair of old & procurement of new equipment for disaster management • Get ready the staffs & other people by building their capacity
Tele communication	DTO-Telecom	<ul style="list-style-type: none"> • Repair of defunct telephone lines • Replacement of old wire wherever necessary • Formation of team for checking fault & instant repair • Alternative arrangement in case of disruption of telephone line and microwave towers. • Ensure that the telephone lines at the shelters, emergency hospitals, police stations, control room and other places of emergency services, which can be used during disaster, are not disrupted.
PHED	Executive Engineer	<ul style="list-style-type: none"> • Identification & repair of defunct & damaged PWS
School & Mass Education	DEO	<ul style="list-style-type: none"> • Arrangement of mock drill • Arrangement of First Aid kits • Planning for School safety

PR Dept (Block)	BDO	<ul style="list-style-type: none"> • Arrangement for functioning of control room round the clock • Zone formation and organization of relief party. • Obtain the details for evacuation • Arrangement of boats and transport, based on the risk assessment, for evacuation • Coordinate with RTO for arrangement of vehicles for relief operation • Identification of temporary safe shelter • Identification of safety storage places
Civil Supply	CSO	<ul style="list-style-type: none"> • Make arrangement for stocking of rice, chuda & Gur. • Food stocking at the inaccessible area
Fire Service	Asst. Fire Officer	<ul style="list-style-type: none"> • Organization of mock drill • Repair & maintenance of equipment • Formation of teams with task assignment • Stock maintenance of firefighting materials
NGO	Chief functionary of NGO	<ul style="list-style-type: none"> • Organize workshops seminar meeting/training on community-based disaster management • IEC activities on disaster management

Distribution of Zones for monitoring evacuation and other DM activities during disaster.

SI No	Designation of Officer	Assigned Zone
1	ADM revenue, Subarnapur	Tarbha Block
2	ADM General, Subarnapur	Dunguripali Block
3	CDO-cum -EO, Subarnapur	Birmaharajpur Block
4	Sub-Collector, Sonapur	Binka Block
5	Sub-Collector, Birmaharajpur	Ullunda Block
6	Emergency Officer, Subarnapur	Sonapur Block

13.6 Preparedness at Community Level

Table no- 13.6

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 persons 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 respectively ventures into fields, sea & forest • Build teams from among the task force on Search & Rescue, First aid, Damage & loss assessment • Assess preparedness at Family/Individual level • Test Check-up of equipment's
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 numbers. & display it in Centre places. • Participate in the activities of Preparing village Disaster Management, developing Safety plans, Capacity building Programmes & Mock Drills

13.7 Preparedness at Family Level

Table No- 13.7

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 (2ltr/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 (as per need) 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, preparation of Safety plans, participate in Capacity building Programmes & involve in Mock Drills

13.8 Preparedness at Individual Level

Table No- 13.8

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/child must have a Personal Identity information like a copy of Aadhar card/ Voter ID / School Identity Card & Contact numbers of Preferably two who can be contacted in time of emergency 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 (as per need)
Capacity development	<ul style="list-style-type: none"> Participate & involve in the activities of Disaster Management Safety plans Capacity building Programmes Mock Drills & FAMEX

CHAPTER 14

CRISIS RESPONSE PLAN

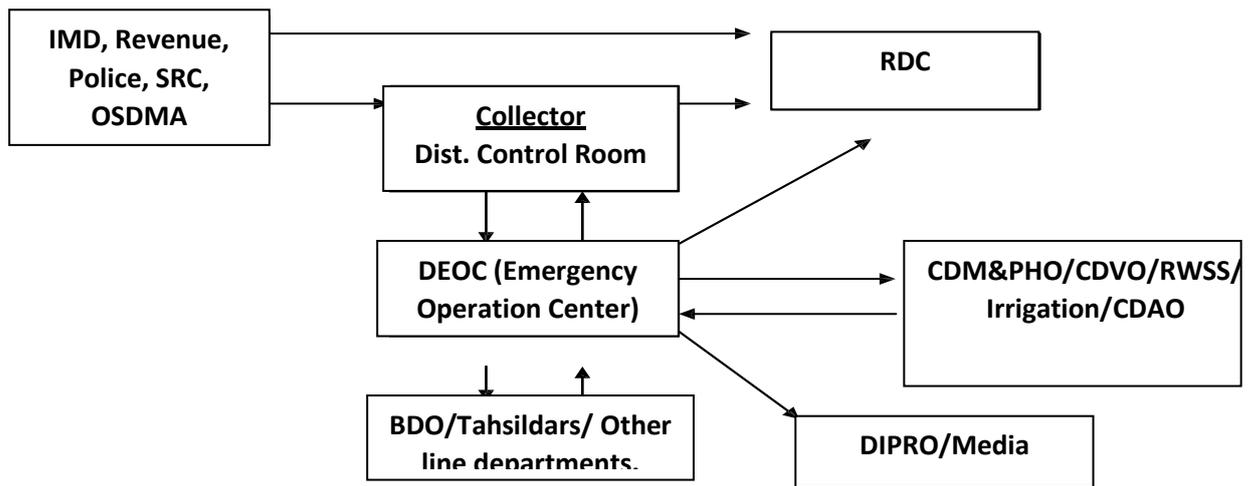
Response refers to activities done for handling disaster to bring the situation to normalcy not exceeding fifteen days from the abatement of disaster. The onset of an emergency creates the need for time sensitive actions to save life and property, reduce hardships and suffering, and restore essential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

In pursuance to the Notification No. 4695/R&DM(DM), Dt.29.08.2023 of Revenue & Disaster Management (Disaster Management) Department, Govt. of Odisha, District Level Incident Response System (IRS) for Subarnapur District has been constituted vide this Office Order No. **1075/Emg dated 25.09.2023** comprising of the following Officials. The Incident Response System (IRS) is implemented as the preferred disaster response system to deal with major emergencies/disasters. The District Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of occurrence of any major emergencies/disasters.

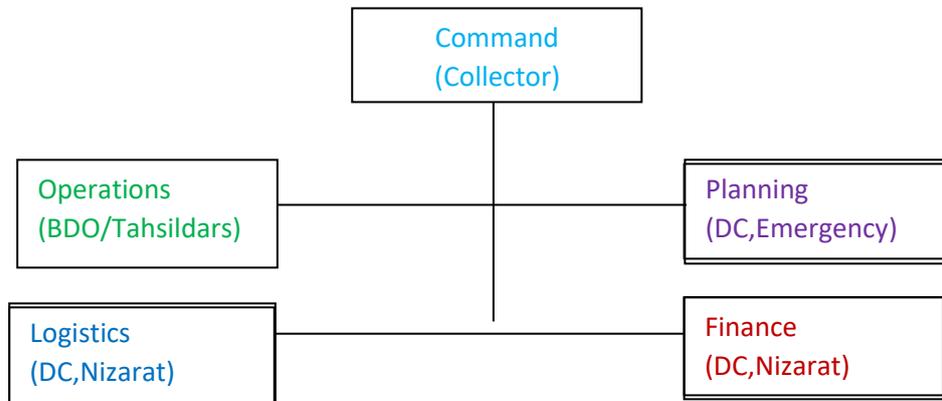
1)	Responsible Officer	Collector & District Magistrate, Subarnapur
2)	Incident Commander	Addl. District Magistrate, Subarnapur (Emergency)
3)	Deputy Incident Commander	CDO-cum-EO, ZP, Subarnapur
4)	Safety Officer	Supdt. of Police, Subarnapur
		CDM&PHO, Subarnapur
		CDVO, Subarnapur
		Asst. Fire Officer, Sonapur
5)	Liaison Officer	Deputy Collector, Emergency
6)	Information & Media Officer	District Information & Public Relation Officer, Subarnapur
7)	Operation Section Chief	Addl. District Magistrate, Subarnapur (General)
a.	Staging Area manager	Addl. EO, Administration, ZP, Subarnapur
b.	Rescue & Response Branch	
(i)	Natural Disaster	Asst. Fire Officer, Sonapur
(ii)	Epidemic & Health Hazard	CDM&PHO, Subarnapur
		CDVO, Subarnapur
(iii)	Manmade Disaster	Supdt. of Police, Subarnapur
c.	Transport Branch (Road, Rail, Water & Air Unit)	Regional Transport Officer, Sonapur
8)	Planning Section Chief	Deputy Collector, Emergency
a.	Situation Unit	Asst. Collector, RTI
b.	Resource Unit	Deputy Collector, Establishment
c.	Documentation Unit	Deputy Collector, Election
d.	Demobilization Unit	Deputy Collector, Revenue & Touzi

9)	Logistic Section Chief	Deputy Collector, Emergency
a.	Service Branch	Addl. EO, Administration, ZP, Subarnapur
(i)	Communication Unit	Asst. Fire Officer, Sonepur
		SDO, BSNL, Sonepur
		DEGM, Subarnapur
		DEO, Subarnapur
(ii)	Medical Unit	CDM&PHO, Subarnapur
		CDVO, Subarnapur
(iii)	Food Unit	Chief CSO, Subarnapur
b.	Support Branch	Addl. EO (Tech), ZP, Subarnapur
(i)	Resource Provisioning Unit	All Superintendent Engineer / Executive Engineer
(ii)	Facilities Unit	All Superintendent Engineer / Executive Engineer
(iii)	Ground Support	All Superintendent Engineer / Executive Engineer
c.	Finance Branch	Deputy Collector, Nizarat
(i)	Time Unit	Deputy Collector, Nizarat
(ii)	Compensation/Claim Unit	Nizarat Section
(iii)	Procurement Unit	Addl. EO (Finance), ZP, Subarnapur
(iv)	Cost Unit	Nizarat Section

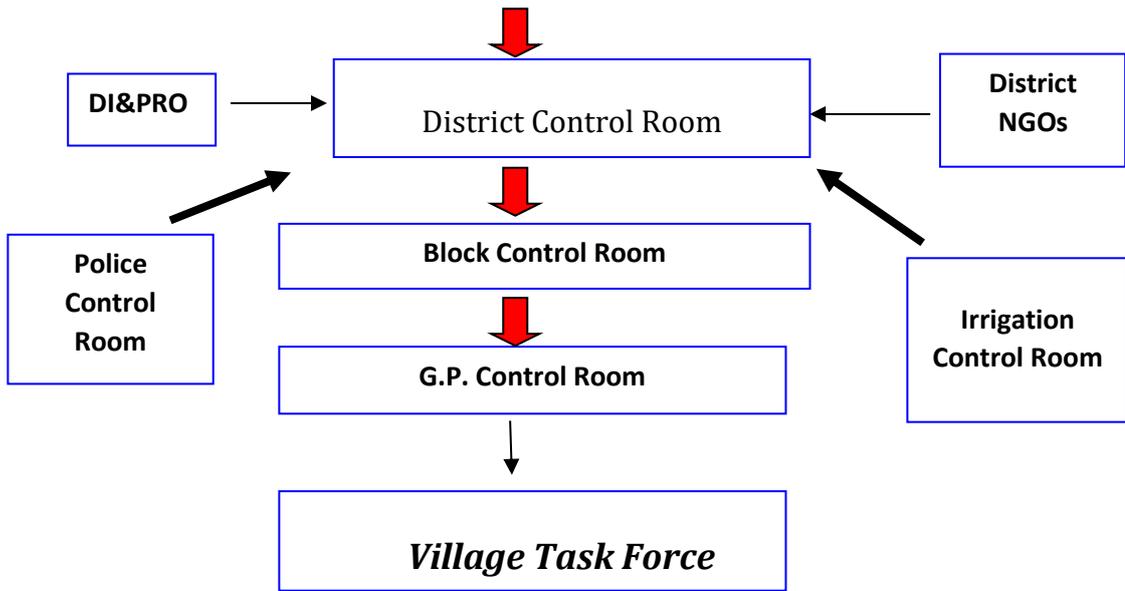
Incident Command System (ICS).



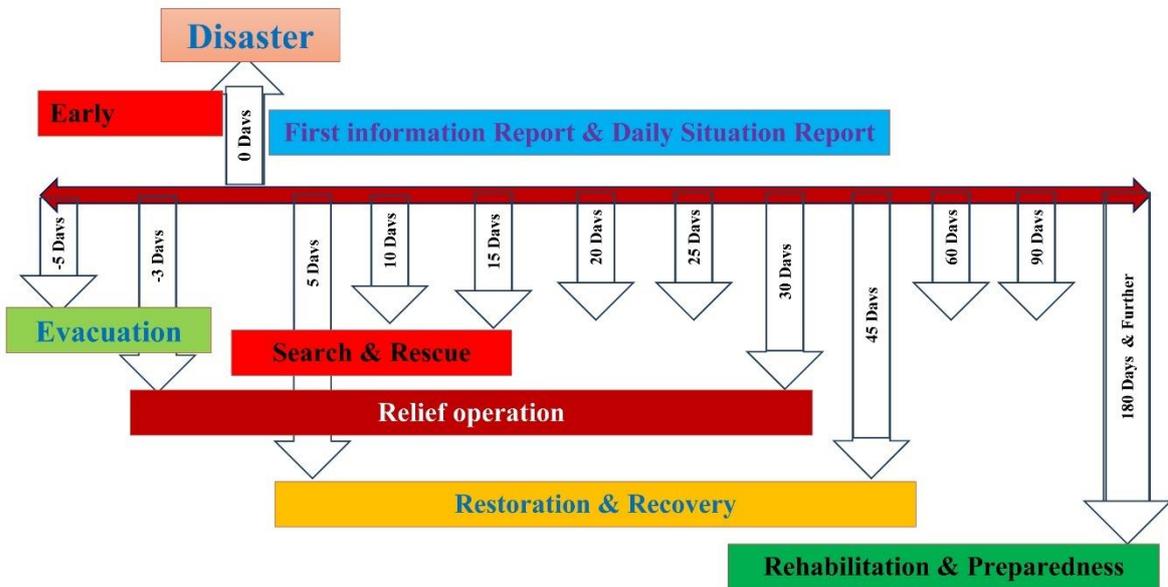
Report on Occurrence



Control Room Structure

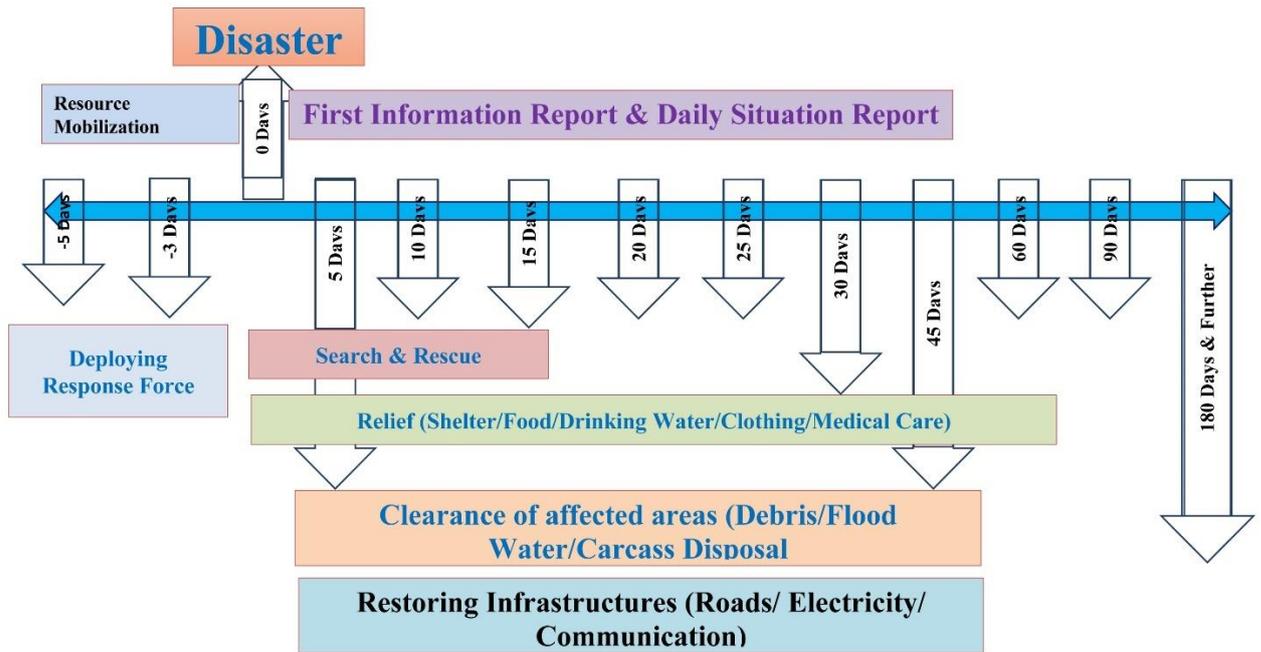


14.1 Phases of Response: Timeline (Indicative)
Figure- 14.1



14.2 Relief Management: Timeline

Figure - 14.2



14.3 Response

14.3.1 Relief operation

Table No- 14.1

SI.No.	Departments	Relief Operation – Response			
		Preparedness	Pre (after Warning)	During	Post
1.	Dist. Admin.	<ul style="list-style-type: none"> ⇒ Deployment of vehicles ⇒ Procurement and transportation of Relief materials to affected pockets/areas/ people ⇒ Arrangement of free kitchen in the shelter camps & affected areas. ⇒ Assigning of free kitchen in the shelter camps affected areas. ⇒ Assigning responsibilities to officials for distribution of emergent 	<ul style="list-style-type: none"> • Assessment of Block wise/GP & Village wise / requirement of emergent relief in view of population (adult / children) and parameters of ORC and block's requirement. • Identification of district level & block level officers to remain in charge of storage go downs/ transportation and distribution of emergent relief 	<ul style="list-style-type: none"> • Arrangement / requisition of Police/ Para-military / Home guards / CRPF Jawans to protect and facilitate uninterrupted relief supply and distribution • Liaison with INGOs / NGOs/ OSDMA/SRC to mobilize relief items and enlisting of their relief measures. • Grant emergency relief to all the 	<ul style="list-style-type: none"> • Declaration of the area affected by flood. • Closer of Govt. relief work, as per the ORC & SRC • Facilitate INGOs / NGOs and / or private individuals to continue relief operations of their own. • Daily situation report to Govt. • Keeping record of damages done to home, individual person, dead

		<p>relief/running of free kitchen.</p> <p>⇒ Coordinating with the civil society organizations/PSUs and UN agencies for continued relief operation</p> <p>⇒ Monitoring.</p>	<ul style="list-style-type: none"> • Ceasing of foods stuff and other essential items available in Mal Godown • Make requisition of transport vehicles and county boats for supply of relief items. • Purchase, organize or mobilize emergent relief and stockpiling of emergent relief in the remotest areas to be co-ordinated with Tahsildars/ Sub collectors/BDOs • Stock piling of fodder in the risk prone areas to be coordinated with CDVO. • Ensure stock piling of tents, medicines, kerosene oil in the strategic points. • Collector will remain in charge of all relief operation 	<p>marooned people and organize relief camps.</p> <ul style="list-style-type: none"> • Organize free kitchen centres in the distressed areas with the support of Sub-Collector, BDMC, GPDMC & NGOs for the marooned people. • Provision of basic amenities like drinking water, sanitation and public health care. • Sub-Collector/ Tahsildar/BDO to arrange for documentation / record of relief items received from various agencies / stockpiled / supplied remaining balance etc., and report to District Administration • Making necessary arrangement or seek the help of state Govt. to organize Air Dropping in flood pockets for the marooned villages, flood shelters. • Organise cattle camps, if necessary, provide veterinary care, fodder and cattle feed to the affected animals. 	<p>and missing persons and assist Tahasildar to pay legitimate compensation</p> <ul style="list-style-type: none"> • Opening of PDS outlets to start their normal activities and also ensure that no malpractice is done by the trades, taking advantage of the prevailing situation. • Facilitate food for work programme by GO and NGOs. • Commencement of agricultural activities, DE siltation, re sowing etc. • Encourage NGOs to go for agriculture rehabilitation programme. • Organise health programme both for people and animals by INGOs / NGOs / Charitable Organisations • Meeting with all stake holders and taking note of the lessons learnt as a reference for making future development in the district disaster Management Plan.
--	--	--	--	---	--

				<ul style="list-style-type: none"> • A card system according to the number of families / persons should be introduced for smooth operation of relief • Submission of daily situation reports to Govt. and disseminate to mass media to avoid confusion and rumors. • If necessary, laborers may be hired to make off / on load relief items. • Facilitate visits of VIPs in the flood-affected areas. 	
2.	BDO	<ul style="list-style-type: none"> • Formation of relief parties. • Keep the list of vulnerable pockets, list of boats & transport vehicles. 	<ul style="list-style-type: none"> • Instruct the relief team & other staffs to remain alert. • Ensure that CSO has stocked the relief materials in the vulnerable pockets as per need. 	<ul style="list-style-type: none"> • Supply of emergency relief to all the marooned people and organize relief camps. • Provision of basic amenities like drinking water, sanitation and public health care. 	<ul style="list-style-type: none"> • Closer of Govt. relief work, as per the ORC & SRC • Daily situation reports to District office. • Opening of PDS outlets to start their normal activities
3.	RWS&S	<ul style="list-style-type: none"> • Installation of tube-wells • Site visit and report preparation • Awareness generation for using bleaching • Help BDO during emergency • Supply of drinking water during emergency • Site selection and water test in Pallasuni (BBSR) 	<ul style="list-style-type: none"> • Supply of drinking water • Supply of poly pack containing safe drinking water • Distribution of halogen tablets • Informing community particularly the evacuees regarding use of safe drinking water 	<ul style="list-style-type: none"> • Supply safe drinking water in the poly packs to people • Distribution of halogen tablets • Informing community particularly the evacuees regarding use of safe drinking water 	<ul style="list-style-type: none"> • Supply safe drinking water to people • Distribution of halogen tablets

		<ul style="list-style-type: none"> • Collection and storing of K-018H2s test stripe, bottle, bleaching, halogen tablets, tube well accessories 			
4.	CDM&PHO	<ul style="list-style-type: none"> • List out the staff with contact address • Stock position of the sub-centre and PHC/AWCs • Prepare the plan and indent for stock 	<ul style="list-style-type: none"> • Stock piling of medicines /disinfectants in the risk prone areas • Maintenance of Stock Register 	<ul style="list-style-type: none"> • Provision of temporary medical relief Centres • Distribution of medicines and halogen tablets • Treatment of the victims and daily report to PHC control room 	
5	NGO/ Volunteer	<ul style="list-style-type: none"> • IEC activities on disaster management • Community mobilization • Ensure regular meeting of NGO co-ordination cell • Disseminate all government aided programme to the community • Ensure regular mock drill 	<ul style="list-style-type: none"> • Assist government personnel in charge of storage Go downs / transportation and distribution of emergent relief. • Motivate communities to store food stuff and other essential items in safer places for the emergency period • Assist VAS in stock piling of fodder in the risk prone areas. • Ensure stock piling of tents, medicines, & kerosene oil 	<ul style="list-style-type: none"> • Assist government personnel in charge of storage go downs / transportation and distribution of emergent relief. • Motivate communities to store food stuff and other essential items in safer places for the emergency period • Assist VAS in stock piling of fodder in the risk prone areas. • Ensure stock piling of tents, medicines, & kerosene oil 	<ul style="list-style-type: none"> • Organize or facilitate CBOs or private individuals to continue relief operations and/or free kitchen Centres. • Keeping record of damages done to home, individual person, dead and missing persons and assist Tahasildars to pay legitimate compensation. • Ensure that the traders, taking advantage of the prevailing situation, do no malpractice.

Sl. No.	Departments	14.3.2 Health and Sanitation Response System No-14.2				Table
		Preparedness	Pre (after Warning)	During	Post	
1.	CDM&PHO	<ul style="list-style-type: none"> List out the staff with contact address Stock position of the sub-center and PHC/AWCs Prepare the plan and indent for stock Train Para-medical staff/ ANMs / male health workers / volunteers/task forces/ Anganwadi workers for use and providing minimum health services to the community. Arrange for mobile health unit for inaccessible areas DDC at village level Health awareness campaign 	<ul style="list-style-type: none"> Disinfections of drinking water sources IEC activities regarding safe drinking water, disposal of human and animal wastes Check the stock and collect the required stock from district office Arrange emergency room ready with all equipments and Staff 	<ul style="list-style-type: none"> Deployment of medical & paramedical staff at the affected sites in the form of medical camps 	<ul style="list-style-type: none"> Disinfections of drinking water sources IEC activities regarding safe drinking water, disposal of human and animal wastes Check the stock and collect the required stock from district office Arrange emergency room ready with all equipments and Staff 	
2	Executive Engineer, RWS&S	<ul style="list-style-type: none"> Installation of tube-wells Site visit and report preparation Awareness generation for using bleaching Helping BDO during emergency Supply of drinking water 	<ul style="list-style-type: none"> Lab-testing of drinking water if necessary Bleaching of drinking water sources Aware community regarding to use safe drinking water 	<ul style="list-style-type: none"> Lab-testing of drinking water if necessary Sticking red and green stickers respectively for the polluted and safe drinking water sources 	<ul style="list-style-type: none"> Checking/washing/repairing of tube-wells to put it back to its normal condition 	

		during emergency <ul style="list-style-type: none"> • Site selection and water test 		especially tube wells <ul style="list-style-type: none"> • Bleaching of drinking water sources 	
3	NGO/Volunteers	<ul style="list-style-type: none"> • IEC activities on disaster management • Community mobilization • Ensure regular meeting of NGO co-ordination cell • Disseminate all government aided programme to the community • Ensure regular mock drill • Ensure regular bleaching / use of disinfectants in the drinking water sources • Organize workshops seminar meeting/training on community-based disaster management • Long term mitigation strategies 	<ul style="list-style-type: none"> • IEC activities on disaster management • Community mobilization • Ensure regular meeting of NGO co-ordination cell • Disseminate all government aided programme to the community • Ensure regular mock drill • Ensure regular bleaching / use of disinfectants in the drinking water sources 	<ul style="list-style-type: none"> • Community mobilization • Disseminate all government aided programme to the community • Help the community for taking precaution needed for drinking pure drinking water and proper health & sanitation measures. 	<ul style="list-style-type: none"> • Disinfections of drinking water sources taking steps to check any possibility of spreading any epidemics in the community

S I N O	Departm ents	Preparedness	Pre (after warning)	During	Post
1	Dist Admin.	<ul style="list-style-type: none"> • Identification of Shelter/ Temporary shelter in elevated places and arrangement of tents etc. • Arrangement of Food/Drinking water/Medicine in the shelter places. • Person's allocation for each shelter. • Arrangement of transportation • Arrangement for safe shelter for animals • Provision of electricity to the identified shelters. 	<ul style="list-style-type: none"> ⇒ Arrangement of Food/Drinking water/Medicine in the shelter places. ⇒ Person's allocation for each shelter. ⇒ Arrangement of transportation ⇒ Arrangement for safe shelter for animals ⇒ Provision of electricity to the identified shelters ⇒ Deployment of Police Personnel Temporary supply of safe drinking water 	<ul style="list-style-type: none"> • Make arrangement not to allow any body to go outside • Maintain record of every activity • Sharing of information about the weather conditions • Supply of dry food & water • Keep environment clean • Provide fodder & water to the animals 	<ul style="list-style-type: none"> • Free kitchen for all • Distribute relief at the shelter and keep record • Replenish food as per the needs • Help evacuees to go to their houses • Clean safe place

2.	Police	<ul style="list-style-type: none"> • Ensure functioning of the warning system. • Formation of team • Delegation of areas • Formation of zones/Sub-Zones 	<ul style="list-style-type: none"> • Deployment of police staff at risk point • Arrangement for the safety of property of the people • Arrange rescue kits • Support staff and volunteers during evacuation operation • Assist fire brigade personnel in their efforts • Maintain law and order situation 	<ul style="list-style-type: none"> • Deploy Constables/ Home Guards to different flood/ cyclone shelters • Maintenance of law and order • Arrangement of police personnel for the safeguard of the shifted marooned families 	<ul style="list-style-type: none"> • Arrangement of police personnel for safeguard of the members of the shifted family
3.	Electricity	<ul style="list-style-type: none"> • Regular identification of faults • Regular checking and repair of weak points/Transformers • Stockpiling of equipments/accessories 	<ul style="list-style-type: none"> • Arrangement of uninterrupted power supply at the temporary shelters 	<ul style="list-style-type: none"> • Arrangement of uninterrupted power supply at the temporary shelters 	Restoration of power supply at all the shelters
4.	RWS&S	<ul style="list-style-type: none"> • Installation of tube-wells • Site visit and report preparation • Awareness generation for using bleaching • Helping BDO during emergency • Supply of drinking water 	<ul style="list-style-type: none"> • Installation of emergency tube-well/tankers near the shelter sites • Bleaching/disinfections of drinking water sources • Supply of halogen tablets 	<ul style="list-style-type: none"> • Supply of drinking water • Supply of poly pack containing safe drinking water • Distribution of halogen tablets • Informing community 	<ul style="list-style-type: none"> • Withdrawal of temporary tube-well installed near shelter sites • Use of bleaching powder

		<p>during emergency</p> <ul style="list-style-type: none"> • Site selection and water test in Pallasuni (BBSR) • Collection and storing of K-018H2s test stripe, bottle, bleaching, halogen tablets, tube well accessories • Area wise deployment of staff, fitter, Mason, APD 		<p>particularly the evacuees regarding use of safe drinking water</p>	
5.	Medical	<ul style="list-style-type: none"> • List out the staff with contact address • Stock position of the sub-center and PHC/AWCs • Prepare the plan and indent for stock • Train Paramedical staff/ ANMs / male health workers / volunteers/task forces/ Anganwadi workers for use and providing minimum health services to the community. 	<ul style="list-style-type: none"> • Provision of medicine and deployment of Para medical staff • Provision of medical help to the needy • Provision of Halogen Tablets and use of Disinfectants for the temporary latrines 	<ul style="list-style-type: none"> • Provision of medicine and deployment of Para medical staff • Provision of medical help to the needy 	<p>Take precautionary measures to avoid any outbreak of epidemic</p>
6.	PWD&RD	<ul style="list-style-type: none"> • Identification of weak-points • Repair of weak roads/structures /canals before hazard season • Stockpiling of building material • Arrangement of equipments for road clearance 	<ul style="list-style-type: none"> • Repair of approach roads/ structures/ canals leading to shelters • Stalk piling of building materials 		<ul style="list-style-type: none"> • Damage assessment and report preliminarily Repairing of affected/ damaged government

					building structure • Clearance of debris to reinstall communication
8.	NGO/ Volunteers	<ul style="list-style-type: none"> • IEC activities on disaster management • Community mobilization • Ensure regular meeting of NGO co-ordination cell • Disseminate all government aided programme to the community • Ensure regular mock drill • Ensure regular bleaching / use of disinfectants 	<ul style="list-style-type: none"> • Ensures opening of the identified flood shelters for the evacuees and hand over the shelter management charge DPC. • Arrange for temporary shelters, if required • Provision of temporary latrine and portable water source near the shelters. • Check rumours by facilitating DPC/ Task Force to disseminate information regarding weather conditions 	<ul style="list-style-type: none"> • Ensure proper management of flood shelters by DPC / Task Force • Keep daily situational / status report • Ensure registration of the evacuated people sheltered 	<ul style="list-style-type: none"> • Ensure people are back to their home • In case houses are fully collapsed/ swept away, arrange tents for temporary shelter for the victims

Table No-14.3.4 Evacuation, Search and Rescue Response Structure and System

Department	Preparedness	Pre (after Warning)	During Disaster	Post Disaster
District Control Room	<ul style="list-style-type: none"> • Deployment of Police/Fire Brigade for search and rescue. • Co-ordination with the NCC/NSS/ Civil Defence/Rajya Sainik Board etc. for rescue operation. • Ensure availability of the rescue materials. • Prepare inventory of shelter places and map indicating the shelter Centres. • Provide & arrange Rescue kit at risk areas 	<ul style="list-style-type: none"> • Arrangement of Power Boats and Rescue Kits and equipment. • Deployment of Army / Fire Brigade / Police Personnel and Trained Volunteers in the strategic points. • Deployment of Senior officers of district to organize rescue operation. 	<ul style="list-style-type: none"> • Search group go around to search and rescue left over or trapped people on the affected areas wearing the PPE kits. • Provision of shelters for the victims. • Provide medical help, if needed, and help them reach nearest hospital • Record keeping and information dissemination Control Room. 	<ul style="list-style-type: none"> • Help the people return to their original places / arrange temporary shelters.
Police	<ul style="list-style-type: none"> • Ensure functioning of the warning system. • Formation of team • Delegation of areas • Formation of zones/Sub-Zones • Ensure adherence of COVID-19 guide lines during search and rescue. 	<ul style="list-style-type: none"> • Deployment of police staff at risk point • Arrangement for the safety of property of the people. • Arrange rescue kits. • Support Block staff and volunteers during evacuation operation • Assist fire brigade personnel in their efforts • Maintain law and order situation 	<ul style="list-style-type: none"> • Deployment of police staff at risk point • Arrangement for the safety of property of the people. • Arrange rescue kits. • Support Block staff and volunteers during evacuation operation • Assist fire brigade personnel in their efforts • Maintain law and order situation 	<ul style="list-style-type: none"> • Support District/Block officials and volunteers during search and rescue operation • Assist fire brigade personnel in their efforts • Maintain law and order situation
MVI	Identify and take stalk of the vehicles present with	Meeting with the owners of the vehicles	Provide required vehicles to the	Provide vehicle

	corresponding owners		block functionaries	
Fire Brigade	Take stalk of all the equipments (boats, motors, life jackets, crane etc) needed during the disaster and prepare for a mock drill.	Divide into teams in coordination with the Dist. admn. along with police, CD(Home) vol. and get ready for the situation.	<ul style="list-style-type: none"> • Deployment of fire officials at risk point • Arrangement for the safety of property of the people. • Arrange rescue kits. • Support admn officials and volunteers during evacuation operation • Assist police, CD home personnel in their efforts 	<ul style="list-style-type: none"> • Support District/Block officials and volunteers during search and rescue operation • Assist police/ CD home vol. personnel in their efforts • Maintain law and order situation
Revenue	<ul style="list-style-type: none"> • Holding of natural calamity meeting in the month of May and October. • Joint inspection • Formation of Zones/Sub-Zones • Review progress 	<ul style="list-style-type: none"> • Deployment of Sub-collectors/ Tahasildars/ RIs and other supporting staffs to assist in rescue operation • Propagation for evacuation • Arrange rescue kits 	<ul style="list-style-type: none"> • Search group go around to rescue the leftover people in the risk areas • Arrangement of boats and transports for the web are stranded in collaboration with block administration/ police/ fire brigade/ volunteers • Reporting casualties/ missing persons • Maintenance of law and order being local magistrate 	<ul style="list-style-type: none"> • Assist police/ CD home vol. personnel in their efforts • Maintain law and order situation
Medical	<ul style="list-style-type: none"> • List out the staff with contact address • Stock position of the sub-center and PHC/AWCs 	<ul style="list-style-type: none"> • Arrangement of medical help for the rescued /injured persons 	<ul style="list-style-type: none"> • Coordination with search & rescue team of medical help for the rescued /injured persons 	<ul style="list-style-type: none"> • Coordination with search & rescue team of medical help for the rescued

				/injured persons
Saline and Embankment/ PWD/ RD	<ul style="list-style-type: none"> • Holding of natural calamity meeting in the month of May and October • Awareness generation • Formation of Zones/Sub-zones 	<ul style="list-style-type: none"> • Coordination with Search & rescue team in for rescue & guarding of vulnerable pockets 	<ul style="list-style-type: none"> • Coordination with Search & rescue team in for rescue & guarding of vulnerable pockets 	<ul style="list-style-type: none"> • Coordination with Search & rescue team in for rescue & guarding of vulnerable pockets
NGO/ Volunteer	<ul style="list-style-type: none"> • IEC activities on disaster management • Community mobilization • Ensure regular meeting of NGO co-ordination cell • Disseminate all government aided programme to the community • Ensure regular mock drill • Ensure regular bleaching / use of disinfectants in the drinking water sources • Organize workshops seminar meeting/training on community-based disaster management 	<p>Assist District/Block Administration in arranging Power Boats, Country Boats and Rescue Kits and equipment. Deployment of Trained Volunteers in the strategic points.</p> <p>Assist District/Block Administration and field officials to organize rescue operation</p>	<ul style="list-style-type: none"> • Search group go around to search and rescue left over or trapped people on the affected areas. • Provision of shelters for the victims. • Provide medical help, if needed, transport to nearby health centres • Record keeping and information dissemination to district /Block Control Room. 	<p>Coordination with search & rescue team of medical help for the rescued /injured persons</p>

14.4 Format for First Information Report (FIR)

On occurrence of Natural Calamity

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

From: District: _____

Date of Report: _____

To,

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

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

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

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

14.5 Daily Status Report on Relief/ Restoration Measures Undertaken By Departments

1. Health Department.

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

2.R.D. Department.

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

4. FS & CW Department

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

District	Chuda	Gur

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

Blocks

Quantity allocated (in quintal)

Total:

4. Fisheries & A.R.D. Department

- Animals vaccinated-
- Animals treated-

Damages to Roads/River Embankments

1.R.D. Department.

- Roads damaged-
- CD/Breach occurred-
- Breach closed-
- Building damaged-

Building collapsed-
Pipe water supply affected-
Tube Wells affected-

2.Works Department.

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

3.W.R Department.

Breach occurred-
Breaches closed-
Breach closing works in progress

CHAPTER -15

REHABILITATION & RESTORATION

15.1 Rehabilitation & Restoration

Rehabilitation and restoration come under recovery phase immediately after relief and rescue operation of the disaster. This post disaster phase continues until restoration of normalcy. This phase mainly covers

- 1) Damage assessments.
- 2) Debris clearance, removal and its environmentally safe disposal
- 3) Restoration and even upgrading utilities including communication networks
- 4) Re-establishment of major transport linkages
- 5) Relocation
- 6) Temporary housing
- 7) Detailed building inspections
- 8) Redevelopment planning
- 9) Environmental assessments
- 10) Demolition
- 11) Reconstruction
- 12) Integrating DRR into various development initiatives.
- 13) Grievance redressal
- 14) Physical rehabilitation.
- 15) Social rehabilitation.
- 16) Economic rehabilitation.
- 17) Psychological rehabilitation.

15.2 Standard Operating Procedure: Restoration & Rehabilitation

Table No- 15.1

Name of the Department	Action points
Collector/ADM / Emergency Officer	Quick damage assessment and Review of law-and-order situation.
	Restoration of Critical Infrastructures to bring situation to normalcy.
	Ensure Restoration of roads & channels, Communication network, Electricity, Water supply.
	Ensure health in the affected areas.
CDM&PHO	Carry out Disease surveillance measures to check epidemic.
	Dis-infection of drinking water & measures for health & hygiene.

	Rehabilitation of deprived & destitute.
	Carry out Trauma & Psycho-social counselling.
Superintendent of Police (SP)	Maintain law and order situation.
	Quick assessment of law-and-order situation in affected areas.
	Support and coordinate with administration in restoration and rehabilitation.
	Prepare updates on the law-and-order situation every 4-6 hours and brief the authorities
	Controlling situations like rioting and looting, and cordon off sensitive areas.
	Control and monitor relief material and traffic movement. Ensure everything is going on smoothly with adherence of COVID-19 guidelines.
EE- RWSS	Ensure that supply of drinking water is made available at the affected site and relief camps.
	Ensure the temporary sewerage lines and drainage lines are kept separate.
	Report the situation and the progress on action taken by the team to the DEOC.
	Carry out emergency repairs of all damages to water supply systems.
	Assist health authorities to identify appropriate sources of potable water.
	Identify unacceptable water sources and take necessary precautions to ensure that no water is accessed from such sources, either by sealing such arrangements or by posting the department guards.
	Arrange for alternate water supply and storage in all transit camps, feeding centers, relief camps, cattle camps, and also the affected areas, till normal water supply is restored.
	Set up temporary sanitation facilities at the relief camps.
	Installation of mobile toilets, individual toilets and community toilets.
EE- Irrigation	Carry out damage assessment & restoration & reconstruction activities.
	Establish communication with the State EOC, Divisional Control Room, District Control Room and Police.
	Round the clock inspection and repair of bunds of dams, irrigation channels, bridges, culverts, control gates, overflow channels, repair of pumps, generators, motor equipment and station buildings.

DDA- Agriculture	Identification of different areas to be affected by different disasters.
	Organize transport, storage & distribution of seeds, fertilizers, pesticides & labor.
	Communication with the State EOC, Divisional Control Room, District Control Room and other concerned departments.
	Public information Centre should be established with a means of communication, to assist in providing an organized source of information.
	Submit a report on the amount spent on disaster management in pursuance of these relief activities.
	Carry out restoration, crop loss assessment, input subsidy etc activities.
EE- Rural Works	Carry out detailed survey assessment of affected rural work areas in the Disaster.
	Submit report to the govt.
	Implement repair & restoration activities.
EE- Public Works	Carry our quick damage assessment & submit reports.
	Carry our Restoration & rehabilitation works.
	Contact with DEOC.
	Route strategy for evacuation and relief marked.
	Community assistance mobilized for road clearing.
DTO-Telecom	Restoration of tele communication system
	Carry out damage assessment & submit report
	Look immediate restoration of communication for emergency services
CDVO	Supply of emergency medicines and medical equipment
	Arrangement of anesthetic drugs/vehicle for transport of injured animals
	Identification of place for opening of operational sites, for cattle health and feed camps.
	Carry out damage assessment of animal lives & submit report.
RTO/MVI	Coordinate with DEOC.

	Report the situation and the progress on action taken for clearance of transportation system.
	Ensure timely re-establishment of the critical transportation links.
	Carry out damage assessment & carry out restoration activities.
DFO	Carry out damage assessment & submit report.
	Ensure plantation of the fodder and other trees in the affected areas.
Railway	Carry out damage assessment & submit report.
	Implement damage restoration activities.
EE- WESCO	Begin repairing and reconstruction work
	Assisting hospitals in establishing an emergency supply by assembling generators and other emergency equipment, if necessary.
	Establish temporary electricity supplies for other key public and private water systems
	Establish temporary electricity supplies for transit camps, feeding centres, relief camps and, District Control Room and on access roads to the same.
	Establish temporary electricity supplies for relief material go downs.
	Compile an itemized assessment of damage, from reports made by various electrical receiving centers and sub-centres
	Report about all the activities to the DEOC.
EE – PHED	Engage Several teams of engineers and assistants for restoration of water supply services.
	Make provisions to acquire tankers and establish other temporary means of Distributing water on an emergency.
	Supply Required stock of lengths of pipe, connections, joints, hydrants and bleaching powder for restoration & reconstruction works.
	Adequate tools should be on hand to carry out emergency repairs.
	Carry our damage assessment & submit report.
DEO- School & Mass Education	Facilitate search and rescue and first-aid team which has formed in schools.
	Carry out Damage assessment on school buildings

	Monitor shelter centers attached with schools.
	Contact with DEOC & report about the status.
BDOs/Tahsildars	Report to site of the relief camps.
	Responsible to manage and distribute relief items to the affected victims.
	Clearing of the areas to establish relief camps
	Setting up relief camps and tents using innovative methods that can save time.
	Assist local authorities to set up important telecom and other service-related facilities.
	Ensuring distribution of relief material to the all the people including vulnerable groups of the target area such as women with infants, pregnant women, children, aged people and handicapped. Ensuring support to Local Administration.
	Locating adequate relief camps based on damage survey.
	Develop alternative arrangements for population living in structures that might be affected even after the disaster.
	Carry out Restoration & development works.
	Responsible for reporting the progress on action taken by the team to the EOC.

Formats for damage & loss assessment has been annexed at annexure -3 in Vol-II

CHAPTER-16

RECOVERY

Disaster may disrupt the community & it needs recovery. Recovery is a phase in the emergency management cycle that begins with stabilization of the disaster conditions (the end of the emergency response phase) and ends when the community has returned to its normal routines. It is also a process by which the community achieves the goal of returning to normal routines. Post Disaster Need Assessment (PDNA) is required to achieve smooth recovery.

Post Disaster Need Assessment (PDNA) is a multi-sectorial and multidisciplinary structured approach for assessing disaster damages, losses, impacts and needs that will lead to the development of a recovery and reconstruction plan. It is undertaken after the emergency phase or during the time when the post-disaster emergency operations are winding down and longer-term recovery is about to start. PDNA is basically undertaken by the expertise like Engineers, Economists, Statisticians and Financial Specialists who have depth knowledge on valuation & estimation of loss, damages & needs. It is a mechanism for joint assessment and recovery planning after a disaster for resource mobilization. The aim of the Post-Disaster Needs Assessment (PDNA) is to assist governments to understand the full extent of a disaster's effect and impact, and the needs of the affected population. PDNA can be used as a tool for planning and programming recovery, as well for resource mobilization.

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

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

The DM & Collector will be the co-ordinator of all recovery activities in the district.

The role of the DM & Collector will be to:

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

CHAPTER- 17

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 15th Finance Commission. 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 item's ad norms.
- The report of the Central Team is examined by the Sub-Committee NEC constituted under section 9 of DM act, 2005.
- Thereafter, the High-Level Committee (HLC) approves the quantum of assistance from NDRF.
- This is, however, subject to the adjustment of 50% of the balance available in the State's SDRF for the instant Calamity.

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 15th 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 15th Finance Commission for each year the Finance Commission period 2021-26 has been approved by the Central Government. SDRF would receive 80% of State Disaster risk Management fund while State Disaster Mitigation Fund would get 20% of the allocation. There are three sub allocation within SDRF i. (i) Response & Relief (40%), (ii) Recovery & Reconstruction (30%) & (iii) Preparedness and Capacity Building (10%). The SDRM & SDMF are not interchangeable. 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 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 SEC decides on all matters connected with the financing of the relief expenditure of immediate nature from SDRF.

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

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 a greater 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 S.E.C. However, funds towards pure relief are released under orders of Special Relief Commissioner / Chief Secretary and the same is placed before the State Executive Committee in its next meeting for approval. To save time, Collectors have been instructed to disburse the ex-gratia assistance from the available cash and record the same on receipt of fund from Special Relief Commissioner.

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

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

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 01st and 03rd June, 2014 respectively, 10 % flexi-fund within the centrally sponsored schemes (CSS) to be utilised, inter alia for mitigation / restoration activities in the event of natural calamities in the sector covered by CSS. Thus, relevant Central Government and State Government funded schemes are identified which are crucial to build over resilience of communities in the context of the district.

Different State and Central Government Schemes and Programmes

Table No-17.1

SI No.	Name of the Scheme	Sector	Nodal Department	Objective of the Scheme
1	National Agriculture Insurance Scheme (NAIS)/ Rastriya Krishi BimaYojna (RKBY) & 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.
2	National Earthquake Risk Mitigation Project (NERMP)	Building	R& B	It aims at to execute the National Building Code 2005 & ensure the construction of earthquake resilient buildings.
3	National Flood Risk Mitigation Project (NFRMP)	Flood	Water resource	NFRMP has been envisaged for mitigation or reduction in risk, severity or consequences of floods. It aims at ensuring that arrangements are in place to mobilize the resources and capability for relief, rehabilitation, reconstruction and recovery from disasters besides creating awareness among vulnerable communities.

4	Drought Prone Areas Programme (DPAP)	Agriculture	Soil Conservation	The Drought Prone Areas Programme (DPAP) as a special project was being implemented for the mitigation of drought disaster. The programme aimed at drought proofing and minimising desertification of fragile areas in the arid, semi-arid and dry-sub humid regions often affected by severe drought conditions and desertification.
5	Mahatma Gandhi National Rural Employment Guarantee Scheme	DRDA	Department of Panchayat Raj	Providing at least one hundred days of guaranteed wage employment in a financial year for the livelihood.
6	National Rural Health Mission	Health	Department of Health & Family welfare	NRHM is providing comprehensive integrated health care to the rural and vulnerable sections of the district
7	Prevention of Epidemics by Health Dept.	Health	Department of Health & Family welfare	Disaster management of health, sanitation and hygiene services is crucial to prevent an outbreak of epidemics.
8	National Vector Borne Diseases Control Programme (NVBDCP)	Health	Department of Health & Family welfare	National Vector Borne Diseases Control Program (NVBDCP) is the key program for prevention/control of outbreaks / epidemics of malaria, dengue, chikungunya etc., vaccines administered to reduce the morbidity and mortality due to diseases like measles, diphtheria, pertussis, poliomyelitis etc. Two key measures to prevent/control epidemics of water-borne diseases like cholera, viral hepatitis etc. include making available safe water and ensuring personal and domestic hygienic practices are adopted.
9	Integrated Disease Surveillance Project (IDSP)	Health	Department of Health & Family welfare	IDSP is to strengthen capacity at state/district levels to detect and respond to the epidemics in early rising phase. Under the project, the district and states have been strengthened by providing additional technical manpower (epidemiologists, microbiologists, entomologists), training of rapid response teams for outbreak investigation and control, strengthening of laboratories for detection of organisms causing epidemic prone diseases, and establishment of IT network for data

				compilation, dissemination and analysis.
10	Awas Yojana (IAY & PMAY)	Housing	PR & DW and H&UD Deptt	The objective of the scheme is to provide housing to all poor.
11	Control of Animal Diseases	Animal Husbandry	Animal Resources and Dairy Development	Central Plan for control of animal diseases
12	Backward Regions Grant Fund. (BRGF)	Works	Panchayati Raj Department	BRGF is used for meeting critical infrastructural gaps and other developmental requirements
13	Centrally sponsored scheme for strengthening of fire & emergency	Fire & Emergency	Fire Service	The scheme is to strengthen fire and emergency services in the country and progressively transform it into Multi-Hazard Response Force capable of acting as first responder in all types of emergency situations.

17.7 Roles of District planning committee on financial outlay on mainstreaming Disaster Risk Reduction (DRR) in development programmes.

The 73rd & 74th Amendments of the constitution marked a new era in the federal democratic setup. The 74th constitutional amendment act mandated the establishment of District planning committees for consolidating plans prepared by the panchayats and municipalities in the district into Draft District plan.

The DPC should be the nodal agency for district level planning & related task. It is found that Disaster Risk Reduction and climate change adaptation considerations are not appropriately addressed during the process of district planning through the DPCs.

Economic losses due to disasters can be reduced by incorporating risk mitigation measures in the development projects. Accordingly financial outlay can be done in development projects. The following roles may be played by DPC on mainstreaming Disaster Risk reduction in development programme.

1. Include DRR in the development projects. (Consider disaster risks before initiating development projects)
2. Ensure Risk sensitive and informed Developmental projects (take professional advice of a disaster management expert to vet the project proposals)
3. Consider vulnerabilities and needs of the community (physical, Social, Economic & environmental)
4. Sensitize and build capacity of the key stake holders (build local capacity and reduce vulnerability).
5. Facilitate integration and inter departmental linkages (village level planning, GP level Planning and Block level planning)

17.8 Fund provision for disaster preparedness & capacity building

The expenditure for disaster preparedness Mock Drill & capacity building programmes will be provided by OSDMA/SRC.

CHAPTER 18

LESSONS LEARNT AND DOCUMENTATION

Disaster Management activities in the past heavily relied on the capacities and agencies of the governmental organizations. There is a need to coordinate with NGOs and trained manpower for voluntary services and mobilize their services at the time of disaster to supplement manpower. NGO vitalization, capacity building and coordination cell needs to be established to continuously build community-based responders and resources to manage disasters.

DRR activities were loosely integrated with development programs and plans. Hence, active and targeted prevention and mitigation of disaster impacts could not be achieved.

Resource conflict, overlapping of functions and gaps in relief line services largely arose due to absence of clear and elaborate incident command system and updated database of inventories of resources. It was learnt that timely documentation of these things can be very resourceful in quick decision making, mobilization of manpower, optimum utilization and synergy.

Also, in the past no incident specific report is available for various disasters that have struck the district. Documentation is little and mostly limited to assessment of losses of life and property for determination of nature and quantum of assistance. It is felt that documentation should include physical and financial interventions and innovations and best practices. A detailed analysis of performance in disaster management per occurrence can provide a valuable insight into lacunae and successes and required modification to existing disaster management structures and processes.

Thus, documentation of disasters is to be more analytical and informative. The past failures would be indicative of weak points in the plan and success and innovations would lay down new processes and structures for making disaster response more effective, efficient and empowering.

Last year in 2023 Subarnapur faced Heavy Rain on 02.08.2023. The district received 1320.6mm rainfall on that day and Birmaharajpur received the highest rainfall i.e 272.4mm. Due to heavy rainfall, the Hariharjor dam (Thengo dam) water raised & was managed by the irrigation personnel. The stakeholders of the command area of the dam were informed. However, the excess water was also passed through spillway. The discharged water & spill water merged and create some damage in the lowline area. Two poultry farms were damaged & about 1200 poultry were lost their lives. Only 93.7284 ha crop loss was reported. The sever loss was minimised due to awareness generation & timely dissemination of warning information.

From the last flood situations, we learnt that: -

1. Local people must be made aware before or during monsoon period to be in preparedness & readiness to face an unexpected flood situation.
2. District administration & Block administration must be always in preparedness & alert to tackle the emergency situation.
3. Proper coordination must be established among District, Block Administration & Line Departments to manage any possible hazard.
4. The irrigation staff must be trained on dam safety and reservoir water management.
5. The volunteers/Task Force members must be selected village wise & trained to discharge their duties in pre-situation, during the situation & post situation of an incident.

If proper preparedness measures will be taken prior to a hazard, the impact of that hazard can be minimized & mitigate. A combined effort, coordination & cooperation among the officers & general public make it easy to manage any disasters in a smooth manner.